



**FACULTY OF ENGINEERING  
AND SUSTAINABLE DEVELOPMENT**

Key success factors of supply chain  
relationships:  
— — *Multiple-case studies in China from  
buyer's and supplier's perspective*

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## Abstract

A global trend is that buyer-supplier relationship is transforming from adversarial competitive to collaborative relationships. To respond dynamic business circumstances, it is important to know what factors enable development of collaborative partnerships with suppliers. This paper analyzes how this applies to buyer-supplier relationship by investigating a multiple-case study of electronic appliances manufactures in China. The author identifies different types of buyer-supplier relationship and gives perspective of differences in-between their relationship motivations and expectations and how these views differ depending on the companies' level of integration (ownership vs independent suppliers). It is concluded that the key success factors for good buyer-supplier relationships are trust, openness and communication and success factors from western research is valid in Chinese firm as well. Besides, industrial cluster creation is one of the most important success factors for good buyer-supplier relationship in china. Creating a platform for such relationships, management system and support program etc, is necessary to fully utilize these key success factors.

**Keywords:** buyer-supplier relationship, collaborative relationship, success factors

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# 1. Introduction

The significance of managing supply chain relationships in conducting efficient business has been acknowledged worldwide. Various studies have been accomplished on the possibilities to improve the buyer-supplier relationship. This chapter provides information about the purpose and outline of thesis project.

## 1.1 Background

A big part of managing supply chains involves the issues of how to manage multiple relationships in-between organizations. Especially along with widespread globalization, the rapid development of new technologies and some other factors, many manufacturers have faced increased competition in recent years. To respond to the pressure of highly competitive and changeable environment, many manufacturers start to develop strategic partnerships with their suppliers. As a result, the relationships between buyers and suppliers are no longer adversarial, many organizations are now transforming into closer, more collaborative and long-term relationships.

Various studies have been completed on improving close cooperation between buyers and suppliers in order to achieve competitive advantages. For instance, Briggs (1994) and Gradde & Hakansson (1994) pointed out that there are needs for organization to shift toward closer cooperation in buyer-supplier relationship. Kamath and Liker (1994) announced there are benefits include increased quality and knowledge, more innovative solutions when firms integrate suppliers in product and process development.

However, looking at the literature which concern buyer and supplier's relationships and supplier involvement are based on either only the buyer perspective or on case studies in highly developed countries. There is rather little research made from the supplier's and developing countries' perspective. Lambert and Cooper (2000), Martinsons and Tseng (1995) emphasizes that more and more companies have implemented global supply chain strategies in developing countries such as China. Especially since China has become a potential global supply chain base, there are strong needs for understanding supply chain relationships in China further. Therefore, in order to be able to respond to this, it is important to investigate supply chain relationship in Chinese supply chains from both buyer and supplier perspective. This thesis intends to make a footprint in this fairly untouched research area.

## 1.2 Purpose

The purpose of this thesis is to investigate and answer the following research questions:

RQ1: What kind of buyer-supplier relationship types can be identified from the multi-case studies?

RQ2: Does the motivation and expectation on relationship in buyer and supplier match?

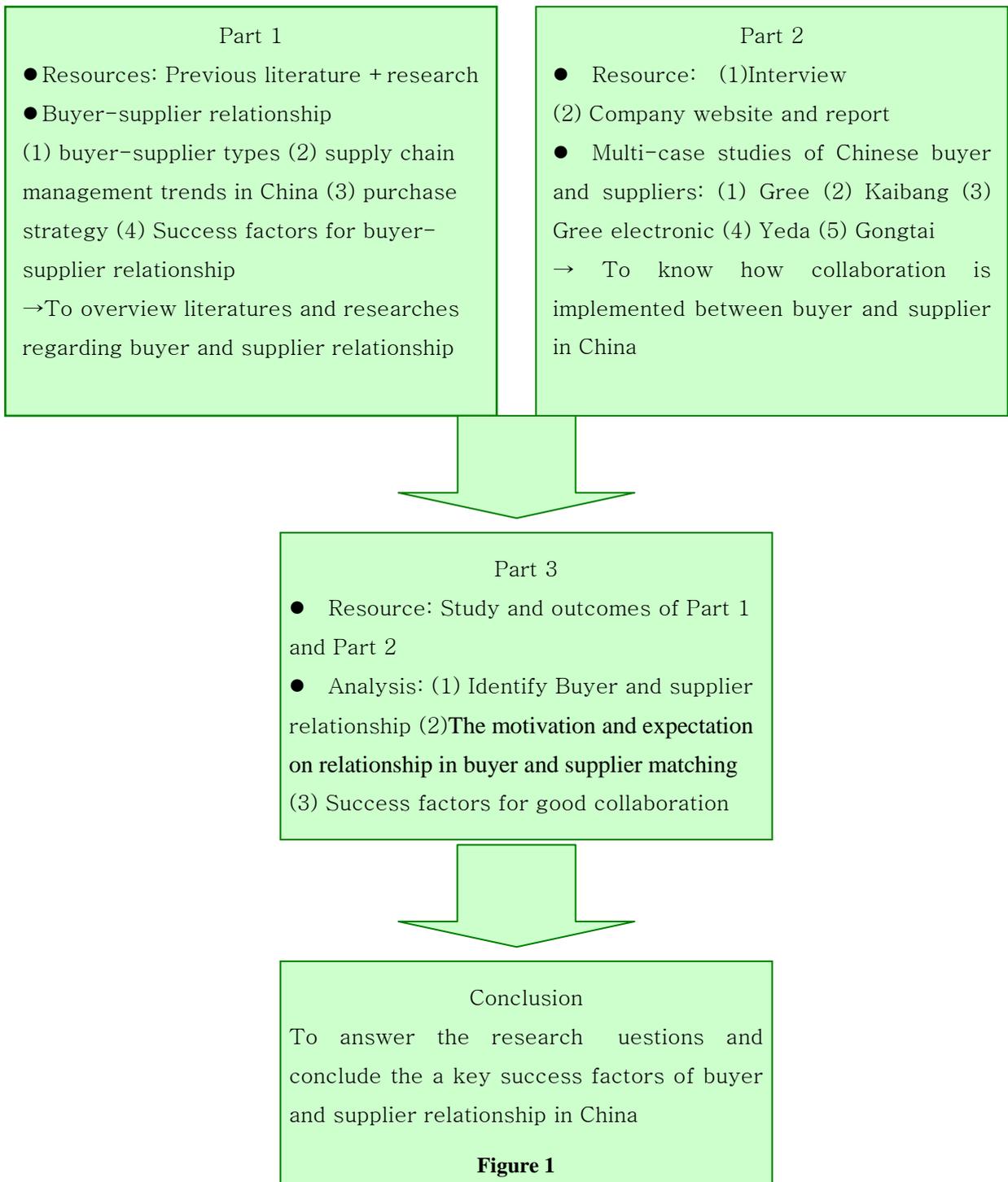
RQ3: what are the key success factors for collaborative relationship between buyer and supplier in China?

## 1.3 Outline and Contributions

A global trend is that buyer-supplier relationship is transforming from adversarial competitive to collaborative relationships. To respond dynamic business circumstances, it is important to know what factors enable development of collaborative partnerships with suppliers. By investigating above research questions, I want in this paper show how this applies to buyer-supplier relationship by investigating a multi-case study of electronic appliances manufactures in China. Good collaborative buyer-supplier relationships does not just happen, but are a result of different efforts .Therefore, I first overview previous research and literature to understand “what is buyer-supplier relationship?” “what is supply chain management trends in China?” “what are the success factors for good buyer-supplier relationship?”. Then based on description and analysis of multi-case studies, I show how buyer-suppliers relationship has been carried out and what the success factors for good collaborative relationships are. The outline of thesis can be illustrated as Fig1.

In line with this, the thesis project consists of 8 chapters. Section 1 tells the purpose of thesis and background of the buyer-supplier relationship. Section 2 is explain the main method that are used for achieve purpose. Also limitation and contribution of this report is presented. Section 3 presents previous research in this field and summarizes a number of frameworks that are used later in the thesis to analyze the customer supplier relationships in chosen case studies. Section 4 presents the description and results of multi case studies. Internal supply chain relationship between Gree and its two subsidiary suppliers (Kaibang motor, Gree Electornic) are described from both buyer and supplier perspectives. Section 5 presents the description and results of case multi-case studies as well. The external supply chain relationship between Kaibang Motor and its two external suppliers are presented. It involve both buyer and supplier perspectives on relative topics. Section 6 presents the analysis on case study in order to answer research questions. Section 7 presents conclusion of all results. Section 8 presents all the references that

used in this thesis work.



All in all, my contribution to research area can be summarized as:

- (1) Provide empirical data of buyer and supplier relations in China
- (2) Consider both the buyer and the supplier's views on relationship in Chinese manufacturing

firm

(3) Describe how collaboration is different between internal supply chains and external supply chains in China

(4) Provide analysis of different key success factors for good collaborative buyer-supplier relationship

## 2. Methodology

This thesis project is divided three parts: theoretical frame work, empirical multi-case studies and analysis parts in order to achieve the main purpose.

In theoretical frame work, previous researches and literatures are overviewed in order to understand general situation of buyer-supplier relationship, trends of supply chain management in China and success factor of good buyer-supplier relationship. It provides base for the further study.

In empirical multi-case studies are mainly based on interview. Additional company reports and website are also used as resource. Multi-case studies involve different electronic appliance manufactures such as Gree, Kaibang Motor, Gree Electornic, Yeda and Gongtai. It will be divided to internal supply chain and external supply chain relationships then presented in the report. Internal supply chain involve Gree and its two subsidiary suppliers (Kaibang Motor and Gree Electronic), External supply chain involve Kaibang and its two external suppliers (Yeda and Gongtai).

In overall analysis part, the resources are come from both theoretical frame work and empirical description. It makes further analysis on to answer research questions.

### 2.1 Case approach

According to Ghauri & Grønhaug (2005), there are two different research approaches in research study. These are qualitative and quantitative. Briefly, qualitative approach has more emphasis on understanding. It focuses on informant's point of view and process oriented. It is more close to interpretation and rational approach and it has subjective insider view. On the other hand, the quantitative approach has more emphasis on testing and verification. It focuses on facts or reasons and more close to logical and critical approach.

A large part of this thesis project is based on qualitative approach by performing interviews. Because 'relationships' is not just figures and facts, is contains emotion, culture and complicated factors too. Therefore, face to face interviews in the form of dialogue and

participative observation are more suited rather than numerical approach.

According to Yin(1994), the choice of case study can be either single case or multiple case designs. While single case widely used on to test or confirm theory by unique or extreme case, multiple-case is used on to study same phenomenon in different cases in order to see whether or not delivery similar or different results. In my thesis project, firstly, main purpose is to know for different formation of supply chain relationship (internal supply chains or external supply chains), how buyer-supplier has been carried out and what the success factors for good collaborative relationships are. Therefore multiple-case design is more suitable rather than single case study. Moreover, throughout multiple-case design, looking at one of case company (Kaibang Motor) both as a supplier and a customer can bring interesting inputs in the research area since there is relatively rare to show three layer analysis of supply chains. Lastly, by using multiple-case design, I could avoid misrepresentation and misjudgment but maximize the access to the evidence to a larger degree of generalization. For full generalization, more quantitative analysis with a large set of customers and suppliers have to be performed.

In order to retain objectivity and reliability, I recorded whole process of interview, asked many open questions from several different aspects such as cultural, individual and organizational. In addition I have completed a complimentary survey for the participating companies to rank their relationships on different factors. Also secondary data such as company reports, commercial magazines have been used.

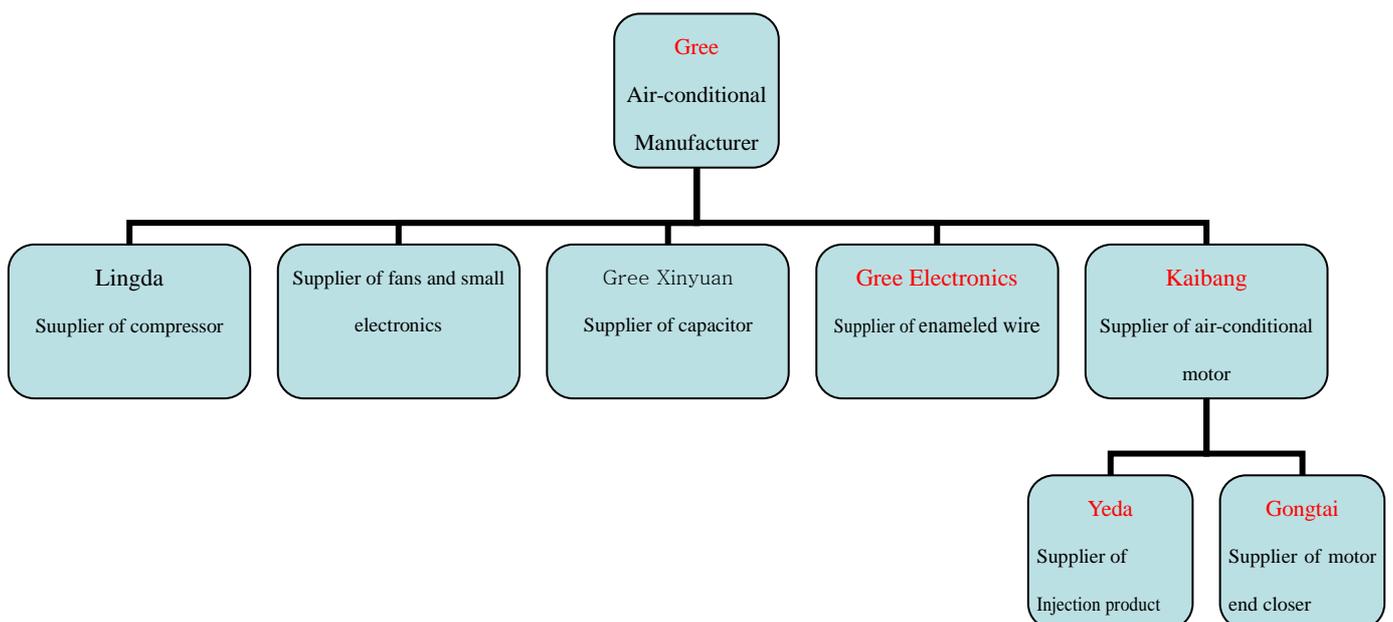
## **2.2 Research Design**

After pre-study on research field, I found the gaps between previous studies and future needs. As supply chain relationship is relatively new research area, it seems like more empirical studies covering various industries and perspectives were needed. Especially China is fast growing market and global supply chain base. Thus I started from this angle, forming the research questions.

As multiple-case company, Gree has been chosen. Gree is one of the biggest air condition manufacturers and was founded in 1989. Even though Gree imports worldwide, have production lines abroad (Pakistan, Vietnam), most of the products are still produced in China (Zhuhai, Hebei, Chongqing etc) and thus it has many supplier relationship in China. Especially in recent years, Gree has implemented its own supply chain management IT system and special strategies in managing supplier relationships. Therefore it can provide good insight to this thesis project.

Interviews are conducted between buyers and suppliers and I divided two different categories. Gree has five main suppliers which are fully owned by Gree. First study is performed at two of those suppliers which are called Kaibang Motor and Gree Electronics. It is categorized as Internal supply chain and the results of these interviews are found in section 4. I made Face to face interview with general manager of Kaibang Motor and Gree Electronic and it was arranged at their company site. The questionnaire was based on open questions regarding buyer-supplier collaboration and relationship topics (Appendix 1). Each of the interviews took about half day. Besides, I also looked around their manufacturing area and observed manufacturing process, products and overall situation. I had a phone meeting with a purchasing manager of Gree for an hour. The general information of company is gained from official websites and company reports.

The second study was performed at two suppliers of Kaibang which are called Yeda and Gongtai. It is categorized as External supply chain and the results of these interviews are found in Section 5. I made face to face interview with owner of Yeda and Gongtai and it was arranged at their company site. I used same questionnaire as a first study (Appendix 1). Each of the interviews took about half day. The manufacturing process, products were introduced by owner at factory and I observed overall situation of company. The general manager of Kaibang Motor answered some supplementary questions by email. The general information of company is gained from official websites and company reports. These relationships are illustrated in Fig.2. Interviews companies are marked in red.



### **2.3 Limitation**

The one of the limitation is that I have not been able to identify all success factors for collaborative relationship. Also, my thesis project describes only a limited part of a buyer-supplier relationship and relates to a very specific industry.

Further, the thesis is limited to performing quantitative analysis on multiple cases. In order to make generalizing conclusions, more quantitative analysis is needed.

## **3. Theoretical Framework**

This chapter presents previous research in this field and summarizes a number of frameworks that are used later in the thesis to analyze the customer supplier relationships in chosen case studies.

### **3.1 Buyer and supplier relationship: Adversarial competitive VS Collaborative partnership**

According to literature, Supply Chain is effectively a larger network of supplier/customer players' and that fuller integration, beyond both the internal activities and the first-level suppliers can bring increased benefits. Therefore how to deal with supply chain relationship while some of the purchasing, producing, transferring and marketing process is strategically important, also it will influence total supply chain.

Looking at supply chain relationship research, buyer and supplier relationship can be divided into two major types: "adversarial competitive" and "collaborative partnership". Firstly, Shapiro (1986) claims that the main goal of the traditional adversarial approach is to minimize the price of purchased goods and services. Therefore in this relationship, in order to obtain a higher bargaining position compared to other suppliers, the buyer keeps a big number of suppliers and make only short-term contracts. In this case, buyer does not use total resources of the supplier but only some and thus suppliers have less possibility to provide value-added services, technology gains and other methods of gaining competitive advantage to buyer. Therefore it is not likely lead to collaborative long-term relationship. Later Mayhew (1985) suggested that buyers should not only consider price-based criteria, but should consider more about performance criteria, such as quality and delivery for the relationship between buyer and supplier. Morgan (1987) observed a tendency that customers shift from an arm length relationship (a number of competing suppliers) to closer collaborative relationship.

In order to move forward collaborative relationship, it is requiring trust, commitment and willingness to share risks in long-term cooperation. Especially for effective collaboration, good communication is needed at all levers and information should be shared in an open way. Also continuous inter-and intra-improvements are needed. Ellram (1990) suggested four important factors that should be considered when it comes to buyers and supplier partnerships. These factors are (1) financial issues, (2) organizational culture and strategy, (3) technology. These factors are relatively more qualitative and longer term than factors which are involved in traditional supplier selection models. Also, these factors can play supplement role rather than replace, it helps to developing strategic partnerships with suppliers.

At the end, general differences between “adversarial competitive” and “collaborative partnership” are summarized by Lamming (1993) and illustrated in following Table 1:

Table I Comparison of adversarial and collaborative relationships

Relationship factor	Adversarial competitive	Collaborative partnership
1. Nature of competition in supply market	Price based; competitive	Collaborative; technology-based
2. Basis for sourcing decision	Competitive bidding (price-based)	Long-term performance history
3. Role of information transfer and its management	One-way; closed	Transparency of costs in each direction
4. Attitude to capacity planning	Independent	Shared problem which is strategically planned
5. Delivery practices	Erratic	JIT, small quantities on an agreed based
6. Dealing with price changes	Traditional price negotiation; win-lose	Collaboration on cost reduction programmes; win-win
7. Product quality	Aggressive goods inward inspection	Joint efforts with aim of zero defects
8. Role of R & D	Assembler designs and supplier makes to specification	Supplier involved early in R & D process
9. Level of pressure	Low – purchaser will go elsewhere if dissatisfied	High – continuous improvement to identify better methods and materials leading to lower costs

Source: Lamming (1993)

### 3.2 Overview Industrial clusters phenomenon in China

Li & Fung research centre (2006) overviewed the industrial clusters in China. Generally speaking, Industrial cluster means interconnected enterprises in a particular industry that are centralized geographically and share related production inputs, specialized labor pools, distribution and communication channels and network association. Especially cluster approach emphasize on the linkages and interdependence between actors in the network of production when producing products and services and crating innovations.

Industrial cluster is well developed in various industries in China. These are mostly around booming cites in the eastern coastal region, such as Yangtze River Delta (YRD), the Pearl River

Delta (PRD) in Guangdong, the Bohai-rim region in the north. There are many different types of industrial clusters in China, such as export-oriented clusters, high-tech industrial clusters, resource-driven cluster and market-driven clusters.

Most of Chinese enterprises in the industrial clusters are privately owned SMEs. It has high degree of division of labor and specialization. Thus many enterprises are integrated together to form a complete production line in the cluster. Clusters are mainly found in certain industries in China including textile, electronics, plastics, automobile parts etc. Most of industrial clusters run in life cycles and it is very similar to product life cycles. It goes through four stages which are named birth, growth, stable and decline.

Mainly there are two types of industrial cluster linkages- Vertical and Horizontal linkage  
Vertical linkage is the relationship between supplier and buyer. It is formed from core suppliers that produce the products and services that are sold to final buyer. It also include suppliers at an earlier stage of the value chain that provide the inputs such as raw materials, intermediate good and services when assemble the final good and services. In this relationship, supplier can get incentive to move close to the buyer to supply the growing regional market. buyers, in turn get benefits from low transportation and transactions costs, economics of scale and therefore enhance overall competitive advantage.

Horizontal linkage is the relationship between competitor and collaborator. It includes suppliers that produce the same or similar goods and services at a specific level in the value chain. In this relationship, enterprises get benefits from accelerated innovation through greater market access and better infrastructure such as availability of skilled labor, raw materials etc.

Specially, Buyer and supplier in a value chain can work more effectively together to improve the efficiency of the production process and quality of products by close linkage within an industrial cluster. Well-developed cluster allow buyer to sourcing locally instead of from distant supplier and thus buyer can get down the transaction costs, minimize the need for inventory, reduces delays. Also, it enables constituent suppliers to operate more productively in sourcing inputs and therefore improve productivity.

### **3.3 Overview Supply Chain development among Chinese manufactures**

Under the international circumstance, a focus of Supply chain management has developed from operation efficiency such as components, inventory and financial issues to strategic supply chain relationship issue. Although the supply chain management idea was adopted relatively early in China, compared to developed countries, developing process was slower and falling behind. China logistic and purchasing association (2004) categorized character of Chinese

supply chain management and it can be summarized into four different periods:

- (1) Before 1978: during this term, Chinese manufacturing industry fell behind. A concept of supply chain was not heard of to manufactures. Under the special political condition, production plan and management decision of Manufactures were controlled by government. The production was not responding customer's demands rightly and there were obvious gaps between what they actually can provide and what customer needs.
- (2) From 1979 to 1992: Along with fast growing of international trade, Chinese manufacturers started to use their resources more effectively. Customer satisfaction and demand had become important factors for manufacturers. In this circumstance, for the very first time manufacturer started noticed importance of supply chain management and tried to control and manage it.
- (3) After 1993: Chinese economy was successfully transforming into market driven economic step by step and therefore the competition was getting tougher. In these circumstances, manufacturers needed to consider purchasing strategy in order to reduce cost and improve efficiency. But most of studies and practices were limited in supplier plan, reduce cost, quality control rather than include whole supply chain management from raw material to final customer such as supplier, retailer etc. also most of manufactures especially small and medium sized ones have faced supply management problems.
- (4) 21<sup>st</sup> Century: industrial cluster is dominated by Chinese manufacturer. Throughout centralizing facilitates linkages with suppliers and buyers, at the same time encouraging a mixture of cooperation and competition, interconnected manufactures in a particular industry enhance competitive advantages.

China logistic and purchasing association (2004) also did questionnaire survey in 500 manufacturers regarding supply chain management issue and they provided a report from relative 88 replies. The results provide common appearance of supply chain relationship and supply chain efficiency among Chinese manufacturers. It can be summarized in following:

Regarding supply chain relationship, manufactures replied that although they have established supply chain department recently and the attention is growing, there are relatively fewer workers are hired in supply chain management department compare to others. Most of manufactures consider many different factors when they choose their suppliers. However, they replied that most of time firstly consider competitive price and then secondly see supplier's overall performance. In terms of buyer relationship, most of manufactures said that they are trying the best to keep good relationship with their buyer. However their performance and

outcomes often does not meet buyers' demands. They often have communication problem with their buyers. The communication is even tougher with foreign customers. Most of manufactures start to outsource their logistic service to 3PL Company, however the contracts are usually limited in short term and hard to develop to partnership relationship. Regarding supply chain operation, large numbers of manufactures do not engaged in global supply chain and limited in domestic range. The challenge of supply chain operation lies on controlling product quality and efficiency.

Regarding appearance of supply chain efficiency, most of manufactures are bad at JIT (just in time), so delivery time is usually delayed from original plan. Their production flexibility is usually low and manufacturers do not react rightly on customer requirements and changes. They explained that usually the whole supply chain performance is not smooth enough.

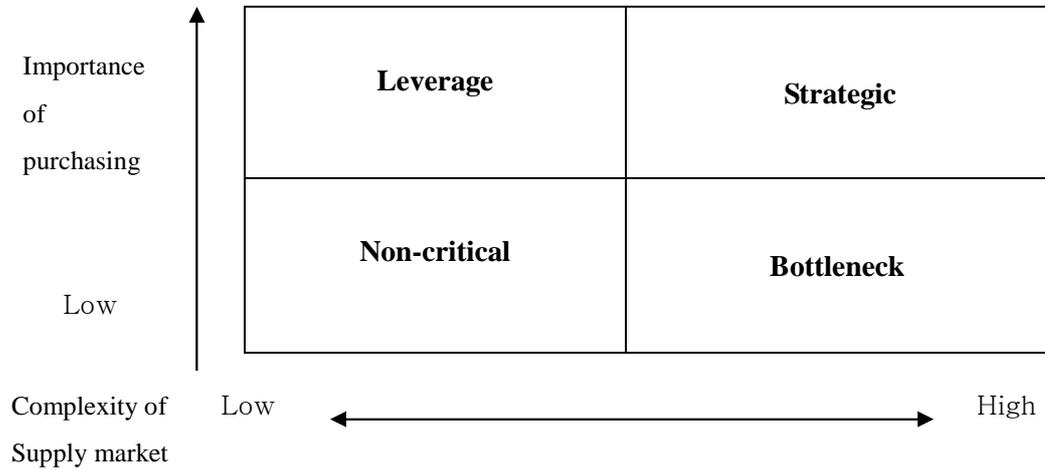
At the end the reports summarized Chinese manufactures supply chain management overall situation. Most of Chinese manufactures have noticed importance of supply chain management and relationships. However, many of them lack good workers, engineers and managers and also engagement with an international supply chain environment. In addition lack of technical support, management skills and overall supply chain performance skills creates further challenges.

### **3.4 Purchasing strategy**

By reviewing previous researches, it can be found out that buyer' purchasing strategy plays significant role in the buyer and suppliers relationship. Krljic matrix (1983) is generally used on issue of how to manage the relationships associated with the purchases among buyers. Also it illustrates four main categories which can classify the degree of complexity of the component/product that affects the level of supplier involvement. These categories are *leverage*, *strategic*, *bottleneck* and *non-critical categories*. In short, leverage category indicates the purchase that is easy to manage but strategically important. Non-critical category indicates the purchase that is easy to manage and have a low strategic importance. Strategic category indicates the purchase that is hard to manage and have a high strategic importance. Bottleneck category indicates the purchase that is hard to manage and have a low strategic importance. On the illustrated figure, the complexity of supply market can be measured by factors such as potential monopoly condition, technological advance and product complexity. Moreover Caniels and Geldernan(2003) pointed out that the *strategic* and *bottleneck* quadrants are more likely dominance by the suppliers. In general, the *leverage*, *non-critical* quadrants are more

similar to balanced power situation.

**Figure 3 Kraljic's matrix (1983,p.111)**



### **3.5 Overview previous research on Success factors in a partnering relationship**

Marianne Kinnual overviewed previous research on the factors that are influential on successful relationships between buyer and supplier and categorized into three different factors- Business, Structural and relationship factors. Business factors are related to hard factors that can be measured in terms of money. Structural factors are related to hard factors that can be evaluate and assessed between buyer and suppliers, such as concrete structures, processes and techniques etc. Finally, relationship factors are related to soft factors that hard to evaluated or measured, such as value-based, people-dependent factors etc. I found that it is relevant to my thesis work and applied some of success factors in analysis part. The main category is illustrated into Table 2 below.

Factor types	Success factor	References
<b>Business Factors</b>	Realistic vision of relationship	Ellram 1995 Tuten and Urban 2001
	Long-term perspective	Ellram and Edis 1996
	Satisfactory performance	Tuten and Urban 2001
<b>Structure Factors</b>	Information exchange	Rota et al. 2002
	Practices-Concrete structures, process and techniques	Marianne Kinnula et al
	Interaction (communication) Process	Ellram 1995 Ellram and Edis 1996 Tuten and Urban 2001 Mohr and Spekman 1994
<b>Relationship Factors</b>	Sense of responsibility(commitment)	Kern and Willcocks 2000
	Openness	Ragatz et al. 1997 Hartley 1995
	Trust	Dietz 2004 Domberger 1998 Spekman et al 1998
	Flexibility	Ragatz et al.1997

Success factors in table will be briefly summed up in here. First, Business factors include realistic vision of relationship which means meet buyer-supplier expectations (Ellram 1995; Tuten and Urban 2001), long-term perspective (Ellram and Edis 1996). Tuten and Urban (2001) found out that when the partners are satisfied with performance and the relationship meet each other's expectations, it can be considered as successful relationship.

Secondly, in Structure factors, Rota et al (2002) emphasize the need for a good information exchange in supply chain relationship for orders and stocks etc. Maiannes Kinnla stresses the importance of concrete structures, process and techniques for successful relationship such as joining steering boards, network environment etc. Ellarm (1995) particularly stressed importance of communication among all affected parties partners for good relationship, such as between partners, internal and external customers and users etc. Also, frequent and accurate communication can prevent problematic situations and future conflicts. (Ellram and Edis 1996; Tuten and Urban 2001; Mohr and Spekman 1994)

Lastly, in Relationship factors, Kern and Willcocks (2000) addressed that both of parties after

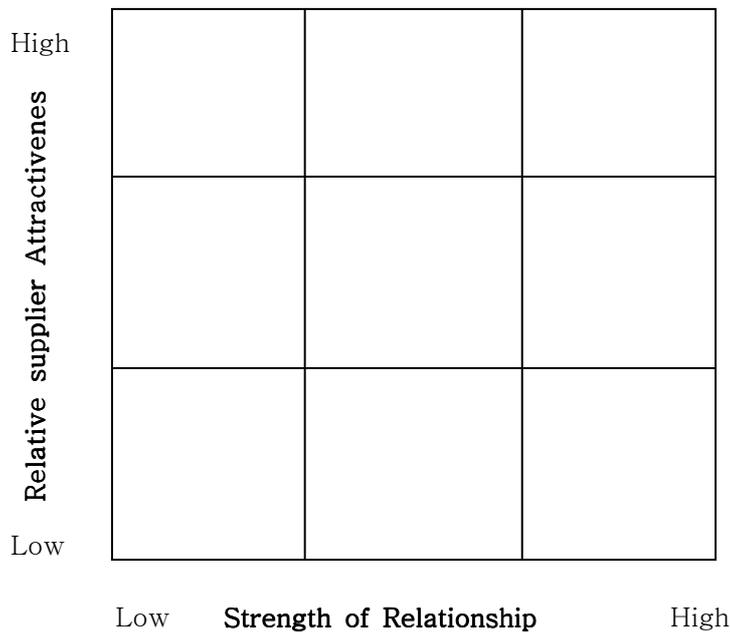
committing to the relationship, there are needs and requirements to fulfill them. Hartley(1995) emphasized that supplier's openness to new ideas and the relationship can increase cooperation. Also Ragatz et al (1997) found out that one barrier to a good relationship was low openness regarding revealing information to the other party. There are general agreements that it is important build good trust in the whole relationship in order to become successful and there are many different ways to build it such as increase in personal contact etc. (Dietz 2004; Domberger 1998; Spekman et al 1998 ). Ragatz et al (1997) mentioned that both buyer and supplier should take flexible action regarding new ideas, decisions and control issues.

After various studies, many researchers concluded that the most successful relationships are based on immaterial factors such as trust, communication and openness etc rather than material factors such as management approach, processes and support programs etc. (Ellram 1991; Ellram 1995; Lee and Kim 1999; Mohr and Spekman 1994; Morgan and Hunt 1994; Tuten and Urban 2001).

Some of the studies pointed out the reasons of failure of partnership. For instance, Ellram(1995) and Tuten and Urban (2001) pointed out that relationship failure was caused by poor communication, lack of trust, poor up-front planning, lack of shared goals, poor relationship management and unsatisfactory performance indicators. Besides, Tähtinen (2001) mentioned some other reasons such as changes in the broader network of partners and the business reasons of one of both parties.

### **3.6 Portfolio theory to supplier relationship**

Rasmus and Lisa (1997) explained that how to understand supplier relationship by using portfolio models and developed a normative portfolio model which can help to manage different kinds of supplier relationship. As a part of that, they suggest to compare supplier attractiveness and the strength of relationship in order to take necessary actions in terms of developing the relationship further.



Supplier-attractiveness is how important a supplier is from the customer’s perspective and it is built on factors adapted from Ellam (1990). This attractiveness can be measured with supplier scale and experiences, market position, technological capacity, performance outcomes, managerial and organizational capacity etc. The measurement of strength of relationship is adapted from Ford D (1984, 1986) and it can be measured with economic factors, character of the exchange relationship, cooperation between buyer and supplier and distance between the buyer and the supplier. This framework will be applied in the analysis part section 6.4

#### 4. Findings and Description – collaboration in Internal supply chain ( Gree and its two subsidiary suppliers) from both buyer and supplier perspective

In this part, internal supply chain relationship in organization which share joint-ownership will be presented. The content of this chapter is based on empirical studies on Gree, Kaibang motor and Gree Electornic.

Gree is the customer in both cases, and Kaibang and Gree Electronics are the two subsidiary suppliers which are fully owned by Gree. Gree and their general view on collaboration with suppliers will be presented. Also, Kaibang’s and Gree Electronic’s views on the collaboration with Gree are presented.

#### **4.1 Customer – Gree**

Gree is the world largest specialized air conditioner company: their main business is the manufacturing, R&D, sales and service of air-condition. During 2009, annual sales revenue for air-condition reached 42.5 billion RMB.

Gree is a leading and successful company that has been profitable for many years. Since 1995, Gree's sales volume and market share has win first place in Chinese air conditioner industry for 15 years. Today, Gree is exporting air conditioners to more than 200 countries and regions worldwide (Europe, Asian Pacific, America, and Africa) and their sales volume of residential air conditioner has won first place in global market for 5 years since 2005.

A large part of production bases are placed in China (Zhuhai, Chongqing, Hefei). However in order to spread the sales network and raise its influence they established manufacture base in Brazil, Pakistan and Vietnam. The largest competitors in the Chinese air conditional industry are Media and Haier. Gree's products are including commercial air conditioners, residential air conditioners and small house hold appliances. They have 20 varieties, 400 series and 7000 models of air conditional to satisfy different demands from variety consumers. Strategic products that they are produced internally are mainly air conditional motor, enameled wire, capacitor, compressor and important components of small house hold appliances. They have several production development and basic research departments such as motor technological institute, CAC technological department and 300 laboratories. They already have nearly 3000 technical patents and they aim to develop and design strategic products to increase customer satisfaction, quality and supply stability. Also the aim of Gree is to become a model of "designed-in-China" instead of just "made- in -China".

##### **4.1.1 Purchasing strategy and supply chain development**

When company produces products, they need many different kinds of components. Firstly company will classify strategically important components and less important ones, then compare the cost between producing internally and purchase from suppliers.

Today, Chinese house hold appliances market is not mature enough. There are plenty of suppliers but most of them are small and medium sized enterprisers which have competitive prices but have no proper TQM or management system, labor intensive, poor technology. Therefore the suppliers which can provide good quality and price components are very limited and usually have many customers at the same time. Especially the house electronics manufacturing products very much depend on strategic components prices for companies'

competitive advantages. Therefore build and develop a long term relationship with supplier is a key success factor for improving efficiency of supply chain management and profit of company.

Under this circumstance, Gree have made an interesting strategic choice on purchasing and supplier development. They emphasize the importance of joint-ownership and M&A with suppliers. They selected five strategic items then found suppliers which have good technology and reputation in market. After then they purchased five suppliers (Lingda, Gree Electronic, Kaibang Motor, small house hold appliances supplier, Gree xinyuan) in 2005. Throughout this action firstly they attempted to ensure stability of main components supply, enable short-term delivery model and secondly to learn technology from suppliers and strengthen new product development with them. All in all, Gree absorb good competence of suppliers and it can become Gree's competence and enhance overall supply chain competence.

Gree and subsidiary suppliers are sharing same business goal and plans; also communication is good not only between manager level, but also overall department level. For example, a manufacture base of Gree and subsidiary suppliers are built close, Gree Electronic and Kaibang Motor even share same cafeteria. This environment provides more frequent communication and shortens delivery time.

Purchaser at Gree is practically involved in the process of new product development and process engineering and technological development of process. It is mostly checking process, prices, performance consistently. However, in order to prevent corruption of purchaser, company switchover purchaser in every half year and thus in generally purchaser creates less value on these issues.

Although Gree have subsidiary suppliers, they avoid becoming too large at one supplier, also avoid having too many suppliers. They usually keep 2-3 suppliers in order to keep good price and quality by encouraged competition. Especially for responding market flexibility, it is not good to depend on only one supplier. Gree purchases 60-70% of components from each subsidiary supplier and purchase left over from external one or two suppliers. Besides five main components, other components are purchased from external suppliers, but follow same strategy.

They have designed their own supply chain IT support system. It provides easy communication way and control the accuracy of production, delivery time etc. most of suppliers check it daily and follows it. Gree don't have specialized supplier development team or department. But one of the main goals is to help supplier become more effective and be able to delivery according to

Gree's demands. Therefore they support suppliers in three ways. First, financially if supplier lack of funds or have a problem, they help them. Secondly technologically, when suppliers need technological help, as long as they are aware of the problem, they are willing to give advice and share information with them. Lastly, give good managerial advice and teach them managerial system. A bankruptcy of subsidiary suppliers directly connected to failure of business, it damages their business badly, therefore as long as there is no big problem, they are willing to help and support suppliers in many ways.

#### **4.1.2 The customer's expectation and demands on the collaboration**

The customer's expectation and demands on the collaboration is rather simple. Firstly, they expected supplier to improve quality and become more cost efficient. Secondly, they allow suppliers to provide component to other customers, but supplier have to priority on satisfying Gree's supply demands first compare to others. Lastly, flexibility and coordinate attitude. Although production plan will be updated and implemented weekly, if there is unexpected change in production line, Gree is expected supplier to responds situation with flexibility and good attitude.

#### **4.1.3 The collaboration with Gree Electronic and Kaibang Motor**

Gree emphasizes the importance of collaboration with supplier, but in fact there are not many ongoing product and process development between them. For example, when they discovered the market needs of convertible frequency air-conditioner, they inform their subsidiary supplier to start developing proper components. Although they share some related technological information during development, the actual research and development work is separated.

Gree make a purchasing and strategic decision and require their subsidiary supplier to follow. Gree only listen to the supplier's idea and advice when it is suite for their purpose and situation. Gree has absolute power on managerial issue, under Gree's policy, suppliers can adjust specific production plan, financial plan etc.

Gree have indirect collaboration with their suppliers including Gree Electronic and Kaibang Motor. However they are encouraging indirect and direct collaboration among suppliers. For example, Gree Electronic was supplying emerald wire 60% to Gree and 40% to other 80 customers. Gree required Gree Electronic to supply enameled wire to Kaibang Motor. Gree Electronic produces high quality enameled wire, while Kaibang Motor needs low quality enameled wire, they needed to invest in new production line. However both of them are belong to Gree and in long term more collaboration needed in order to developing new product and

maintaining effective supply chain, thus although Gree Electronic cannot get any profit return in short- term, they had to follow the decision.

#### **4.2 Supplier one – Kaibang Motor**

Zhuhai Kaibang Motor is established in 2003, is a wholly-owned subsidiary of Gree. Kaibang Motor as a professional micro motors manufacturer, mainly design, manufacture, sales and service micro motors which can use in different kinds of electric appliances like air conditioners, electric fans, washing machine etc. especially over 95% of products are related to air conditioner motor.

Kaibang Motor has two manufacture bases in Zhuhai and Hefei. There are nearly 4600 employees in total. They have their own R&D department and developed the products of 9 categories, 15 series and 380kinds. Especially some of R&D capacity of products like brushless DC motor is at the leading level in China. Kaibang Motor has many certifications and meets the eco-friendly requirements of EU RoHS.

Kaibang Motor average produces around 2,400,000 a year, their sales incomes reached 0.83 billion RMB in 2009. Kaibang Motor's largest and only customer is Gree, they provide almost all manufactured products to Gree.

Kaibang Motor's core competence is mainly three. Firstly is product development ability. They emphasize on new product development and invest lots of money into it. As a result, only in 7 years, their many motor designs already gained national patents and Kaibang Motor have leading level of technology in China. Secondly is good management system. They have integrated international management standards such as ISO 9001:2008 (Quality management system), ISO14001:2004 (environment management system), OHSAS18001:2007(occupation health and safety management system) into management system and it developed ecological environment good quality control and good condition of employees and work place. Lastly, Kaibang Motor's total production ability is relatively high.

##### **4.2.1 The supplier's expectations and demands on collaboration**

Kaibang Motor mainly has three demands on Gree. firstly, even though they are good at sharing information concerning technology, new knowledge and so on, however, while Kaibang Motor share all the information including supply chain process, Gree is not completely share everything with Kaibang Motor. For example, Kaibang Motor has only some awareness on whole supply chain process of Gree. Kaibang Motor demands Gree to be to Share more with

them. Secondly, as Gree is only a customer to Kaibang Motor and Kaibang Motor is wholly owned by Gree, the power between them is not balanced. On the meeting together with Gree, they make agreements on different matters that have concern for future development or problematic issues. Most of time decision is made by Gree and Kaibang Motor has to follow it. Kaibang Motor expected more equal relationship. Lastly, Kaibang expected to have new product development with Gree. At present, most of R&D work is separated. If there is new-product development cooperation between Gree and Kaibang Motor, Kaibang Motors thinks that it can bring many benefits to them such as reduce research fee, shorten research time period etc.

#### **4.2.2 The supplier's view of the collaboration and their contribution**

Kaibang Motor as a subsidiary supplier of Gree, they thinks that their relationship is comparatively stable and a long-term oriented.

As geographically, Kaibang Motor and Gree is located very close and also they have monthly meeting and therefore communication within project runs smoothly. Especially Kaibang Motor gets feedback from Gree which concerns about operation, marketing, service performance in every term and that help Kaibang Motor to adjust problem and improve efficiency.

Kaibang Motor's almost all the revenue originated from Gree and highly depends on Gree. Kaibang Motor provides all manufactured air conditional motor to Gree and it is about 95% of their total production. Gree have another suppliers in terms of air conditional motor (Gree purchase 60% of motor from Kaibang) and consistently compare quality and price to Kaibang. Kaibang gets high pressure from Gree, but at the same time they learned operation experiences from Gree as well.

Kaibang Motor claims that the relationship with Gree has advantages and disadvantages. The main advantage is that increasing profit and shared risk. Usually Kaibang Motor sells everything they produce to Gree, so they don't need any inventory or administrative cost etc. Kaibang Motor can save many unnecessary costs and work then more concentrated on developing their competency. This can be a main reason how Kaibang Motor can be growing this big and fast in such a short term. The main disadvantage is that they have less freedom on decision making and comments. Also they are required to show absolute loyalty to Gree. Kaibang Motor thinks that if their dependency to Gree is not as high as now, probably their relationship can be developed towards more equaled collaborative relationship. That's why Kaibang Motor is seeking and developing relationship with another customer recently.

Kaibang Motor explained that their contribution to Gree is mainly two parts. First is that promise stable supply of motor no matter what. Second is developing their own competency and improve operation efficiency in order to provide cost-effective and good quality products to Gree. The contribution to product and process development was unclear. But according to Kaibang Motor, throughout communication and cooperation, technical knowledge and risk is shared each other.

#### **4.3 Supplier two – Gree Electronic**

Zhuahi Gree Electric was founded in 1986 and became subsidiary company of Gree in 2005. Gree Electric is engaged of manufacturing and marketing of produce enameled wire. The main products include polyurethane enameled wire series, polyesterimide enameled wire series etc. they produce more than 20 types of enameled wire that are generally used in the compressor for air conditioner, motors appliance etc.

There are two manufacture bases in Meanshan and Zhuhai. The average total production capacity of two bases is 15000 tons a year. The production process is now highly mechanized and most of machine is imported from abroad with international level performance.

Gree Electronic mainly has 80 different customers. How ever they provide 60% of total production to Gree and 20% to Kaibang Motor. Leftovers are other customers. Thus Gree Electornic's main customer is Gree.

Gree Electronic's core-competence is mainly know-how advantages. They have been in this business nearly 25 years. They have good experience on how to control process during operation and it ensures high quality of product. Also, although their production line is highly mechanized, according to different customer demands and feedback, the firm need to responds and adjusts faster. Gree Electronic has know-how on when to updates machine and develops process in order to provide competitive price and good quality.

##### **4.3.1 The supplier's expectations and demands on collaboration**

Gree Electronic provides 60% of products to Gree today and they expect the amount should reach about 70-80% within few years. Because have many customer means that you may pay more administrative fee and bear high risk of inventory. Also it means that you have to customize different standards and therefore hard to reach lean production. In other words, it causes low manufacturing efficiency and less profit for the firm in a long term. Therefore they

want to reduce the number of customers and instead provide bigger amount of products to 2-3 customers which have good competence and build stable relationship with.

Their demand on collaboration with Gree is centralized to one thing. In general, Gree Electronic' raw materials are insist of copper and oil etc that are considerably expensive and has high price fluctuation. Thus, capital and inventory turn over rate has become a crucial factor to their business. Although Gree Electronic share consistency supply chain IT support program with Gree and Kaibang Motor and also they get monthly, weekly, daily order plans from them. However there are still many temporary changes in order process and it continuously causes occupation of capital, overstocked inventory then finally drop profit and efficiency. Therefore Gree Electronic suggested that the supply chain IT program should have supplementary policies that reduce these risks for them.

#### **4.3.2 The supplier's view of the collaboration and their contribution**

Gree Electronic thinks that although they are subsidiary company of Gree, considering power balance, dependency, process and outcomes, their relationship is more close to equal collaborative partnership. They have open communication with Gree and Gree respects their suggestions and commitment. However, Gree as a big organization, the management process is rather slow and thus responds are slower then it should be. For example, Gree Electronic suggested the supplementary policies for more efficient supply chain IT program, but haven't get any proper responses yet. .

Gree Electronic explained the advantage and disadvantage of their relationship with Gree. The advantage is that the long- term relationship which is based on trustworthy brings more economical benefits and strengthens their own competency. The disadvantage is that not proper strategies and system of customer (Gree) can influence the efficiency of Gree Electronics' own process badly. Because the relationship is interacted, thus the closer relationship creates bigger influences, no matter how good the one side is, if the other side doesn't response rightly or on time, it doesn't create good value at the end. For example, no matter how Gree Electronic is good at control and manage operation process, because they can't control Gree's efficiency of process, the frequent sudden changes of customers gradually influence Gree Electronic' results. Gree Electronic realized that in terms of long-term relationship, it is very important to share knowledge and techniques together in order to create common benefits and reduce damages.

Gree Electronic explained that their contribution to Gree is mainly two parts. It is providing better quality products in a good price. Consider they are subsidiary company of Gree, they

provide much lower price to Gree compare to any other customers. The other thing is that make contribution on process development. They shares good experiences of their process development with Gree.

#### **4. 4 Relationship between Kaibang Motor and Gree Electronic**

As it concerned earlier, under the Gree policy, subsidiary suppliers of Gree keep comparatively closer collaborative relationships and some of actual business take place between them. Kaibang Motor and Gree Electronic are the one of those cases.

Gree Electronic provides 20% of enameled wire series to Kaibang Motor and it will be increased to 70-80% within few years.

Gree Electronics defines the relationship with Kaibang Motor as Trust (10), Share information (7) clear responsibility and rights (10) dependency to Kaibang Motor (9). (10 is the highest score)

Kaibang Motor scores the relationship with Gree Electronic as Trust (8), Share information (8) clear responsibility and rights (10) dependency to Gree Electronic (5). (10 is the highest score)

From here it is easy to see that both Gree Electronic and Kaibang Motor think that their relationship more than just simple supplier-customer relationship, it is more like long-term collaborative partnership which is based on trust. Especially their factories are located in same industry area; it takes less than 10 minutes to visit each other by walk. Gree Electronic deliveries components daily to Kaibang Motor also they developed friendship from manager to employee level by daily communication. They share information, visit operation site freely, fulfill promises and solve problems together. Especially Gree Electronic product such as enameled wire series are directly used on the motor and thus if there are more understandings in each others product and process, technically it can improve quality and efficiency. Then there are able to create better values on final products and at the end it bring good benefits to mother company. Thus good collaboration of these subsidiary suppliers is crucial to Gree.

“We are gradually extending our business scales by building more factories, open up global markets so on. If quality and service is not following up, customer satisfaction will be fall down then eventually business would not be survived in long-term. From this perspective, we understand that it is important to keep a good relationship between important suppliers and that’s the way to ensure quality and services.” - Manger of Gree

Gree Electronic and Kaibang Motor are highly aware of the situation. Also they think they get great benefits from it. They want to keep even closer collaborative relationship with each other, also want to sharing risk and benefits continuously.

A manager of Gree Electronic suggested building a same purchasing policy regarding raw materials. The reason is that usually when the amount is increasing, the price is getting down, then it brings more benefits among partnership suppliers in future. Also he suggested that due to geographic advantages, if they share same logistics system then Both Gree Electronic and Kaibang Motor can reduce lots of cost. He told me that Gree Electronic and Kaibang Motor are willing to have more collaboration not only in production but also in R&D, logistics, purchase in future.

## 5. Findings and Description – Collaboration in External supply chain (Kaibang Motor and its external suppliers) from both buyer and supplier perspective

In this part external supply chain relationship between organizations (with no joint ownership) will be presented. The content of this chapter is based on empirical studies on Kaibang Motor, Yeda and Gongtai.

Kaibang Motor is the buyer in both cases, and Yeda and Gongtai are the two suppliers. Kaibang Motor and their general view on collaboration with two suppliers will be presented. Also, Yeda's, followed by Gongtai's views on the collaboration with Kaibang Motor are presented.

### 5.1 Customer – Kaibang Motor

#### 5.1.1 Purchasing strategy and supply chain development

Kaibang Motor has total 176 suppliers. Their main purchasing strategies can be summarized as three points. Firstly, to achieve dominance of public resources in market secondly guarantee and satisfy demands of market and then purchase necessary resources with competitive price. In order to reach this, Kaibang Motor prefers to develop closer collaborative relationship with strategic suppliers while keep simpler relationship with non-strategic suppliers

Kaibang Motor classified its strategic items as motor end closer, axle and polyurethane enameled wire. All of these items have 15-20% shares in business income.

Kaibang Motor mainly considers three factors when they choose suppliers. Firstly, check business size and competence of supplier. Business size is important because it is directly related to productivity. If suppliers' condition is not good, it is hard to ensure stability of supply. Kaibang Motor especially emphasizes technology competence, whether or not suppliers have leading technology in present market. Secondly, check whether or not company's condition is stable. In order to maintain consistency of product quality, it is important to keep a long term relationship with a supplier. If suppliers' condition is not stable, the relationship ended in short term, then quality is also cannot guaranteed. Lastly, check whether or not price is competitive. Moreover, suppliers responding attitudes on problems and requirements of Kaibang Motor are very important too.

Kaibang Motor and their suppliers share neither same business goal nor plans. Kaibang Motor rarely intervene with supplier's situation. Although Kaibang Motor doesn't have restraint on suppliers, but when suppliers have close relationship with their competitor, Kaibang Motor puts high pressure on them. Kaibang Motor has regular communication with suppliers by phone, but it is not regular and limited on manager level rather than all level and face-to face communication is not so frequent.

Because there is few direct communication between Kaibang Motor and suppliers, purchaser at Kaibang Motor plays considerable role in many ways. For example, if technically there are problems or need help, usually purchaser delivery the important information to suppliers, it is not so common that technicians have direct communication. Also purchaser delivery important design plans, requirements to suppliers.

In line with Gree's purchasing strategy, Kaibang Motor also wants to develop long-term collaborative relationship with their suppliers in order to optimize profit and reduce unnecessary costs. However it seems like it is still in initiative period. Kaibang Motor explained that they pay attention on developing long-term collaborative relationship with their strategic supplier, but they are busy with their own development at the moment; don't have enough time, money to put much effort on it.

### **5.1.2 The customer's expectation and demands on the collaboration**

Kaibang Motor has high expectation and demands on quality. Kaibang Motor has signed quality guarantee agreement with their suppliers. As long as suppliers achieve Kaibang Motor's quality criteria, they do not require specific qualified certifications on products or management system,

Kaibang Motor sets strict penalties on quality, so if supplier causes any quality problem, suppliers have to be fully responsible for the Kaibang Motor's economic losses and at the same time must pay penalty. They also have concerns about product and collaboration security on the contract. Suppliers cannot provide Kaibang Motor's product design to any other companies, also suppliers cannot abuse Kaibang Motor's resources. Lastly, as Kaibang Motor is a fast growing company and their production scale is expanding fast, Kaibang Motor wants their supplier to expand production scale in order to respond to Kaibang Motor's needs.

### **5.1.3 The collaboration with Yeda, Gongtai.**

Kaibang Motor answered what they think about the relationship with Yeda and Gongtai.

Yeda is a small sized supplier which provides injection products to Kaibang Motor. They started the buyer-supplier relationship in 2007. Kaibang Motor thinks that Yeda is good at controlling quality and thus Kaibang Motor has relatively high trust on Yeda's quality. However, Kaibang Motor can find substitute supplier any time, thus Kaibang Motor is not depending on Yeda's products and there is yet no plans for future collaboration. Because Yeda's products are rather simple and not so critical for Kaibang Motor, there is not so many communications between them. Mostly they only make some discussion about material. Their technicians have some communication about samples occasionally but it is very rare.

Gongtai is a medium sized supplier which provides motor end closer to Kaibang Motor. Along with Kaibang Motor's fast growth, the production scale has been extended, Kaibang Motor needed to find new suppliers in order to satisfy their demands. That's how Kaibang Motor started the relationship with Gongtai. Kaibang purchase 70% of their "motor end closers" from Gongtai and Kaibang Motor thinks they are highly depended on Gongtai's products. They have frequent communication concerning technical issues (size, requirements etc). Kaibang Motor is pretty satisfied with present collaboration. There is no direct product and process development between them; however, there are some of indirect communications that improve product quality and influence new development.

## **5.2 Supplier one – Yeda**

Yeda was established in 2006. They produce different injection products which are used in different home electronic appliances. They have 16 employees and six main customers.

### **5.2.1 The supplier's expectations and demands on collaboration**

Yeda is 50% satisfied with current relationship. They have some expectations and demands on collaboration with customers. They are expected to have more frequent communication with

their customers. Because their products are rather simple, it is hard for them to become an important supplier to their customers while there are many substitute competitors and they have limited capacity. Therefore Yeda wants to have more frequent communication in order to develop deep trust and understanding to each other. Also it can help them to achieve customer satisfaction and respond to customer demands better. Secondly they want to share more risk and information together with the customer. Injection products are highly dependent on module technology. Because they make the injection module according to customer's demands such as size, shape etc, it is belong to customized service. Yeda usually make a new model according to customer's demands and provide samples to them. But sometimes customers don't approve these samples and not even give any feedback or comments on them. It creates high risk and Yeda feels that customer is not taking any responsible for that.

### **5.2.2 The supplier's view of the collaboration and their contribution**

Yeda thinks that their contribution is to providing customized products with proper price regarding Kaibang Motor 's requirements. There is no further collaboration between Kaibang Motor and Yeda.

Yeda knows that they make relatively small contribution on supply chain of Kaibang Motor. Yeda are not aware of Kaibang Motor situation and even don't know which are Kaibang Motor's another suppliers on same products. Once Yeda asked Kaibang Motor about competitors however Kaibang Motor did not tell them.

Yeda provides 30-40% of products to Kaibang Motor. Kaibang Motor is second biggest customer to them. Yeda thinks the power is not balanced. Also risk and responsibilities are not shared. Yeda takes all the requirements from Kaibang but in contrast Yeda's requirements are not taken by Kaibang. For example, Yeda wants to get money after they deliver goods or in a month in order to keep good flow of money. However, Kaibang resisted paying them once in several months. Because there is no frequent communication between them, Yeda does not learn a lot from the relationship. They learned about how important to make a deal with customer and protect their own rights. But in terms of quality, process improvement it all depends on themselves and none of customers really care about them. Yeda experiences high pressure on prices from Kaibang Motor.

### **5.3 Supplier two – Gongtai**

Gongtai was established in 2004. They are specialized in producing motor's end closer. Although the company has a short history, the owner was designing motor's end closer

production line for over 20 years and expert in this area and therefore the company have leading technology and know-how in current market. There are total 150 employees and 130 machines. They currently have three main customers.

### **5.3.1 The supplier's expectations and demands on collaboration**

Because Kaibang Motor is relatively big company and belong to Gree, Gongtai had high expectations on Kaibang Motor in the formation phase of the relationship. Gongtai is quite satisfied with the current collaboration with Kaibang Motor. In order to achieve more efficiency and profit, Gongtai wants Kaibang Motor to standardize products. If there are too many varieties but small amount, the company is losing lots of time and costs during the production process.

### **5.3.2 The supplier's view of the collaboration and their contribution**

Gongtai and Kaibang Motor started first relationship in 2006 and later in 2008 they have signed a long-term collaboration agreement, the specific contents can be renewed every year. Although Kaibang Motor said that their relationship will be valid at least 5 more years, they didn't make it as a document or make a contract, Gongtai thinks it is not reliable. After they signed the agreements, Gongtai provides 90% of their products to Kaibang Motor and because the production scale is limited, they had to reduce the number of customers from originally seven to three.

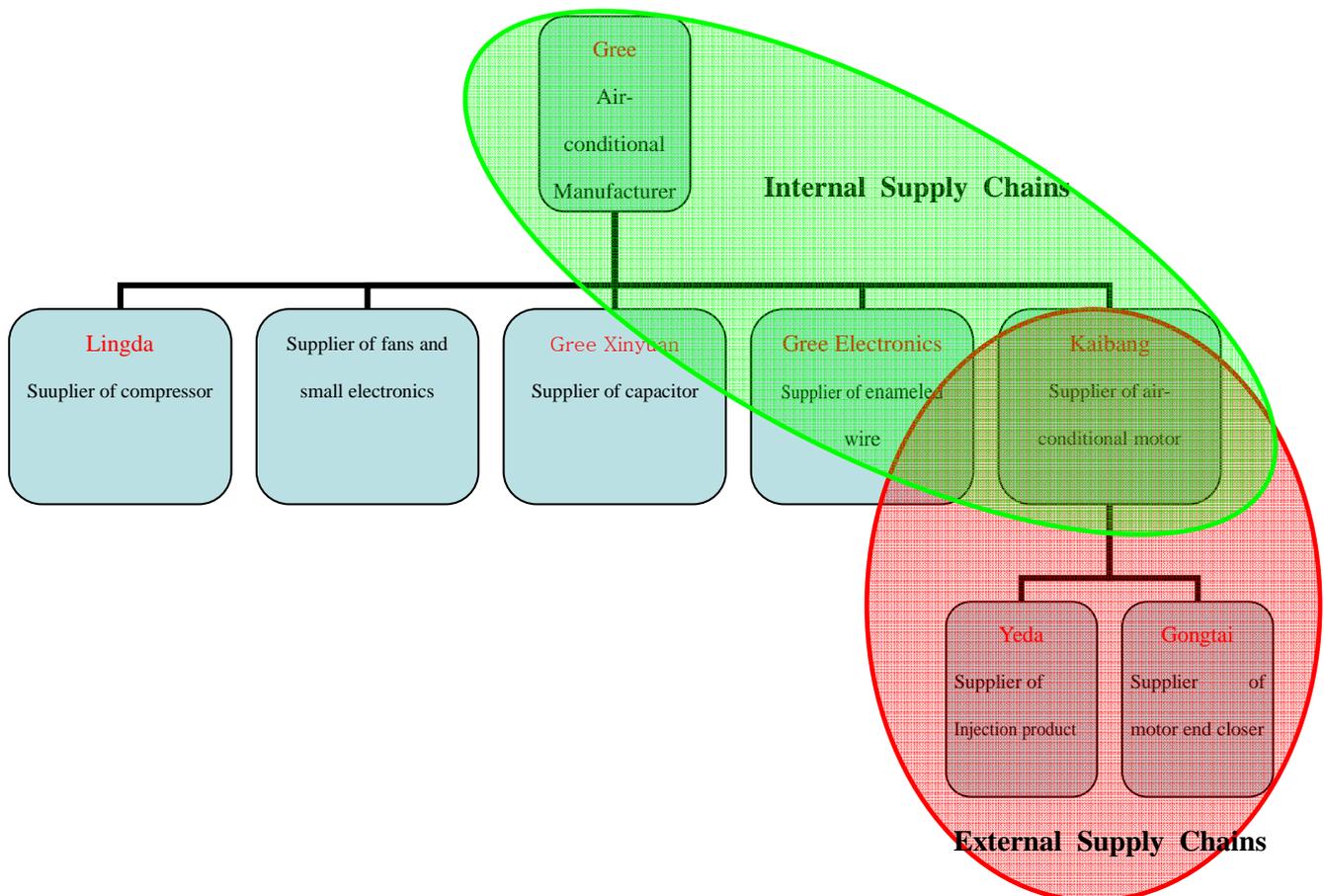
Gongtai knows that because they have leading technology and good reputation in the market, Kaibang Motor is trying to monopoly their supply and Gongtai thinks that Kaibang Motor is depended on them. However, Gongtai is not totally open to Kaibang Motor especially regarding technological issues. For example, there are discussions and product developments going on between them, but Gongtai avoid let Kaibang Motor's technicians having private communication with their technicians. Gongtai thinks that there is always a risk that the collaborative relationship can be fall apart and thus have to prepare for that.

Although Gongtai is very satisfied the relationship with Kaibang Motor and they get financial support, economic benefits from this collaboration, it still seems like Gongtai doesn't have deep trust on Kaibang Motor. Gongtai said that if Kaibang Motor join their company by buying stock or something, then they will be at the same perspective and share all the risk and benefits together, in this case they will have 100% trust. Otherwise, they said that it is almost impossible to have absolute trust each other and there are many difficulties on sharing information and develop new products together

Gongtai have learned many managerial skills from Kaibang Motor, for example how to motivate employees, how to arrange flow of human resources etc. Gongtai thinks that although their relationship is comparatively equal, regarding prices and decision making, Kaibang Motor still have more power.

## 6 Analysis

In this part, buyer and supplier relationship will be further analyzed and evaluated based on literature reviews and multiple-case studies. Buyer-supplier relationship will be divided into two groups to focus the analysis- Internal supply chains and External supply chains. Internal supply chain is constituted of the relationship between Gree and its two subsidiary suppliers. External supply chain consists of the relationship between Kaibang Motor and its two outsourced external suppliers. The analysis part will be divided to four parts. Firstly, According to Lamming(1993), identify different buyer-supplier relationship types of Internal supply chain and External supply chain.



Secondly, present analysis on does the motivation and expectation on relationship in buyer and

supplier match. In order to answer this, firstly apply Kraljic's matrix to Case study to analyze how buyer make classification of the items purchased and how they deal with the suppliers. Also we need to know how suppliers deal with buyers. Next we need to know differences between buyer and suppliers. Then we combine these three results and see whether or not the motivation and expectation on relationship in-between buyer and supplier match.

Moreover, in earlier literature study in section 3-5, I categorized important factors for successful buyer and supplier relationship. I here apply these factors to actual case study and analyze how success factors are implemented differently in Internal supply chain and External supply chain. Also, from combine early study and analysis find out whether the identified factors also depend on which Karaljic box they are. Next, I apply industrial cluster studies to the case study as an additional success factor that falls outside of above mentioned theory. Refer to section 3.2 in the literature study where I overviewed industrial clusters phenomenon in China. Lastly, discuss whether the suggested factors from western firms also are valid in the Chinese firms.

Last, by using portfolio theory from section 3-6, analyze how supplier-attractiveness and strength of relationship are connected to each other in-between case study of Internal supply chains and External supply chains. Then based on this, illustrate matrix. Supplier-attractiveness here means how important this supplier from customer's perspective and it is built on factors adapted from Ellam (1990). The measurement of strength of relationship is adapted from Ford D (1984, 1986)

### **6.1 Identify the relationship type of internal supply chains and External supply chains from case study**

Throughout multiple-case studies, it has found out that the relationship between internal supply chain (Gree and its two subsidiary suppliers) and external supply chains (Kaibang and its two external suppliers) can be categorized into different relationship types. Framework from Lamming (1993) is here used.

#### **• Internal supply chains from case study– Collaborative partnership**

Gree and its two subsidiary suppliers' relationship is internal supply chain relation with joint-ownership. In supply market, the nature of competition of this relationship is collaborative. They are more technology based rather than price based. The sourcing decision is based on long-term strategic perspective. Information transfer and its management are interlinked. Buyer and supplier in these relationships are involved in capacity planning and share goals. The delivery is flexible and practical. They prefer win-win situation on price setting. The suppliers

in this relationship have participated early in R&D process indirectly. Internal supply chain shares high pressure together in order to make continuous improvement and cost efficiency. Therefore the buyer and supplier relationship of this relationship can be identified as collaborative partnership.

● **External supply chains from case study– close to adversarial competitive**

Kaibanag and its two subsidiary supplier's relationship is external supplier chain relationship with no joint-ownership. Although two suppliers (Gongtai and Yeda) are in a slightly different situation, the general relationships of these relationships are close to adversarial competitive. In supply market, the nature of competition of this kind of relationship is competitive. They are more price-based rather than technology based. The sourcing decision is based on competitive bidding and quality. Information transfer and its management are directed only in one way and not very interlinked. Capacity planning is independent instead of integrated. The delivery is quite flexible but erratic. The customer in this relationship type has better negotiation position and it usually lead to unfair price-setting, such as win (buyer)-lose (supplier). Supplier is rarely participated early in buyer's R&D process. Most of time suppliers make specification from buyer's designs. If buyer is not satisfied with relationship, they can find other suppliers and thus this relationship has low pressures.

All in all, the buyer and supplier relationship of this relationship is close to adversarial competitive rather than collaborative partnership.

**6.2 Does the motivation and expectation on relationship in buyer and supplier match?**

Purchase strategies strengthen company's core-competences by takeover, merges and building collaborative relationship with suppliers. Most of time buyers take dominant position in the formation phase of relationship while suppliers take passive position and sometimes it could cause that buyer and supplier doesn't match on their motivation and expectation that worsen further relationship development. For both buyer and supplier, it is important to know how to build and utilize different types of collaboration relationship and decision-maker from buyer and supplier should reach agreement on how to deal with certain term of relationship, such as demands, expectation, contributions and general views etc.

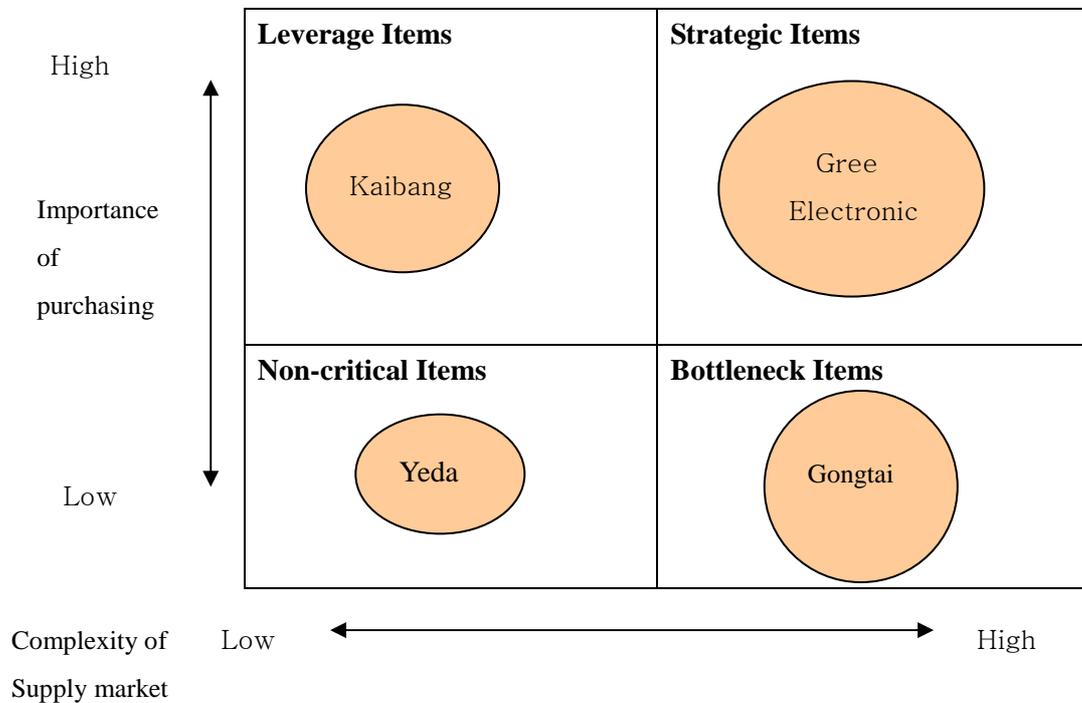
Based on this thought, I will analyze whether or not the motivation and expectation on relationship match between buyer and supplier from case study. In order to answer this we first need to know how buyers deal with suppliers. Also we need to know how suppliers deal with buyers. Next we need to know differences between buyer and suppliers. Then we combine

these three results and see whether or not the motivation and expectation on relationship in-between buyer and supplier match.

**(1) How buyers deal with the suppliers?**

Kraljic’s matrix is widely used on when buyer make classification of the items purchased. This tool is also influential on decision- making regarding how to deal with the supplier. It seems like the complexity of product, technological advance, monopoly conditions of supplier are critical factors when buyers in the case study (Gree and Kaibang Motor) make a purchasing decision. Apply Kraljic’s matrix to case study, it can be illustrated in Figure 6.1:

Figure 6.1 Case study suppliers on Kraljic’s matrix



From interview conducted with customers, I have classified their suppliers in the matrix. From above, we can see that Gree’s suppliers fall into two parts: Gree Electronic’s enameled wire as a strategic item, Kaibang Motor’s air-conditioner motor as a leverage item. According to Kraljic theory, generally strategic items contain scarce and/or high value materials while leverage items contain mix of commodities and specified material. On the decision of how to deal with supplier, Gree choose to have ownership governed relationship with strategic suppliers. In other words, Gree builds collaboration relationship with strategic suppliers by takeovers. According to Caniels and Gelderman(2003), supplier have dominant power on strategic and

bottleneck quadrants. From this perspective, under the Chinese market circumstances (with shortage of qualified suppliers), building collaboration relationship with Gree Electronic by takeover is a good strategy. By this Gree can not only ensure supply, but also have good control over a strategic supplier.

Gree have also taken over Kaibang Motor. In terms of leverage item (Electronic motor), the power is not dominant by supplier, instead buyer-supplier have a balanced relationship, it is not necessary to takeover Kaibang Motor. However Gree had its own R&D department on air-conditioner motors and by absorbing Kaibang Motor, they can strengthen their core-competence. The decision was made from strategic importance purpose (to strengthen core-competence) rather than for other reasons.

According to same dimensions, Kaibang Motor's suppliers fall into two parts: Gongtai's motor end closer as bottleneck items and Yeda as non-critical items. Bottleneck items are mainly specified materials while non-critical items contain commodities and some specified materials. Although Gongtai's motor end closer involve low complexity of products, Gongtai has high technical advance and potential monopoly condition, thus Gongtai has become important supplier for Kaibang Motor. However Kaibang Motor and Gongtai's relationship is close to adversarial competitive now. Actually, it is more proper for Kaibang Motor to have a collaborative relationship with Gongtai in order to ensure stable supply and improve competence. Kaibang Motor chooses adversarial competitive relationship with Yeda and it is proper decision for Kaibang Motor. Yeda have low complexity of supply market and low importance of purchasing, therefore there are many substitute suppliers in the market and Kaibang Motor will not lose a lot by consequences of failed with Yeda.

All in All, Gree and Kaibang Motor' suppliers fall into different quadrants in the kraljic matrix and so it requires different relationships. Here I want to present two important observations. First, in nature, Kaibang's relationship to Gongtai and Yeda is quite similar and can both be classified as adversarial competitive, but we can still see a matter of degree on the depth of the relationship. While Gongtai has a level of strategic importance to Kaibang, the relationship to Yeda is not very strong at all. This can be explained by the higher complexity of markets that applies to Gongtai. Second, the relationship that Gree has developed to Gree Electronics and Kaibang Motors is very similar. You might expect the relationship to Gree Electronics to be deeper and even more collaborative due to the higher market complexity, but because of the joint ownership due to the need of Kaibang Motor's technological competence, I find that the relationship to this supplier is equally strong.

## **(2) Supplier views on how to deal with buyers**

Unlike buyer's purchasing strategy, there are relatively fewer frameworks that can be applied on the issue of how to select customers based on a relationship point of view. Generally buyers have power over supplier, therefore suppliers has a hard time to avoid taking a passive position on the decision of relationship type while buyers take an active position. However, based on case description, it can found that suppliers generally consider some factors common such as customer's potential market strength, price setting and learning opportunity in the relationship.

In general, the priced-based supplier which contains non-critical items in the case study (Yeda) preferred to have a broader customer scope strategy although it increases complexity of production process by adopting different standards of customers. The reason can be describe in three points:

- (1) It brings superior learning opportunities to suppliers through variety buyers' interaction,
- (2) The power between buyer and supplier can be more balanced along with low dependency on particular customer.
- (3) Low risks of consequence of failure in relationships

The suppliers which have strategically importance or potential monopoly condition (Gongtai, Gree Electronic, Kaibang Motor) in the case study preferred to have a limited number of big customers (average three) rather than a broader customer base. The reason can be describe in three points:

- (1) Reduce transaction and entertainment cost during interaction with customers
- (2) Even if one relationship brake, suppliers have two more substitute important customers, suppliers are not totally depending on one particular customer no matter on how big portion of revenue is created from that buyer, the power can be more balanced between buyer and supplier. Also it is more likely supplier can have a good positioning on price setting.
- (3) Increase productivity and better control on quality by achieving lean production

Moreover, if supplier have only one monopoly buyer, the supplier will have high dependency to buyer, lack of substitute and power imbalance. Therefore none of the suppliers preferred to have only one customer.

In general, suppliers in the case study expect to have a long-term relationship with customers, gain variety support from buyers (such as financial support, technological support etc) and establish win-win mentality.

### (3) Analysis differences between buyer and suppliers

I have observed that there are some gaps between buyer and supplier regarding relationship issues. However, because perspectives on relationship are hard to measure, during the interview I ask all interviewees to give a score from one to ten regarding success factors (further detailed and discussed in chapter 6.3). Here these numbers are presented in table 6-1. I have highlighted in red where the difference on supplier and customer view is big. As can be seen in the table, the differences in view are greater where the relationship is classified as External supply chain relationship, whereas for Internal supply chain relationships, differences are small.

< Table 6-1 Differences between buyer and suppliers perspective >

	Internal Supply Chain relationship				External Supply Chain relationship			
	Gree to Kaibang	Kaibang to Gree	Gree to Gree Electornic	Gree Electornic to Gree	Kaibang to Yeda	Yeda to Kaibang	Kaibang to Gongtai	Gongtai to Kaibang
Realistic vision	8	7	7	8	6	3	6	4
Long term	10	9	10	9	3	4	6	5
Satisfactory performance	8	7	9	7	7	6	6	7
Information exchange	7	10	8	9	1	6	5	7
Practices	8	7	9	8	2	3	3	4
Interaction (communication)	9	8	10	9	7	3	3	6
Responsibility	9	8	8	7	7	10	8	7
Openness	7	10	8	10	1	6	5	3
Trust	10	9	10	10	2	3	5	4
Flexibility	8	10	8	10	3	6	7	9

Realistic vision, Long-term perspective, Satisfactory performance is categorized into Business factors in earlier presented framework. It seems like generally there are fewer gaps between buyer and supplier regarding Business factors in case study. Both buyer and supplier thinks that the relationship is based on long-term based from internal supply chain relationship while both buyer and supplier thinks that the relationship is based on short-term perspective from external supply chain relationship. Although there is small gaps on degree, but all buyer and supplier are

satisfied with current relationship. However when it comes to realistic vision, the buyer and supplier in internal supply chain relationship have met each other's expectation, there are some gaps between buyer and suppliers in external supply chain relationship. On one hand, Both suppliers (Yeda, Gongtai) expressed that most of time they are good at taking buyer's (Kaibang Motor) expectation and demands, but buyer (Kaibang Motor) relatively doesn't respond so well. Therefore they gave low score on it. On the other hand, buyer (Kaibang Motor) thinks that they think it is close to based on realistic vision. Because they absorb supplier's expectation and demands according to types of relationship. For instance, Yeda is non-critical supplier to Kaibang Motor and therefore they find low motivation and needs to absorb large degree of expectation and demands from Yeda.

Information exchange, Practices, Interaction is categorized into Structure factors in presented framework. And Responsibility, Openness, Trust, Flexibility is categorized into Relationship factors in early framework. There are relatively higher gaps between buyer and supplier regarding Structure factors and Relationship factors. Also, these are interconnected to each other. Firstly, there are almost no gaps on practices. Both buyer and supplier in internal supply chain relationship think that they have concrete structures, process and techniques while both buyer and supplier in external supply chain relationship think that they don't have. Also, there is less gaps on responsibility issues. Both buyer and supplier think they are take good care of it.

Gaps are considerable regarding information exchange issue. Almost all suppliers think that when they have shared high degree of information, buyers haven't shared with them. This is connected to Openness as well. Suppliers in case study have high degree of openness to buyers according to buyer's requirement however buyers are not as open as them. In terms of communication, the buyer and supplier in internal supply relationship think there are no gaps on communication issue while there are gaps in external supply relationship. For instance, Yeda want to have more frequent communications cover different level of department while Kaibang doesn't. Also Kaibang wants to have direct conversation between technicians with Gongtai, while Gongtai is not willing to do this. On the Flexible issue, suppliers in case companies respond good in changes and new needs while buyers are not as flexible with supplier's demands and opinions.

Trust is built on wiliness, time of interact etc of both buyer and supplier side. It is not likely that one side has high trust while the other side does not. And so, we can here see that both buyer and supplier in internal relationship think that they have high trust while both buyer and supplier in external relationship think that they don't have.

All in all, from the analysis of case companies, it can be found that the external supply chain has higher gaps between buyer and supplier rather than internal supply chain relationship in all the issues. These differences are a cause from degree of matching in expectation and reality and degree of communication. In other words, buyer and supplier in internal supply chain relationship have better meet each other's expectation and reality while both buyer and supplier in external supply chain relationship are not good at taking the other parts situation into consideration. Moreover, both buyer and supplier in internal relationship are good at communication and are aware of different opinions and discusses problems properly while both buyer and supplier in external relationship are not good at it.

Besides, regarding information exchange, openness and flexibility, suppliers usually have a higher need to reduce gaps in order to make stronger relationships. Trust is built on buyers and suppliers from both sides. The views here are very similar in-between suppliers and buyers

Also it should be noted that above survey does not cover any importance rating of the different success factors. Further research should be performed to see how suppliers and buyers rate how important they thing the different factors are for a successful relationship to see if views here differ or are the same.

Refer to chapter 7 for summary conclusions.

### **6.3 Analysis on how success factors are implemented in the case study**

In this chapter I apply success factor theory presented previously to our case study to investigate which are the key points to successful supplier-buyer relationships. Refer to section 3.5 of earlier literature study where I categorized important factors for successful buyer and supplier relationship from previous western research which are categorized into business factors, structure factors and relationship factors. I here apply these factors to actual case study and analyze how success factors are implemented differently in Internal supply chain and External supply chain China.

I here also apply industrial cluster studies to the case study as an additional success factor that falls outside of above mentioned theory. Refer to section 3.2 in the literature study where I overviewed industrial clusters phenomenon in China.

### **6.3.1 Internal supply chains: the buyer-supplier relationship between Gree and its two subsidiary suppliers ( Kaibang Motor, Gree Electronic)**

#### **• Business Factors**

##### **(1) Expectations vs Reality – realistic vision of the relationship**

Gree and its two subsidiary suppliers have written their expectations down during takeover negotiations and discuss details regularly afterwards and thus Kaibang Motor and Gree Electronic are aware of buyer's requirements and expectations. To make expectations become reality, Gree and its two subsidiary suppliers are sharing same business goal and structures. Gree as a buyer mostly expects good collaboration outcomes from suppliers, such as improved quality, more cost efficient product, guaranteed production volume, flexibility etc. the customer serves economical, technical support to some extent to improve suppliers situation, instead of harsh demand about outcomes without any help and support in doing that.

Gree established a platform for its five strategic suppliers. It enables the collaborative support among five suppliers and brings more benefits to all of them.

In general, if there are big gaps between expectations and outcomes, this relationship is easy to collapse. From this sense, their relationship managed relatively great. However, in order to fulfill Gree's requirement, suppliers suggested some requirements. For example, suppliers want to be more involved in Gree's ongoing product development; also information sharing and IT system should be modified in more organized and structured way.

All in all, Internal supply chain has succeeded in building realistic vision in-between each other and gets benefits from it.

##### **(2) Long term perspective vs Short term perspective**

To build a collaborative relationship, time limit is relatively important. If the relationship has short term perspective, the buyer and suppliers think not necessary to be open and share important information each other. Also it is hard to build collaborative product development, technology improvement etc.

Gree considers long-term perspective as a foundation stone for a good collaborative relationship. Thus Gree made decision to takeover Kaibang Motor and Gree Electornic permanently in order to establish supply development system. Therefore, their relationship is based on long-term perspective.

##### **(3) Satisfactory of performance**

Satisfactory of performance is outcome of collaboration through relationship. This can be analyzed in economical, technological and intellectual terms. Economically, Gree reduced unnecessary costs and increased profitability. Suppliers contributed to Gree on the technological development by commitments. Gree absorbs good knowledge and experience by communication with suppliers. Also, the two subsidiary suppliers (Kaibang Motor, Gree Electronic) gains advantages too. Although there are insufficient parts, generally they are satisfied with the performance.

- **Structure Factors**

- (1) Information Exchange**

When buyer and supplier are involved in business, information exchange has become an influential factor in order to take the right order and fulfill production requirements. They have quite clearly defined information channels. By utilize information exchange channel; both buyer and supplier get detailed information such as quantities, product requirement and delivery time. Although the information should be updated more often and some of defects need to be modified, it still improves efficiency of information sharing. In general, this information channels doesn't cover all personnel that need the necessary information, but many different level of personnel can get information by frequent communications. Gree and its two suppliers explained that their accuracy information exchange program prevented the faults and mistakes during process and eventually enhanced their performance efficiency.

- (2) Practices - Concrete structures, process and techniques**

Gree has concrete structure, process and techniques and two subsidiary suppliers are following Gree's system. Those two are involved in Gree's steering board and they participate in steering meetings in monthly. Most of time suppliers have less power to influence on the decisions making compare to buyer. Especially the challenge lies on how each of suppliers copes with each other when they have differences in situation.

- (3) Interaction (communication)**

Close and frequent contact between buyer and suppliers brings good collaboration. As geographically, Gree and its two subsidiary suppliers are located close, they have chance to have day to day communication by phone call or face to face. They have regular meeting once in every week. Each meeting they give commitments on operation, marketing, service performance and discuss the better solution of occurring problems.

- **Relationship Factors**

### **(1) Sense of responsibility**

All of them feel that it is their responsibility to make relationship succeed and they keep putting on effort to carry engagement out in a better way. Moreover they have divided responsibility quite clearly.

### **(2) Openness**

When buyer and suppliers treat each other in openness attitude, it can bring practical benefits to them. Gree and its two subsidiary suppliers openly discuss many difficult issues. However, when in need to be make decision or take action through setting plans and vision, buyer Gree doesn't take in other supplier's opinion really. Also when conflicts arise, customer resolves it from their perspective rather than consider suppliers' viewpoint. Sometimes two subsidiary suppliers realized that Gree is not as open as them in some ways. But all in all, the degree of openness is high among them, also Gree and two subsidiary suppliers are even open at the lower levels of organization.

### **(3) Trust**

Trust is one of the most important factors for successful buyer-suppliers relationship. However Trust is hard to measure. As internal suppliers and internal buyer, they express absolute trust on each other and their dependency on each other is also high.

### **(4) Flexibility**

Gree and two subsidiary suppliers are taking flexible actions during product process. Two suppliers' flexibility is on moderate level. They are more adhered to the spirit and goal rather than the letter of the agreements. When suppliers adapt to customer's flexible needs or changes, their own process can easily mess up, also it causes some difficulties for them. However, two suppliers usually try to response properly on a need for flexibility.

## **6.3.2 External supply chains: the buyer-supplier relationship between Kaibang Motor and its two external suppliers (Yeda, Gongtai).**

### **• Business Factors**

#### **(1) Expectations vs Reality – realistic vision of the relationship**

From suppliers' perspective, Kaibang Motor has potential market strength and thus two suppliers had high expectation on tied up with Kaibang Motor. For instance, two suppliers were expected to gain increasing revenue and technological improvement by building relationship with Kaibang Motor. From customer's perspective, Kaibang Motor expected great quality,

loyalty and secure of supplement.

Kaibang Motor and its two external suppliers have negotiated requirements in the formation phase of relationship. However, they are in lack of frequent communication regularly afterwards, as a consequence the gaps between expectations and reality are gradually increasing. For example, Kaibang Motor has harsh requirements regarding quality issue on Yeda rather than helping or support them in gain further improvement. Yeda's expectations are not usually achieved or taken by Kaibang Motor. On the other hand, Kaibang Motor take more actions to fulfill Gongtai's expectations, the gaps are significantly smaller than the relationship with Gongtai. All in all, the gaps between expectation and reality are pretty high.

### **(2) Long term perspective vs Short term perspective**

Kaibang Motor generally considers a long term perspective is important to build good collaborative relationship. However in the dynamic business environment, it is hard to guarantee long-term partnership with external suppliers. Although customer and suppliers intended to build a long term perspective, if suppliers often can't meet the requirements and standard, naturally the relationship will brake up. Kaibang Motor and two suppliers relationship is mostly based on economic benefits, it creates some risks for Kaibang Motor to sign a long term contract with suppliers. According to evidence provided from Gongtai, , Kaibang Motor usually give some guarantees on words if it is necessary strategically, but they renew the contract in each year or certain time period after evaluate outcomes of performance. On the contrary to this, Kaibang Motor has shortened contracts with less important suppliers such as Yeda. All in all, Kaibang Motor and its two external suppliers are close to adversarial competitive, yet build a long-term perspective.

### **(3) Satisfactory of performance**

Kaibang Motor and its two suppliers gained economic benefits on some degree through this relationship and they are quite satisfied with performance economically. However other outcomes are not as evident as their expectation. Due to lack of openness, trust and communication, the technological exchange and knowledge creation is not smooth among organizations. Kaibang and two suppliers showed unsatisfactory on this situation.

#### **• Structure Factors**

##### **(1) Information exchange**

In cope with Gree vision, Kaibang Motor also implemented similar information channels to Kaibang Motor's suppliers. Throughout log-in supplier's own account on the internet, suppliers

easily find out their responsibilities and details of orders in daily. In order to prevent the limitation of information channel and react on flexible situation, only the personnel who are involved need to get all the necessary information by frequent communication. However, the absence of frequent communication in all the level has been badly influenced on information exchange. Also due to security risk, Kaibang Motor and its two suppliers are not willing to share important or critical information.

## **(2) Practices- concrete structures, process and techniques**

Kaibang Motor and its two suppliers have separated and independent structures and processes. It is hard to find interconnected part from concrete structures. Due to no shared goals or vision, it is hard to work in harmony during the cooperation and it has become hinder for development closer relationship and conducting new product development programs. Kaibang Motor invited Gongtai and Yeda to evolution meetings once in every year, but this is too rare according to the suppliers.

## **(3) Interaction (communication)**

There is absence of frequent and direct communication between Kaibang Motor and its two suppliers. The communications are limited on manager level. Especially technicians need to have direct communication in order to resolve problems and improve quality; however it is tacitly forbidden to have direct communication among technicians, usually purchaser or manager delivers information to them. Therefore Kaibang Motor and its two external suppliers are bad at communication.

### **• Relationship Factors**

#### **(1) Sense of responsibility**

From the case study, it is easy to find that all of parties feel that they are dealing well with responsibility. However suppliers pointed out that frequent replacement of purchaser on customer side can increase evasion responsibility situation. It is understandable that customers take this action in order to prevent corruption of purchasers, but when a problem or conflicts arise after replacement, the purchaser is usually blamed for pre-purchaser and evades responsibility. Then in many cases suppliers take all the blame.

#### **(2) Openness**

Kaibang Motor and its two suppliers are not particularly open to each other. They don't bring out difficult issues on discussions if it is possible. Kaibang Motor and its two supplier's management policies are not encouraging the communication at the lower levels of organization. Conflict resolving techniques are bad. Kaibang Motor and its two suppliers are not open to other

company's vision or plans.

### **(3) Trust**

Trust and dependency is somehow connected. When the dependency is high, the buyer and supplier is more likely willing to have more trust relationship. However, compare the trust scores and dependency scores among Kaibang Motor and their two suppliers, we can see that good trust is not always results from high-dependency. They are dependent on each other, but they have not built good trust on each other. In this situation the relationship is hard to develop to a higher-level of collaboration (engage in new products, processes, accelerate innovation etc).

### **(4) Flexibility**

A buyer (Kaibang Motor) is not flexible with supplier's demands and expectation. However, both suppliers (Gongtai, Yeda) take flexible reaction with customer's sudden changes and requirements.

### **6.3.3 Industrial cluster creation as a success factor for supply chain relationship in China**

In China, industrial clusters are well-developed and it boosts on the linkages and interdependence in-between actors in the network of production when producing products, services and creating innovations. This has given China a benefit on both costs and lead-times driving the rapid economic and industrial development in China in recent years. Many of supply chain relationships in China has adopted industrial cluster and it can be consider as critical success factor for good supply chain relationship in China.

Both Gree and Kaibang Motor have emphasized the importance of industrial cluster creation when making selection of suppliers. For example, Gree arranged its strategic subsidiary supplier in the same region and Kaibang Motor also located their suppliers in the close distance as much as possible. Moreover, When Kaibang Motor is planning to open new production factory in another place, they even suggested to their supplier such as Gongtai to open new factory near by Kaibang.

From Gree and Kaibang Motor case, we can find the reason why they put high effort on the creation of industrial cluster with suppliers. By creating vertical linkage between supplier and buyer, for instance Kaibang Motor and its two external suppliers, it helped Kaibang Motor get benefits from low transportation, low transaction fee and increased overall performance. By creating horizontal linkage, for instance the case of Internal supply chain, two internal suppliers (Kaibang Motor and Gree Electronic) able to collaborate frequently due to geographical reason, they maximized collaborate performance in the value chain and it enables customer to have better infrastructure and accelerate innovation. Well-developed cluster allow buyer to sourcing

locally instead of from distant supplier, buyer is able to get down transaction costs, minimize the need for inventory and reduces delays in some extent. Therefore Gree and Kaibang Motor encourage industrial cluster creation and it is one of the success factors for building good supply chain relationship in China.

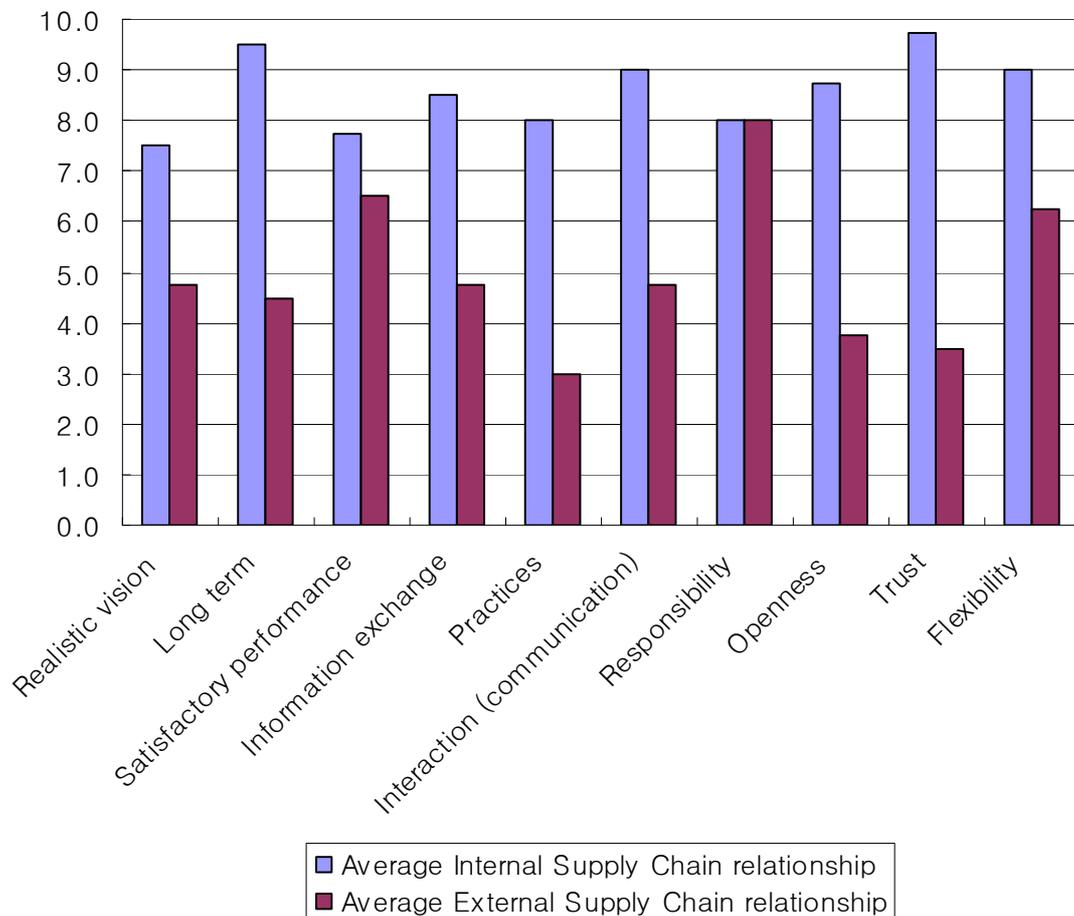
#### 6.3.4 Survey results

I conducted a survey during the interview where I asked managers to give a score from one to ten (ten is highest). Here these numbers are presented as following table and the comparison results between internal supply chain and external supply chain are illustrated as a following graph. Each success factor score is an average from buyer and supplier.

	Internal Supply Chain relationship					External Supply Chain relationship				
	Gree to Kaibang	Kaibang to Gree	Gree to Gree Electornic	Gree Electornic to Gree	Average Internal Supply Chain relationship	Kaibang to Yeda	Yeda to Kaibang	Kaibang to Gongtai	Gongtai to Kaibang	Average External Supply Chain relationship
Realistic vision	8	7	7	8	7.5	6	3	6	4	4.8
Long term	10	9	10	9	9.5	3	4	6	5	4.5
Satisfactory performance	8	7	9	7	7.8	7	6	6	7	6.5
Information exchange	7	10	8	9	8.5	1	6	5	7	4.8
Practices	8	7	9	8	8.0	2	3	3	4	3.0
Interaction (communication)	9	8	10	9	9.0	7	3	3	6	4.8
Responsibility	9	8	8	7	8.0	7	10	8	7	8.0
Openness	7	10	8	10	8.8	1	6	5	3	3.8
Trust	10	9	10	10	9.8	2	3	5	4	3.5
Flexibility	8	10	8	10	9.0	3	6	7	9	6.3
Avg Total	8.4	8.5	8.7	8.7	8.6	3.9	5.0	5.4	5.6	5.0

< Table 6-2 Success factor scores for Internal Supply Chains and External Supply Chains >

<Graph 6.3 Internal supply chain and External supply chains average scores compared>



Except of Satisfactory performance and Responsibility, the difference in score between Internal supply chain and External supply chain is very evident. Internal supply chain, which indicate ownership-governed relationships between Gree and its two internal suppliers have realistic vision, long-term perspective, good control, good information exchange, satisfactory performance, clear responsibility and flexibility compared to External supply chain. There is huge gap between Internal supply chain and External supply chain particularly regarding trust, interaction, practices, information exchange, openness issue.

As concluded in chapter 6.2, all relationships in this case study have different characteristics and motivations. Hence, we do not expect the same results for all relationships (e.g that fall into different boxes in the Kraljic matrix). This is also what the results in this survey shows. The upper right part of the Kraljic matrix (where the Internal supply chain companies fall into) shows the higher scores in the survey while the bottom left part of the Kraljic matrix (where the

External supply chain companies fall into) shows significantly lower scores.

From the survey result, internal supply chains achieved good collaborative relationship compare to external supply chains and the main reason is that they provided good platform for trust, openness and communications through joint-ownerships. As concluded in chapter 6.2, all relationships in this case study have different characteristics and motivations. Hence, we do not expect the same results for all relationships (e.g that fall into different boxes in the Kraljic matrix). This is also what the results in this survey shows. The upper right part of the Kraljic matrix (where the Internal supply chain companies fall into) shows the higher scores (stronger relationship) in the survey while the bottom left part of the Kraljic matrix (where the External supply chain companies fall into) shows significantly lower scores.

#### **6.4 Examine strength of the relationships**

In this part, how supplier-attractiveness and strength of relationship is interconnected to each other in-between case study of Internal supply chain and External supply chain will be analyzed. Supplier-attractiveness means that how important this supplier from customer's perspective is and it is built on factors adapted from Ellam (1990). This attractiveness can be measured with supplier scale and experiences, market position, technological capacity, performance outcomes, managerial and organizational capacity etc. The measurement of strength of relationship is adapted from Ford D (1984, 1986) and it can be measured with economic factors, character of the exchange relationship, cooperation between buyer and supplier and distance between the buyer and the supplier.

##### **6.4.1 Suppliers Attractiveness**

According to Ellam(1990) theory, Attractiveness of four different suppliers will be presented.

###### **• Kaibang Motor**

- (1) Supplier scale and experiences: big sized company (over four thousands employees in workforce), seven years manufacturing experiences in air-conditional business.
- (2) Market position: in leading market position. Kaibang Motor's sales incomes reached 0.83 billion RMB in 2009
- (3) Technological capacity: Because Kaibang Motor has gained different kinds of technology pedants, and their brushless DC motors is at the leading level, it has high technological capacity.
- (4) Performance outcomes: Kaibang Motor adopted international management standards and it ensures good performance outcomes.
- (5) Managerial and organizational capacity: Kaibang Motor has concrete structures, process,

and production techniques. They integrated international management standards in system, also have good organization culture. Therefore managerial and organizational capacity is high.

(6) Overall attractiveness: High

#### ● **Gree Electronic**

Gree Electronic has two customers in case study. One is Gree and the other one is Kaibang Motor. Thus some parts are divided into two different statuses. .

(1) Supplier scale and experiences: medium and big size (produce 15000 tons a year, around 300 employees), over 20 years in enameled wire business

(2) Market position: Gree have 80 different kinds of customers. High quality of product is recognized by market over 20 years. Therefore market position is high.

(3) Technological capacity: good technological capacity on their main products.

(4) Performance outcomes: 1. the production process is highly mechanized and Gree Electronic has good know-how on total quality management. Therefore it has good performance outcomes.

2. On the other hand, Gree Electronic just set up new production line for satisfy Kaibang Motor's need and the components that Kaibang Motor want are not main strength of Gree, still in initiate period. Therefore the performance outcomes of this component is unstable and worse than average.

(5) Managerial and organizational capacity: systematic structures, process and production techniques. Good organizational culture with quite well-organized management support. It is belong to medium level.

(6) Overall attractiveness: In between average and high level

#### ● **Yeda**

(1) Supplier scale and experiences: very small sized (total employees are six, 3 machines), four years manufacturing experiences in injection products business.

(2) Market position: Yeda is weak in the present market position

(3) Technological capacity: module technology is important in injection manufacturing process. However Yeda does not have module technology in house instead buying from other. Therefore Yeda's technological capacity is low

(4) Performance outcomes: performance outcomes are much depending on situation, not always stable. the performance outcomes belong to average level.

(5) Managerial and organizational capacity: There is no concrete management structure or organization system. it belong to low capacity.

(6) Overall attractiveness: low

- **Gongtai**

(1) Supplier scale and experiences: it is small and medium sized company (150 employees and 130 machines), six years manufacturing experiences in the motor end-closer market.

(2) Market position: leading position. there are not so many substitute suppliers which can provide as good as Gongtai regarding motor end closer,

(3) Technological capacity: low product complexity but good technology know-how. The technological capacity is higher than average level.

(4) Performance outcomes: the owner was designing motor's end closer production line for over 20 years and expertise in this area. Gongtai have good knowledge on production. The performance outcomes are good.

(5) Managerial and organizational capacity: the firm is structured, but the managerial system still need to be modified. Not yet established organizational culture.

(6) Overall attractiveness: High

- **Conclusion of four supplier's attractiveness**

Throughout analysis results, the attractiveness of four suppliers can be defined like this : Kaibang Motor – High level, Gree Electronic– in between average and high level, Yeda – low level, Gongtai – High level.

#### **6.4.2 Strength of relationship**

The measurement of strength of relationship is adapted from Ford D (1984, 1986) and it can be measured with economic factors, character of the exchange relationship, cooperation between buyer and supplier and distance between the buyer and the supplier. The analysis is divided to Internal supply chain (Gree and its two subsidiary suppliers) and External supply chain (Kaibang Motor and its two external suppliers)

- **Internal supply chains - Gree and its two subsidiary suppliers (Kaibang Motor, Gree Electronic)**

- **Economic Factors**

- (1) **Volume or dollar value of purchase**

Kaibang produce average 2000000 number of air conditioner motors in every month and provide 95% to Gree. From Gree's perspective, Gree purchases 1900000 number of air conditioner motors from Kaibang and it takes 70% shares from total amount.

Gree Electronic product average 1500 tons of emerald wire in every month and provide 60% to Gree. From Gree's perspective, Gree purchases 600 tons of emerald wire from Gree Electronic and it takes 70% shares from total amount.

## **(2) Importance of the buyer to the supplier**

Because Gree purchases big amount of both Kaibang and Gree's product, Gree is considerably important to business of supplier from supplier's perspective.

### **• Character of the exchange relationship**

#### **(1) Types of exchange**

Gree and its two subsidiary suppliers do different types of exchange. They do product/service exchange, social exchange, knowledge exchange and financial exchange.

#### **(2) Level and number of personal contacts**

In general, the communication and contacts of Gree and its two subsidiary suppliers take place in all the different level of organization. It does not involve all of personal, but cover more than 50% of personal.

#### **(3) Number of other partners**

Gree is the only partner for Kaibang and biggest partner for Gree Electronic. When buyer-supplier conducts less number of partners, it means that they have high dependency, importance, uniqueness of interaction.

### **• Cooperation between buyer and supplier**

#### **(1) Cooperation in development**

There is no direct cooperation in development now. Gree and its two subsidiary suppliers share the experience, knowledge, information of components to support each other's development. There is high potential on cooperation in future development

#### **(2) Technical cooperation**

There is no direct technical development at the moment. The technical components has technical linkage that each party need to make cooperation in order to enhance quality and shorten research time period, Gree and two subsidiary suppliers are active on indirect technical cooperation.

#### **(3) Integration of management**

The management system is integrated. Gree and two subsidiary suppliers share some business strategy, goal and plans. Due to needs, sometimes Gree transfer its management personnel to two subsidiary suppliers.

### **• Distance between the buyer and the supplier**

**(1) Social distance:** Gree and two subsidiary suppliers are aware of each other's way of working both in individual level and organization level

**(2) Cultural distance:** all of them are from same region, there is no cultural distance and they

share same norms and values.

**(3) Technological distance:** product and process technologies differ from each other. However Gree and its two subsidiary suppliers are aware of each other process and products contains many common things, technological distance is rather small.

**(4) Time distance:** by eliminating geographic distance and good communication, they reduced the gaps between order placement and the actual transfer of the product or service involved.

**(5) Geographic distance:** There are no geographic distances among them. All of their manufacturing factories are located in same city. Two suppliers are located even in same factory site which is 5 minutes walk distance.

**● External Supply Chains: Kaibang Motor and its two external suppliers (Yeda, Gongtai).**

**● Economic Factors**

**(1) Volume or dollar value of purchases**

Yeda produce average hundreds of thousands products in every month. (Their injection products are light and small-sized) and Yeda provide 30-40% of products to Kaibang Motor. On the other hands, Kaibang Motor only purchases 15-20% share of total amount from Yeda.

Gongtai produce average 3600000 number of motor's end closer in every month and provide 90% of products to Kaibang Motor. On the other hand, Kaibang purchase 70% shares of total amount from Gongtai.

**(2) Importance of the buyer to the supplier**

In general, the volume or dollar value of purchase and dependency is a criterion for deciding importance of the buyer to the suppliers, but customer and supplier's number of partner and market position is also influential factor. For example, Yeda don't provide big amount of products to Kaibang Motor then Kaibang Motor should be consider as less important buyer to Yeda. However, due to Kaibang Motor's manufacturing size and market position, it still considered as an important buyer to Yeda. On the other hand, Yeda is unimportant for Kaibang Motor. Both of Kaibang Motor and Gongtai consider each other as important buyer and supplier..

**● Character of the exchange relationship**

**(1) Types of exchange**

Kaibang Motor and its two external suppliers' exchange relationships are limited. They are mostly focused on products exchange and little service exchange. Regarding the relationship between Gongtai and Kaibang Motor, there is small amount of financial and knowledge

exchanges.

**(2) Level and number of personal contacts**

The level of personal contacts is limited on manager and purchaser level. The personal contacts are also limited in same level.

**(3) Number of other partners**

Kaibang Motor has many injection suppliers while Yeda has 6 partners. Both Kaibang Motor and Gongtai have mainly three partners.

**• Cooperation between buyer and supplier**

**(1) Cooperation in development**

There is indirect cooperation in development between Gongtai and Kaibang Motor. Kaibang Motor and Yeda is simply purchaser-seller relationship, there is no any cooperation in development.

**(2) Technical cooperation**

There some comments and suggestions on resolving technical problems between Kaibang Motor and Gongtai, but there is no further technical cooperation. Yeda and Kaibang Motor have no technical cooperation either.

**(3) Integration of management**

They share some useful information exchange channel together, but management system is totally separated among Kaibang Motor and its two external suppliers.

**• Distance between the buyer and the supplier**

**(1) Social distance:** Because lack of frequent communication and openness, Kaibang Motor and its two external suppliers face lack of understanding on the way of working in both individual and organization level. The social distance do exist in some extend.

**(2) Cultural distance:** all of them are from same region, there is no cultural distance.

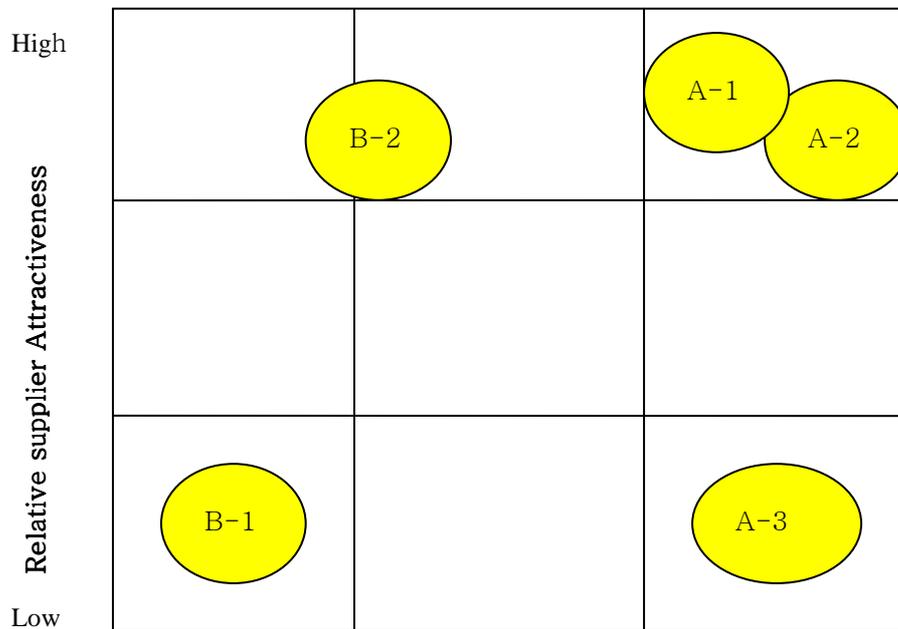
**(3) Technological distance:** all of them are pretty good at managing their own product technology. However in terms of process technology, Kaibang Motor manage much better than its two external suppliers (Yeda, Gongtai)

**(4) Time distance:** Time distance exists among them. It often happens that actual transfer of the product is more delayed than original order placement.

**(5) Geographic distance:** they are not located in same manufacturing site, however all of them are located in the closer cities in same province. It takes maximum 1-2 hours by car.

### 6.4.3 Conclusion

According to analysis of the supplier attractiveness and strength of relationship of Internal supply chain and External, the comparison results are illustrated as graph below:



#### Strength of relationships

**Internal Supply Chains:** A1-Gree and Kaibang Motor A2- Gree and Gree Electronic  
A-3 Kaibang Motor and Gree Electornic

**External Supply Chains:** B1-Kaibang Motor and Yeda B2- Kaibang Motor and Gongtai

All of buyer-supplier relationship in Internal supply chain is resulted in high strength of relationship. There have high dependency on each other and create good economic value by doing business. They are engaged in many different kinds of exchanges such as product/service, social, knowledge etc. there is no direct product or technology development in this Group while shares integrated management system. They conduct almost no cultural, social, time, geographical, technology distances in relationship.

However, External supply chain gained different results according to different suppliers. On one hand, Kaibang Motor and Yeda have week relationship. They have low dependency on each other and created insignificant economic values by doing business. They are mainly engaged in product exchanges and little service exchange. There is no direct/indirect product or technology development as well as integrated management system in this relationship. There are social, time, technology distances between them.

On the other hand, the strength of relationship between Kaibang Motor and Gongtai can be defined as lying in-between low and average. They have high dependency on each other and created good economic value by doing business. They are engaged in service, financial and knowledge exchanges in some extent besides product exchanges, but not significant. There is very little cooperation in development and some technology development. There are social, time, technology distances between them as well.

After apply two values on Matrix, the interesting results are founded – which are B2 (Kaibang Motor and Gongtai) and A3 (Kaibang Motor and Gree electronic). It is interesting to questioning why B2 is failed to build strong relationship while A3 has succeeded. In general, high supplier attractiveness can attract more buyers and these buyers are willing to build strong relationship with the supplier in order to maximize benefits. As a consequence, the supplier which has high attractiveness can easily build a strong relationship while the low attractiveness ones have hard to find proper buyers. From this sense, B2 – Kaibang Motor and Gongtai should have resulted in strong relationship while A3- Kaibang Motor and Gree Electronic have limited relationship. But the results are changed. In A3 relationship, because Gree Electronic set up new production line for Kaibang, the overall supplier attractiveness was not relevant to Kaibang Motor, but both of them belong to same mother-company, they have platform and structure of good communication, high trust, high information exchange and high openness. These factors enabled A3 become strong relationship

From B2 and A3, it can be found out that supplier attractiveness alone is not always enough for develop good collaborative relationship, it need to have platform such as structure, program, system that enhances trust, openness and communication between buyer and supplier.

## 7. Conclusion

**RQ1: What kind of buyer-supplier relationship types can be identified from the multi-case studies?**

Mainly two buyer-suppliers relationship types are identified – collaborative partnership and adversarial competitive. Gree and its two internal suppliers relationship is identified as collaborative partnership. Their characteristics are summarized as following- technology based, long-term strategic perspective, interact information transfer and management system, involved in capacity planning, flexible delivery, win-win mentality and high pressure. On the other hand, Kaibang and its two external supplier's relationship are identified as adversarial competitive. Their characteristics are summarized as following-price based, sourcing based on competitive bidding, one-way transfer of technology and management system, independent capacity planning, flexible but erratic delivery, win-lose mentality, no collaboration on earlier R&D and low pressure.

**RQ2: Does the motivation and expectation on relationship in buyer and supplier match?**

In my case study, buyer and supplier's motivation and expectation of relationship is not perfectly matching. This can be concluded in the following six points:

- (1) Buyers and supplier consider different factors in terms of selection of partners, therefore motivation can't be same. For instance, buyer in case company consider supply market complexity (product complicity, technology advance and monopoly condition) and strategic importance while suppliers in case study considers buyer's potential market strength, price setting and learning opportunity to be of most importance in the relationship.
- (2) Because buyer and suppliers categorize each relationship differently, you cannot expect them to have the same kind of motivation and expectation on each other, it is usually different along with relationship types and needs.
- (3) Buyers are the decision-maker in the relationships while supplier takes more passive position. Therefore supplier's motivation and expectation can be ignored by buyer easily.
- (4) The external supply chain has higher gaps between buyer and supplier rather than internal supply chain relationship in all the success factor issues. It is mainly caused from gaps between buyer and suppliers regarding communication and expectation issues.
- (5) Regarding information exchange, openness and flexibility, suppliers usually have a higher need to reduce gaps in order to make stronger relationships

(6) Because trust is built on buyer and suppliers from both sides, the view on trust is very similar in-between suppliers and buyers.

To validate and generalize these conclusions, more quantitative research should be performed including a larger number of participating companies. Also it should be noted that the surveys in this paper does not cover any *importance rating* of the different success factors (which is only covered by the interviews. Further research should hence be done to see how suppliers and buyers rate how important they think the different factors are for a successful relationship to see if views in-between suppliers and buyers.

**RQ3: What are the key success factors for collaborative relationship between buyers and suppliers in China?**

As concluded in chapter 6.2, all relationships in this case study have different characteristics and motivations. Hence, we do not expect the relationships to be equally deep and integrated, e.g when they fall into different boxes in the Kraljic matrix. The upper right part of the Kraljic matrix (where the Internal supply chain companies fall into) shows stronger relationships while the bottom left part of the Kraljic matrix (where the External supply chain companies fall into) shows significantly weaker relationships.

Based on western research, realistic vision, long-term satisfactory performance, information exchange, practices, interaction, responsibility, openness, trust and flexibility are success factors for good buyer-supplier relationship. Especially various studies concluded that the most successful relationship is based on immaterial factors such as trust, communication and openness etc rather than material factors (Ellram 1991; Ellram 1995; Lee and Kim 1999; Mohr and Spekman 1994; Morgan and Hunt 1994; Tuten and Urban 2001). By making comparisons on how these success factors are applied differently on the actual case studies, I found that good trust, high openness and frequent good communication are foundations for achieving realistic vision, satisfactory performance, information exchange, flexibility and clear responsibility. If not achieving this, it can become hinders for reaching successful collaborative relationships.

Also, the results show that success factors which are suggested from western world are valid in Chinese firms too. As stated in theory discussions earlier, previous research on western firms has shown that the most important success factors are immaterial (trust, openness, communication) rather than material factors. Even though the immaterial factors are important also for Chinese firms as well, I have also found that structures etc are equally important for

good collaboration in-between the Chinese firms. This often includes joint-investments and interlinked processes that create a dependence on which trust and communication is built. Besides these factors, I found out the evidence that industrial cluster creation is one of the most important success factors for good buyer-supplier relationship in China. Not saying that this is un-important in western firms, but in my case study it is a total prerequisite for these companies success and I would argue that this is more important for Chinese firms also in general. Here, more quantitative studies in needed to confirm these conclusions.

The main reason why internal supply chains achieved good collaborative relationship compare to external supply chains is that they provided good platform for trust, openness and communications through joint-ownerships. Also, although supplier attractiveness provides good motivation to buyers in formation phase of relationship, it alone is not always enough for developing good collaborative relationships between buyer-supplier in China. Therefore in order to develop good collaborative relationship, buyer and supplier should emphasize more on creating an interaction platform such as structure, management system and support programs etc to develop good trust, openness and communication within and between organization.

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## Appendix 1 – Interview questionnaire to Buyer and Supplier

### Introduction

- Short explanation of interviewee
- What kind of business company is doing?
- How many employees do you have? (number of workers in different department)
- Shortly describe how company has developed in recent five years?
- What is company's position in market? (market share, yearly revenue)
- What is your target in market?
- What is your main strategy or goal in 3 years?
- How company is organized? (please describe manufacturing process, supply management process, procurement process etc)

### Customer/ Supplier

- How many customers/supplier do you have?
- Describe your customers/supplier (industry, characteristics- private company/public company)
- Which is the most significant customer?
- How much percentage of your revenue is originated from which customers/supplier?
- What is motivation for collaboration in the beginning? Describe the process of collaboration.
- How long has the collaboration lasted with the customer/supplier?
- Do you have long term relationships with customers/supplier?
- What kind of contract does customer want to have?
  - \*Longer period (more than 3 years) or shorter period(less than 3 years)?
  - \*Why?
  - \*What kind of contract you want?
  - \*Why?
- Do customer demands specific requirements on product and process design?
- How specific are the orders from your customer? (Through drawings, specifications of demands...)
- How collaboration will be look like in 3 years future?

### The product

- The company manufacturing what kind of product? Describe dependency and complexity of main three products.
- Do you work with customer or third party during development of the current product?

How do you work? Who is involved?

- Do you have your own R&D department for new product development?
- How often the company develop new product and who imitates these?
- How often changes, updates occur in manufacturing production and who initiates these?
- Do you offer customized service or only standardized service?
  - \*If you offer customized service, do you adjust machines to fulfill customer's orders in the production line?
  - \*How can you keep profits and effectiveness of manufacturing while fulfill customer's demands?
- What is company's manufacturing scale (how many tons/months) compare to other competitors?

### **The collaboration and Relationship**

- Describe your collaborative relationship with customer/supplier.
- How the collaboration has carried out with customer/supplier? Please give scores (1 is lowest – 10 is highest)
  - A: Realistic vision
  - B: long term perspective
  - C: satisfactory performance
  - D: Information exchange
  - E: Practices
  - F: Interaction
  - G: responsibility
  - H: Openness
  - I: Trust
  - J: Flexibility
- Does the customer/supplier trust you? How can you measure that?
- Are you honest to each other? How do you know?
- Do you participating customer/supplier's new product development process?
- Do you make any suggestions on customer/supplier's manufacturing process such as?
  - (1) Make contribution on knowledge about manufacturing issues?
  - (2) Guidance on dimensions & type of material, procedures in something etc?
  - (3) Do anything for developing or improving the manufacturing process?
- What kinds of functions are involved in the collaboration with customer/supplier? (persons as well)

- Are you satisfied with current collaborative relationship? How do you consider it? In which way you want to development more?
- Do you want to have closer collaboration with customer/supplier? Describe reason and How?
- What was your first expectation on collaboration with customer/supplier?  
\*Does it work as you expected?
- Do you make any contribution on customer/supplier's product or process development? How?
- How often company make communication with the customer/supplier and what way?
- Do you get feedback from your customer/supplier about project, your compliments etc? After then how you react?
- How does this collaboration work compare to others?
- You expect how long this collaboration will be lasted?
- Is there any limitation make you act less effectively in some way? Such as time limitation, cost limitation?
- Do you know the supply chain process of your customer/supplier?
- Do you know about customer/supplier's other suppliers and how they work? And have you also collaborate with them?
- If you have your own suppliers, How do you work with them? Describe your purchasing product, service, R&D situation.
- Do you collaborate on resources such as logistic systems, order systems, tools and equipment? Describe this collaboration.
- Does the length of the collaboration and distance geographically and culturally have any significance for the collaboration?
- Is there any resistance for collaboration in individually and organizationally?
- Do you have any agreements on measurements regarding reduction of costs, potential profits and loss in process and product improvements?
- How often make auditing of effectiveness and profitable of collaboration? And how you audit it?
- What are the success factors of good collaboration
- What are the risks and opportunities of collaboration
- What are the advantage and disadvantage of collaboration?
- Do you think closer collaboration will bring more benefits to your company and customer? Why?
- You think which factors are important for productive relationship on product and process development?

- What kind of relationship you prefer in future and why?

### **The competence**

- What is your core-competence in present? How will it be in the future?
- How and what do you contribute to your customer/supplier?
- Do you have any competency to contribute on process and product development?  
\*What is it and do you think it will be extended into large degree?  
\*If you don't have it, how will you cultivate it?
- Do you feel any pressure from customers/supplier about price reduction, on time delivery, efficiency of manufacturing that creates new demands and new production?
- Do you offer a valuable product to the final customer/supplier?
- Are there only a few comparable suppliers or many of them?
- Your product is easy to substitute? It is difficult for third parties to imitate you-customer relationship?
- What do you learn from the current collaboration? (give examples, like new knowledge? New technology? New management skills?) What kind of benefits you get?
- What competence do you make use of to be able to respond to the customer's demands?
- Who influence your competence (competitor, supplier, customer etc)? Do you have relations with them?
- Are there any risks for knowledge spillover from the customer/supplier's knowledge that could be negative for the customer? Do you prevent this kind of risks and in what way?

### **Dependency/demands**

- What kind of demands does customer/supplier have to you? How you consider them?
- Is it possible to make any demands on the customer/supplier? Please explain.
- Do you think you are dependent on your customer/supplier? In Which ways? Why? How can you make situation better?
- Do you think the power is balanced between you and customer/supplier? Why you think so?
- Is unbalanced power and dependency influence the business outcome between you and customer/supplier? Does it bring any bad side to you?
- Does the customer/supplier restrict your opportunities to collaborate with the customer/supplier's competitors?

\*How? And what was your reaction?

\*What possibilities and difficulties you can find when you delivery to your customer/supplier's competitor

**Others**

- Describe your suppliers. (product, relationship, collaboration)
- What kind of possibilities and risks you are facing on your own manufacturing process.