Increasing the performance of SMEs in supply chains of large enterprises: A SME perspective

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Abstract

This thesis aims at investigating how the supply chain management (SCM) practices of large enterprises (LEs) are utilized on small and medium-sized enterprises (SMEs). This has been argued by many authors as a gap in previous literature. Take the view from SMEs, the research questions are: Is it possible to increase the performance of SMEs in the supply chain of LEs? and How does the supply chain strategy of LEs and business strategy of SMEs match? They are all answered by an explorative case study research.

A mature supplier in production services for its large customers is used as case in this exploratory case study. Semi-structured interview was carried out as the main way to collect necessary data, besides documentation and observation. The study presents the existing interaction and problems with the SME, encountered how it formulates business strategy and the lessons that can be learned.

The research shows that communication is a key tool ensuring the efficiency of supply chain cooperation as perceived seriously by the SME. Besides, group communication is becoming more popular and efficient for partners in the supply chain due to the participation of multiple staffs in the projects and the issues need to be discussed and agreed among them. Although LEs have good impacts on SME’s performance, for example in delivery proportion and technical ability, the deeper kinds of interaction such as exchange of personnel, committed resources investment was not found in the cooperation. Generally, the SME perceives that the usual difficulties they confront are less bargaining power, barriers to satisfy new demands from customers and the changing in customers’ decisions. By carefully analyzing the characteristics of the SME, we suggest possible solutions such as being more active in deeper kinds of interaction with LEs, increase negotiation skills, constructing a separated unit responsible for SCM and establishing a long-term business strategy to ease these difficulties.

Taking business strategy of SMEs as an object of the research, we found main parameters the company cares about to formulate its business strategy. Comparing with literature, we suggest the company paying attention in activities of competitive market as well as the ways to take advantage of supply chain management strategies of LEs when SMEs building their business strategy.

Keywords: SME, small and medium-sized enterprises, supply chain management, business strategy.
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Hieu Nguyen Trung, Mekdes Belihu
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1. Introduction

Because enterprises today focus more on their core-competences, they rely more on their suppliers with outsourcing activities in the supply chain. As a result, supply chain management has become a key feature for promoting efficient management and developing important competitive advantages of suppliers (Quayle, 2003). Obviously, the quality of suppliers directly affects enterprises’ products and the long-term capability of suppliers influences enterprises’ competitiveness (Christopher, 2005). Large Enterprises (LEs) really need suppliers with high performance and efficient contribution on the value of their whole supply chain.

Actively participating in supply chain of LEs, Small and Medium-sized Enterprises (SMEs) more and more have significant impacts on supply chain performance and can serve the roles of suppliers, distributors, producers and customers (Hong & Jeong, 2006). The sensitiveness for changes in business environment (Weathead & Storey, 1996), flexibility to respond customers’ requirements (Carson, 1995) and rapid decision making in behavior (Tidd et al., 2005) have made SMEs as candidates to meet constantly changing customer needs and fast growing technologies. However, due to their restrictions in sizes, resources and other conventional characteristics, compare with LEs in supply chain, SMEs have less competitive advantages and are generally more vulnerable (O’Gorman, 2001).

Despite the large number of SMEs and their essential role in supply chain, the literature around SMEs and Supply Chain Management (SCM) practices within them is still small and disperse (Quayle, 2003), especially qualitative case based researches (Thakkar et al., 2008). There is a high potential for researches on SMEs and SCM strategies of LEs, especially the ability and sustainability of SMEs to meet changing needs in the supply chain of LEs. By investigating the interaction between SMEs and supply chain of LEs, this thesis will explore the issues existing in this relationship and look for the way to enhance SMEs’ performance and a proper position in LEs’ supply chain.
2. Theoretical framework

2.1 Small and medium-sized enterprises

2.1.1 SMEs definition

The definition of SMEs is different between countries such as in USA and in Europe. Otherwise, the definition also depends on the sectors they are doing business, for example, in industry, retail or service due to the differences in manufacturing structures and the utilization of capacity. Economists use a wide range of appropriate size indicators such as profit, invested capital, balance sheet total, sale volume, and earning. However, the two main criteria those are usually used to determine the size of an enterprise are number of employees and turnover (Loecher, 2000). In addition, the usage of turnover as a sole finance criterion is not appropriate in the cases of enterprises in trade and distribution sector those are have nature higher turnover figures than those in the manufacturing sector.

European Union defines SMEs as companies with less than 250 employees and which have annual turnover not exceeding EUR 50 million, and/or an annual balance sheet total not exceeding EUR 43 million (European Union, 2003). Following this, a small enterprise is defined as an enterprise which employs fewer than 50 people and whose annual turnover and/or annual balance sheet total does not exceed EUR 10 million (ibid.). This study will focus on SMEs and use the definition of the European Union.

2.1.2 The importance of SMEs

Due to their wide spread in number, the impact of SMEs is easily recognizable. The 20 million SMEs in the EU represent 99% of businesses, and are a key driver for economic growth, innovation, employment and social integration (Eurostat, 2009). Different international organizations have made their own surveys on the importance of SMEs and the need to assist them to maximize their potential. For instance, The World Bank Review on Small Business Activities establishes the commitment of the world and groups to the development of the SMEs sector as a core element in its strategy to foster economic growth, employment and poverty alleviation (Ayyagari et al., 2007).

As shown in the diagram 2-1, micro, small and medium-sized enterprises are the engine of the European economy. They are an essential source of jobs, create entrepreneurial spirit and innovation in the EU and are thus crucial for fostering competitiveness and employment. The new SME definition, which entered into force on 1 January 2005, represents a major step
towards an improved business environment for SMEs and aims at promoting entrepreneurship, investments and growth (European commission, 2003).

Diagram 2-1. Contributions of SMEs in European economy (Eurostat, 2009)

2.2 SMEs characteristics

SMEs are different from LEs in many aspects, not only the size in number of employees and capital but also in the way they organize and the way they accommodate their markets. In this paper we divide the different characteristics in 5 main areas: organization and management structure, resources, customers and marketing, organization processes, and culture and behavior.

2.2.1 Organization and management structure

The family-owned or family-controlled characteristic of SMEs, especially small enterprises, makes the owner also act as the manager. The enterprise is usually driven by the owner’s initiative and be affected by the owner’s values and ambitions (Verhees, 2005). The owner-manager is responsible for many tasks and performs a central role in the decision making process. They commit to their responsibility in the enterprise as a life-long duty and have a direct relationship to all employees, customers and suppliers (Loechear, 2000). They possess a complete overview to their own business, process all technical, administrative and organizational procedures in the enterprise. Owners-managers of SMEs usually are not willing to empower power and authority, because they do want to control most things
regarding the enterprise (Adams, 1982; Cannon, 1985). This accelerates the decision making process, but also lead to the risk that all views may not be ventilated.

The management structure in SMEs is often lacking specific departments and employees have multifunctional roles, working in many different situations and less clear assigned responsibility (Bodin, 2000). There is low degree of job specialization with more generalists. The corporation of different functions is not clear to see in SMEs, because functions are less specialized and less likely to be separated by physical and organizational distance (Tidd et al., 2005).

2.2.2 Resources
SMEs have many limitations in material resources such as human, capital and manufacturing equipments (Rothwell & Dodgson, 1994). This prevents SMEs from investing in machines, information system and other infrastructures in order to enhance product’s quality and efficient management. Furthermore, Coviello and McAuley (1999) claimed that the restrictions in human resources and knowledge possession also lead SMEs to higher capital and transaction costs and lacking economies of experiences. Scarce resources and lack of expertise in some technology areas are also the reason that SMEs rarely can accomplish research and development activities by themselves (Scott et al., 1996). On the other hand, this also results in lack of ability to directly compete against large enterprises, more vulnerable to environmental changes of the market and less possibility to expand compare to LEs (Cooper et al., 1986).

2.2.3 Customers and marketing
SMEs focus on relationship marketing in local or regional market and depend on small customer base. Naturally, SMEs tend to focus on a specialized niche market strategy with limited product/ service lines and where they do not have so many strong competitors. The owner or employees usually have close relationships with the customers and users (Rothwell & Dodgson, 1994). They communicate with customers in a close and shorter line, thus specific requirements of customers are more easily understood. It is usually perceived that SMEs know their customer personally, are flexible in responding customer inquiries, which further increase the level of customer satisfaction and reliance (Carson, 1995). Because of the closeness with their current customers, it is easy for SMEs to access accurate and cheap market information, thus can make better informed marketing decisions (Dallago, 2000).
However, the backward of relationship marketing is the limited number of customer and the huge loyalty on customers (O’Gorman, 2001). It reflects the scarce of formal marketing knowledge in SMEs and can lead to serious risks if problems happen with one or more of their main customers.

2.2.4 Organizational processes
Generally, SMEs do not have complicated procedures and have less standardization of processes when they carry out every day working. The simple planning and control systems, informal rules and procedures bring behavioral advantages for SMEs which make them more flexible with rapid internal communication and receptiveness to new situations (Adams, 1982; Cannon, 1985). This is the main difference comparing with the need for formal strategies and high level of bureaucracy that are used in LEs to maintain communication and coordination (Tidd et al., 2005). The informal characteristic is a central theme in SMEs that every process is more fluid and more adaptable to various situations. They usually focus more on daily operation and less in strategic processes.

2.2.5 Culture and behavior
Due to its typical characteristics as small scale and fuzzy organization, the culture of SMEs is recognized as a whole instead of looking at single departments or functions. The simplicity in processes and regulations brings SMEs an open, informal and unified culture that in turn encourages efficient communication and knowledge exchange (Supyuenyong et al., 2009). On the other hand, the culture of SMEs is also exemplified by the sensitivity in reaction with the fluctuation of its environment strategies (Weathead & Storey, 1996). Because SMEs are working in a highly uncertain and turbulent environment with little control over their environment, they are sensitive to day-to-day problems as they arise, to any disturbance in cash flow through the company, and thus short-term strategies are more favorable than long-term strategies (ibid.).

The owners of SMEs usually decide the goal and the vision, the regulation and culture of the enterprises, so they have a big impact on them. Hence, the behavior of employees is more easily influenced by the owner-manager’s philosophy and beliefs.

Table 2-1 summarizes the different authors’ findings on SMEs’ characteristics by groups as mentioned so far:
Table 2-1. Summary of different authors’ findings on characteristics of SMEs

<table>
<thead>
<tr>
<th>Groups of characteristics</th>
<th>Authors and their findings</th>
</tr>
</thead>
</table>
| Organization and management       | • Driven by the owner’s initiative (Verhees, 2005)  
• Owners have a direct relationship to all employees, customers and suppliers (Loechear, 2000)  
• Owners-managers do not empower power, want to control most business activity (Adams, 1982; Cannon, 1985)  
• No structured management, employees have multi-functional roles (Bodin, 2000)  
• Functions are less specialized (Tidd et al., 2005) |
| structure                         |                                                                                                                                                                                                                           |
| Resources                         | • Limitations in resources such as human, capital, competences and manufacturing equipments (Rothwell & Dodgson, 1994)  
• Higher capital and transaction cost, lacking economies of experiences (Coviello & McAuley, 1999)  
• Rarely can accomplish research and development activities (Scott et al., 1996)  
• Lack of ability to directly compete against large enterprises (Cooper et al., 1986) |
| Customer and marketing            | • Owners have close relationships with the customers and users (Rothwell & Dodgson, 1994)  
• SMEs know their customer personally and are flexible in responding customer inquiries (Carson, 1995)  
• Closeness to current customers, access to accurate and cheap market information (Dallago, 2000)  
• Limited number of customer, huge loyalty on customers and scare of formal marketing knowledge (O’Gorman, 2001) |
| Organizational process            | • Simple planning and control systems, informal rules and procedures (Adams, 1982; Cannon, 1985)  
• Flexible, rapid internal communication and receptiveness to new situations (Tidd et al., 2005) |
| Culture and behavior              | • Open, informal and unified culture (Supyuenyong et al., 2009)  
• Sensitive to disturbance, short-term strategies are more favorable than long-term strategies (Weathead & Storey, 1996) |
2.3 Supply chain management

2.3.1 Supply chain

According to Lau and Lee (2000), supply chain is a *formation of a value chain network consisting of individual functional entities committed to providing resources and information to achieve the objectives of efficient management of suppliers as well as the flow of parts*. The supply chain includes the entities from the origin point to the final consumption such as suppliers, customers and the organization itself. The network normally includes multiple suppliers and, indeed, suppliers to suppliers, as well as multiple customers and customers’ customers.

Figure 2.1 illustrates the supply chain with the enterprise being at the centre of the network of suppliers and customers.

![Figure 2-1. The supply chain network](image)

The phrase “supply chain” can also be termed “demand chain” to reflect the fact that the chain should be driven by the market, not by suppliers.

The concept of “value chain”, by Michael Porter (1985), the Harvard Business School professor, suggests organizations should look at each activity in their value chain and evaluate whether or not they have real competitive advantage in this activity. If they do not, then perhaps they should consider outsourcing that activity to a partner in the supply chain who can provide that cost and value advantage. This concept is now widely accepted and has led to the dramatic upsurge in outsourcing activity and the extending globally of the supply chain. The supply chain has become longer, more complicated and diverse in business areas as well as geographic places.
2.3.2 Supply chain for competitiveness
Individual enterprises no longer compete alone but rather are supply chains competing supply chains (Gattorna, 1998). However, it is crucial for an enterprise to rely on its position in the supply chain in order to create the best possible competitive advantage. As stated by Rosenzweig (2003), enterprises can achieve two main competitive advantages. First, high integration among partners in supply chains can turn into more responsive enterprises to face volatile demands due to increased information visibility and operational knowledge (Kim, 2006). Secondly, highly integrated supply chain partners have the potential to decrease net costs of doing business and total delivered costs to customers (Swink et al., 2007). This will benefit each member in the supply chain including customers.

SCM is perceived as an efficient mean to achieve successful international competitiveness (Evans et al., 1996). It is because recently, the focus in massive productivity improvements for many manufacturing enterprises has become limited (Christopher, 2005). Instead, there is a huge improvement potential to reduce inefficiencies caused by the poor performance of the suppliers, unpredictable customer demands, and uncertain business environment (Koh et al., 2007). The successful enterprises have realized that simply transferring costs upstream and downstream does not make an enterprise any more competitive because ultimately all costs will be reflected by the price paid by the ultimate consumer. Therefore, the traditional arm’s-length, even adversarial, or buyer/supplier relationships in the past have replaced by the cooperation, trust, recognition and proper management (Christopher, 2005).

2.3.3 Supply chain management concept
According to Christopher (2005), logistics management emphasizes the efficiently managing the procurement, movement and storage of materials, services and related information flows in order to maximize the enterprise’s profitability, SCM builds upon this platform and seeks to achieve linkage and the coordination between the processes of entities in this network (Christopher, 2005).

The Council of Supply Chain Management Professionals defined that SCM encompasses the planning and management of all activities involved in sourcing and procurement, conversion and all logistics management activities as well as coordination and collaboration with channel partners (Koh et al., 2007). Another definition by Chopra and Maindl (2001), SCM includes a set of approaches and practices to efficiently integrate suppliers, manufacturers, distributors and customers for improving the long-term performance of the individual enterprises and the
supply chain as a whole in a cohesive and high-performing business model. For the reason of this research focusing on SCM strategies and its effects on SMEs’ performance, this definition which emphasizes on SCM and business performance will be chosen.

Thus the focus of supply chain management is upon the management of relationships in order to achieve more profitable outcome for all parties in the supply chain. The integrated supply chain is created with the sharing of information flows between parties in order to serve better the supply chain’s end-customers. The aim of supply chain management is not to ensure the benefit for only a single party but for the supply chain as a whole. Therefore, the successful implementation of supply chain management brings the clear advantage on the competitiveness of the individual companies in the long term perspective.

2.4 Supply chain management strategies of large enterprises

Businesses with a SCM strategy require integration, cooperation and collaboration, which in turn demand aligned objectives, open communication, sharing of resources, risks and rewards. Enterprises build capabilities by reflecting on the value of the work performed and applying integrative principles that allow multiple processes to be synchronized (Soosay & Sloan, 2005). Consequently, part of this process involves supplier evaluation and building relationships with suppliers, which changes financial performance (Carr & Pearson, 1999).

A wide range of SCM strategies that are applied by LEs, including supplier communication, supplier evaluation, supplier development (training, committed resource investment) and the involvement of suppliers in new product development (NPD) processes.

2.4.1 Supplier communication

One of the critical requirements of efficient supply chain management is the creation of a synchronized flow of materials and information from suppliers to their customers (Krajewski & Ritzman, 2004). Information sharing between partners is found to be the most vital driver for the presence of trust between them (Leverick & Cooper, 1998). Communication methods used by buyers to communicate with their suppliers are categorized into two main groups: traditional communication methods and advanced communication methods. Traditional methods are those that involve the use of telephone, fax, email, written, and face-to-face contact. On the other hand, advance communication methods refer to computer-to-computer links, electronic data interchange (EDI), and enterprise resource planning (ERP). The use of electronic mail, electronic data exchange, fax, computer to computer links, and EDI broadens
and deepens accessible information about business activity (Bhatt, 2000) and facilitates user participation in a variety of information networks (Dewett & Jones, 2001). However, face-to-face communication between supplier and buyer is still considered an important method for information exchange (Dyer, 1997).

The information sharing within the supply chain can be quality requirements, mutually achieve goals, responsibilities, and jointly making decision or solving problems. It should be detailed enough, frequent enough and timely enough in order to increase understanding between partners.

2.4.2 Supplier evaluation
The evaluating suppliers’ activities aim to choose the best suppliers for the enterprise with the highest performance. In order to ensure the uninterrupted supply of items, it has been observed that more than one supplier or vendor is normally available for each item. However, the progressive enterprises tend to reduce the number of their suppliers, normally from 2 to 4 capable suppliers for each item (Cormican, 2007). Periodic evaluation of supplier performance is carried out to ensure the meeting of relevant quality standards for all incoming items (Jain et al., 2004).

The main criteria to select the suppliers are on the basis of cost minimization, delivery reliability, product performance, flexibility and response. Some literature put many efforts in creating best practice and models which employ both technical metrics and financial parameters such as On Time Delivery (OTD), the number of parts Returned To Suppliers (RTS), and total cost for identifying supplier performance.

The result of evaluating will be used for establishing competitiveness between suppliers through recognition activities such as awards, certification and a committed long-term relationship.

2.4.3 Supplier development
Finding suppliers already organized to meet a buyer’s requirements for quality, delivery, and cost reduction is likely to be a challenge. Therefore, one efficient way buying firms can meet this challenge is by developing their suppliers in ways that improve suppliers’ capabilities (Carr & Kaynak, 2007). Krause & Ellram (1997) defined supplier development concept as any effort of a buying firm with a supplier to increase its performance and/or capabilities and meet the buying firm’s short and/or long-term supply needs.
Training

The training activities of suppliers can be training courses in new technology, cost-cutting project or product development. However, the training through regular communication by providing feedbacks and guidance are a more efficient way. Providing feedback can educate or train suppliers how to fix problems that are hurting the suppliers’ performance (Krause et al., 2000).

Furthermore, the creation of learning environment within supply chain through open innovation networks, supplier associations has a huge impact on learning and knowledge diffusion processes in order to develop the organization’s capabilities.

Committed resources investment

Firstly, the direct supplier development activities involve know-how commitment or human resources. They can be on-side consultation; temporary personnel transfer, inviting the supplier’s personnel, as well as process-oriented or strategic advice from the buying firms to specific suppliers.

Secondly, buying firms also support suppliers in the provision of equipment or capital to enhance the performance of suppliers. This kind of investment usually goes along with other conditions to supplier such as long-term buyer-supplier relationships in order to safeguard buyer’s investments (Wagner, 2006).

Finally, the firms can have indirect supplier development activities such as offering incentives or enforcing supplier improvement, and hence makes use of the external market to encourage performance improvements (ibid.).

2.4.4 The involvement of supplier in new product development processes

The success of developing the relationship with suppliers will reflect the enterprise’s innovation capability, especially in the NPD processes. Firms can cooperate with suppliers in the NPD processes and exploit their design and technology expertise. Furthermore, firms can create a way for suppliers to directly react to competitive markets. The pressures such as shortened product life cycles, fast-changing technologies, ever-increasing quality levels and cost-cutting by competitors should be transfer completely to suppliers in order to exploit their initiatives (Hahn et al., 1990). In turn, initiatives from suppliers are strong drives for the enterprise’s innovation.
Birou & Fawcett (1994) carried out a survey in US and European enterprises and concluded that the higher frequency and intensity, and the earlier of supplier involvement, the more success of NPD processes.

Christensen and Lundvall (2004) argued that in large areas of industry the “doing, using and interactive learning” mode of innovation is more important than the “science and technology innovation” mode. One of the reasons is the investment in internal research and development area can be high risk and the external learning is getting safer and less cost. Therefore, external interactive learning with suppliers in order to improve innovation capability will be more efficient.

In another research, Burt (1989) showed that “56 per cent of each sales dollar is spent on the procurement of production materials. It suggests that the potential impact of suppliers on the quality and cost of new products cannot be overemphasized”. In another word, improvement on quality and cost of new product can be done significantly in supplier area.

Clark (1989), in a cross-national study of 29 NPD projects, found that “much of the Japanese advantage in concept-to-market time was attributable to supplier involvement in the NPD processes”. In addition, lean manufacturing was very successful in Japan, especially in Toyota, bases mainly in the close, long-term cooperation with suppliers.

Table 2-2 summarizes different authors’ findings on various kinds of SCM strategies that are applied by LEs for their suppliers.
Table 2-2. Summary of different authors’ findings on SCM strategies

<table>
<thead>
<tr>
<th>SCM strategies of LEs</th>
<th>Authors and their findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supplier communication</td>
<td>• Synchronized flow of information is the critical requirements of efficient supply chain (Krajewski &amp; Ritzman, 2004)</td>
</tr>
<tr>
<td></td>
<td>• Information sharing is the most vital driver for the presence of trust between partners (Leverick &amp; Cooper, 1998)</td>
</tr>
<tr>
<td></td>
<td>• Electronic mail, electronic data exchange, fax, computer to computer links, and EDI broadens and deepens accessible information (Bhatt, 2000)</td>
</tr>
<tr>
<td></td>
<td>• Face-to-face communication between supplier and buyer is still an important method for information exchange (Dyer, 1997)</td>
</tr>
<tr>
<td>Supplier evaluation</td>
<td>• The progressive enterprises tend to reduce the number of their suppliers, normally from 2 to 4 capable suppliers for each item (Cormican, 2007)</td>
</tr>
<tr>
<td></td>
<td>• Periodic evaluation of supplier performance is carried out to ensure the meeting of relevant quality standards for all incoming items (Jain et al., 2004)</td>
</tr>
<tr>
<td>Supplier development</td>
<td>• Providing feedback can educate or train suppliers how to fix problems that are hurting the suppliers’ performance (Krause et al., 2000)</td>
</tr>
<tr>
<td></td>
<td>• Committed resource investment usually goes along with other conditions to supplier such as long-term buyer-supplier relationships in order to safeguard buyer’s investments (Wagner, 2006)</td>
</tr>
<tr>
<td>The involvement of supplier in NPD processes</td>
<td>• The pressures by competitors should be transfer completely to suppliers in order to exploit their initiatives (Hahn et al., 1990)</td>
</tr>
<tr>
<td></td>
<td>• The higher frequency and intensity, and the earlier of supplier involvement, the more success of NPD processes (Birou &amp; Fawcett, 1994)</td>
</tr>
<tr>
<td></td>
<td>• Advantage in concept-to-market time was attributable to supplier involvement in the NPD processes (Clark, 1989)</td>
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2.5 SMEs and supply chains of large enterprises

2.5.1 The position of SMEs in supply chain of large enterprise.
SMEs are now more and more taking part in the global business network and participating in many interlinked supply chains (Hvolby & Trienekens, 2002). SMEs have significant impacts on supply chain performance and can serve the roles of suppliers, distributors, producers and customers (Hong & Jeong, 2006).

SMEs normally focus their activities on specific niche markets by their unique competences in the supply chain. They can compete within the supply chain to get competitive positions in terms of either low cost operations or value added operations (e.g. new product and service development) (Levy et al., 2001). The high flexibility in organization and rapid decision making provide SMEs the ability to adopt competitive advantages learnt from large enterprises and collaborate efficiently with other SMEs.

SCM has both the positive and negative effects on the performance of SMEs. On one hand, SCM can provide quality, cost, customer service, leverage and even risk reduction benefits for the SMEs while on the other side, it exposes the SME to greater management and control hazards while reducing its private differentiation advantages (Arend & Winser, 2004). Due to the restrictions in their size and resources, SMEs are likely less powerful in negotiation and have to accept command or control imposition by LEs. Compared with LEs in the supply chain, SMEs have traditionally been modeled with some significant worse characteristics including having few products, few customers and low volume, lacking economies of experience and learning capacity, being bounded rational, having higher capital and transaction costs, having a reactive nature, being technologically focused with weak marketing skills, having limited resources and high strategic reliance on CEO perceptions of market forces and generally being more vulnerable (Coviello & McAuley, 1999; O’Gorman, 2001).

2.5.2 Supply chain management in SMEs
Even though supply chain has ambiguous meanings or is defined in different ways in different literatures, most definitions are for large scale industries and are built on the same concept. Defining supply chain in SMEs might be a little bit difficult because, as explained above in the literature of SMEs, most SMEs lack organized structure and are mostly managed by their owners. However, quite number of literatures has been written on supply chain of
SMEs. Most literatures have addressed the fact that the supply chain of SMEs are controlled and determined mostly by their big customers instead of themselves.

The SMEs view of supply chain management seems to be the exertion of power by customers and is consequently seen by SMEs as a one way process. Similarly, SMEs do not employ supply chain management rather they are managed at arm’s length by larger customers (Quayle, 2003). Some also have defined the supply chain of SMEs as supply chain in SMEs is a set of business activities including purchase from open/spot market, manufacturing or processing of subcomponents/subassembly within the plant and delivery to large enterprises using hired transportation to enhance value of end product and in-turn to ensure long-term regular purchase orders (Thakkar et al., 2008).

2.5.3 SMEs’ business strategy and supply chain of LEs

Supply chain management strategies of LEs

Hicks (1999) argued that the aim of supply chain strategy is to achieve to the most efficient, highly profitable supply chain system that serves customers in a market. This strategy is crucial for the efficiency of the whole supply chain. He recommended that a strategic strategy should include four following steps:

1. Network optimization: design the least cost network focusing on customer demand;

2. Network simulation: test alternative models to predict supply chain behavior;

3. Policy optimization: develop best operating rules;

4. Design for robustness: anticipate unforeseen circumstances and possibilities.

Formulating SMEs’ business strategy

As mentioned above, SMEs usually do not have a complete strategic business plan (Gunasekaran & Ngai, 2003), they merely respond to changes within the marketplace (Berry, 1998). The business strategy in SMEs is affected by the owners’ values and desires, and is done in a short run, often one year. The growing of SMEs can be the consequence of strategic choices of entrepreneurs (Hambrick & Manson, 1984), the ability of themselves to prevail over the barrier to grow (Barbel et al., 1989), or the structure characteristics of external environment (Aldrich & Fiol, 1994). Proponents of strategic management in SMEs believe that the type of planning employed will be contingent upon its stage of development and this
activity will evolve and become more formal and sophisticated over the life cycle of the business (Robinson & Pearce, 1984). Superior competitive strategies are essential if the SME is to achieve not only absolute growth rate but also growth relative to competitors and the market (O’Gorman, 2001).

The closeness characteristics of SMEs with their suppliers and customers bring them a chance to achieve a higher reliability of the supply chain. Obviously, SCM provides an opportunity for SMEs to align supply chain objectives with business strategy; it is an opportunity to develop and maintain relationships and equally important, to identify skills and competences, thus allowing a focus on life-cycle costs (Quayle, 2003). The long-term development of the business in later life cycle stages must be guided by a coherent growth strategy which has been formulated within the framework of identified environmental trends, competitive activity, market opportunities and the recognition of the existing skills, competencies and resource requirements of the firm (Berry, 1998).

2.6 Gap in previous literature

Although the discipline of SCM has attracted substantial research interest in recent years, fundamental part of managing supply chain literature deal with LEs. Chopra and Meindl (2001) claimed that many studies of SCM focus on the practices of LEs, while SMEs are treated mostly from the viewpoint of LEs. In addition, Quayle (2003) argued that researches on SMEs which act as an ancillary first-tier or second-tier suppliers in their supply chain are small and dispersed; there is a dearth of literature regarding the use of SCM practices and its effect on performance of SMEs. Moreover, Thakkar et al. (2008) carried out a critical review of 77 related articles on the issues of SCM and SMEs, pointed out the growing importance of this research area and the need for further exploration with qualitative case based research in order to investigate issues in more depth within the strong social environment of SMEs. Being motivated from the propositions of these authors and the scarce of literature have found on this topic, and by holding a case study research methodology, this study aims to refine and update the understanding of the interaction between SMEs and the supply chain of LEs from the SMEs’ perspective.
3. Research questions

After reviewing the literature, we formulated 2 research questions (RQ) with corresponding more detailed investigate questions (IQ):

RQ1. Is it possible to improve the performance of SMEs in the supply chain of LEs?
   IQ1.1. What kind of interaction exists between SMEs and LEs?
   IQ1.2. What are the difficulties of SMEs in working with LEs?
   IQ1.3. What sort of integration does SMEs expect from LEs?
   IQ1.4. How can the performance of SMEs be improved?

RQ2. How does the supply chain strategy of LEs and business strategy of SMEs match?
   IQ2.1. What parameters do SMEs consider while formulating their business strategy?
   IQ2.2. How can SMEs’ business strategy take advantage of supply chain management strategies of LEs?
4. Research Methods

4.1 Research strategy

4.1.1 Case study methodology
Generally, a case study approach is a favor method to apply when the research aims at answering explorative research questions involving “how” and “why”, when the control over the study situation is limited and when focus is on actual development in a social context (Yin, 2007). Moreover, case study is preferred when the units of study are complex and hard to isolate from the real-life context (ibid.). The research questions of this study mainly focus on explorative issues and are suitable to be answered completely by a case study in contemporary business environment. The interaction between SMEs and supply chain of LEs is complicated; some SCM activities can have both impacts and difficulties for SMEs. Therefore, case study approach suits for this study.

4.1.2 Case selection
An appropriate choice of case will affect much the quality of researches in terms of optimal contribution to theory and ability to solve the research problems (Yin, 2007). The company Mekanotjänst was chosen as a suitable case with many reasons. It is a SME and has acted as a traditional subcontractor for its large customers from the time it was established. It is evolving in the process from a component supplier to a system supplier that has an increasing demand for the development of the interaction with LEs. The ambition of Mekanotjänst to grow by improving its relationship with LEs higher and wider is also interesting to study. Moreover, the willingness to participate in the research of Mekanotjänst ensures an intensive source of data not only from the website and document, but also the openness and helpfulness of interviewees. Finally, one of the interviewees, as an industrial doctoral candidate, has done a research in industrial management at the company, thus it is a good background for authors of this study to inherit valuable insights and source of data.

4.2 Research works
The research process has been performed in following steps:

4.2.1 Literature review
The first step of the study is to get a good grip on characteristics of SMEs and the SCM strategies existing between buyers and suppliers. A wide range of literature on these two areas has been reviewed, evaluated and summarized. Following this, the topic of the study is
narrowed down on the position of SMEs in the supply chain of LEs. The gap in literature was found and the need for an explorative study on this area was described.

4.2.2 Acquisition of data
The data of the case study was acquired through documentation, interview and observation.

- Documentation: It is a study on the company’s website, brochures, related articles and especially a doctoral licentiate (Carlson, 2009) about the company at a relevant topic. It provided necessary overview information and pre-understanding of the conditions of the company as a supplier for LEs.

- Interviews: Interview is a very flexible tool with a wide range of applications, it can help us catch a lot of information which helps not only to indicate our research, but also to identify and prioritize issues (Walliman, 2005). We chose semi-structured interview which achieved defined answers to defined questions, while leaving time for further development of those answers, and including more open-ended questions (ibid.). It provided the main source of data for our research.

We raised the questions individually on related issues, and also obtained the opinions of the supervisor and fellows. After that, we discussed and categorized the interview questions by groups according to research questions in order to keep balance among necessary contents. A number of warming up questions on general conditions and interviewees themselves also helped the interview more open and we could go deeper and further in contents. The prepared questions are listed in Appendix A.

We interviewed two employees at managerial level at the same time: Inga-Lill Carlson, business developer and Henry Wallin, marketing manager who both have worked at the company for more than 10 years with broad experiences. The interview took in about 2 hours and the contents was noted and recorded. Some extra questions those not were covered by prepared questions were developed, and some historical events, insights on related issues were caught by the lively expression of informants.

- Observation was done with the guide of the business developer on the manufacturing premises and different business sections for about a half hour. Informal talk about manufacturing capabilities, facilities and thoughts on business development among others also was carried out with corresponding observations.
4.2.3 Analysis and evaluation of data

The notes and records were typed out in the day after the interview separately by researchers. The findings from the interview and other sources with first evaluations were sent by email to the business developer to check the accurateness. The analysis and conclusions was taken by deep discussions between researchers with the reference to necessary information proving by the company’s representative when needed.

4.3 Research quality

There are four conditions that should be ensured for the quality of a qualitative case study research: internal validity, construct validity, external validity and reliability (Yin, 2007).

4.3.1 Validity

- Internal validity is concerned with measuring how well the conclusions of the researcher reflect the reality and it is reflected by causal relationships between certain events that lead to other events which is popular in explanatory investigations (Yin, 2007). Although this is an explorative study, we take a cautious attitude, continually questioning in analysis. Some explanations are proposed in this thesis between the difficulties of SMEs in the interaction with supply chain of LEs and their traditional characteristics that lead to corresponding recommendations.

- Construct validity is about establishing appropriate operational measures for the studied phenomenon by using multiple source of evidence, setting up chain of evidence, and having key informants review findings and conclusions (ibid.). This research has been done with multiple sources of evidence with reviewing of findings by the key informant. Each topic rising in the interview is discussed and described by two respondents and sometimes with different opinions. The confused points are checked again with informants by emails and other available information sources.

- External validity concerns the transferable possibilities of the findings and conclusions from the study to other companies or situations (ibid.). The selection of case study in this research was made from a number of criteria to ensure the result can be applied for similar cases as suppliers offering production services for LEs. Because the results of the study is related and compared to theories, it generalizes and expands theories. However, due to the limitation to one case, the possibility of generalization is restricted.
4.3.2 Reliability

Reliability refers to the possibility to repeat the research and reach the same findings and conclusions (ibid.). The case study is carried out in an organized and well-document way. The interview was recorded with voice recorder, notes were taken, and data was documented the day after the interview, thus there is a low chance of information losing in the process. Moreover, the reliability is also increased as the key informant accepted the findings. However, the research objects cover developing areas, and it is difficult to repeat this study with exactly the same results.
5. Description

5.1 Background of Mekanotjänst

Mekanotjänst Industries group is a modern Swedish manufacturing group, found and run currently by the founder. The group comprises four companies: Mekanotjänst Järvsö, Mekanotjänst Hudiksvall, Mekanotjänst Söderhamn, and Mekanotjänst Ljusdal with around 240 employees totally. The companies are in general contract manufactures of products, modules and complete systems. Their customers include telecommunication, medical technology, electronics/instrument and engineering industry. The company offers a qualified specialist in sheet metal working, machining and assembly. It is involved in the changing from a component supplier to a system supplier.

5.1.1 Mekanotjänst Järvsö

Mekanotjänst Järvsö has experience of design involvement with its customers and it has specialized in particular on developing prototypes in direct contact with the customer. And in addition, manufactures pneumatic actuators, valves, switches, positioners and limit switches. The company also delivers complete fitted with actuators and accessories pre-assembled valve package for process industries.

5.1.2 Mekanotjänst Hudiksvall

Mekanotjänst Hudiksvall offers installation and is well equipped for multi-operation turning, they work with steel structures, forging and cast parts made of different materials as ductile iron, gray iron, aluminum and bronze. They offer their customers design adaptation, suggest minimizing machining and always strive to achieve the lowest possible cost to the customer.

They offer automation according to customer and product needs, as well as in two-sex pallets systems, or flexible FMS systems. They specialize in modern machinery which has high processing speeds; they can cope with large volume in a short time with maximum flexibility.

5.1.3 Mekanotjänst Söderhamn

Mekanotjänst Söderhamn is the specialist of profile of sheet metal among the Mekanotjänst group, it has a long history of high production volume for the telecom industry. With the press lines at 18-250 tons, highly automated punching machines and its own powder coating facility, it can handle large series of sheet metal. It also has a self-assembly department including electro-mechanics and works with the prototypes to series production machines thus allowing for early feedback on the drivability of the series. In addition to their complete
machinery, they have a number of tools for punching and bending, which means customers benefit when we can minimize tool investment in new projects.

5.1.4 Mekanotjänst Ljusdal
Mekanotjänst Ljusdal specializes in pipes, profiles and homogeneous rods. They have a capacity up to 76 mm tube and accommodate facility for bending of tubes and profiles, welding, brazing, end forming and assembly. Components and systems from Ljusdal go preferentially to customers in manufacturing, with high standards of quality and reliability - and with special demands on the compressive strength and purity. They have certified welders are undergoing continuous welds trainings as part of efforts to develop the skills of employees to ensure quality. They satisfy high standards of quality and reliability and can offer qualified prototype and component manufacturing.

5.1.5 SCM activities in Mekanotjänst
Each group of Mekanotjänst participates in production of parts of a project based on their specialties. The company manages part of its internal supply chain in a way which makes each process of production and delivery easy, on time and cost efficiency by coordinating among the group. Even though there is no separated department to manage the supply chain as a whole, the cooperation between marketing and purchasing is increasing in order to manage supply chain activities, especially the external part of the chain with customers efficiently. The demand for a separated department responsible for supply chain is increasing. It is due to the customers tending to simplify their own supply chain by reducing the number of suppliers and request the company manage efficiently its supply chains by itself. Mekanotjänst has about 250 suppliers which are supplier of parts, products and raw material, legal, outsourcing partners and logistics. The management is convinced that they manage their suppliers well and better than they mange the relationship with their big customers.

5.2 The interaction between Mekanotjänst and large customers’ supply chains

5.2.1 Communication with customers
The communication between Mekanotjänst and its customers is carried out almost every week, and sometimes everyday if needed. The common methods are face to face meeting, fax and email, but the most popular is telephone conference with the project group in order to well coordinate with customers. In the beginning of a new project, especially in new product development projects, the communication is taken deeply, widely and more often with the
involvement of a wide range of people from production, design, prototype, purchasing and marketing.

The company is developing an intranet and electronic data interchange (EDI) system in order to exchange the kind of accurate information with some new customers. However, the application of these modern methods also depends on demand from customers; some customers have implemented this system, some of them have not. The company will be ready to adapt it on customers’ request.

5.2.2 The content of customers’ agreements
The agreement begins with the general agreement between the customers with the company. It contains a wide range of information such as price, quality, payment terms, delivery time, and logistics requirements. It also concludes responsibility, the way to set claims, contacts, how to cooperate to solve problems rising, and special agreements on different products. The most important issues demanded from customers are quality and delivery time. Although the customers always seek for a cheaper price and make comparison between suppliers, the reliability in delivery proportion and quality are concerned most.

Some customers use long-term contract, however normally the agreement is negotiated again after each year due to the change in price, especially in the fast changing market as telecom industry where the value of equipments changes frequently. The company always tries to seek long-term agreements in general which are built by trust, reliance and close cooperation, but the detail on price and other related issues should be changed corresponding the fluctuation of the business environment. For Mekanotjänst’s big customers as Ericsson and ABB, the company has worked more than twenty years almost from the time it started itself.

5.2.3 The positive impacts of large customers
The management of Mekanotjänst believes that their customers have positive impacts on their performance. For example, in a contract between Mekanotjänst with ABB, ABB supplied the freight car to pick up finished goods at scheduled time; thus requiring the company to perform 100% of delivery proportion. If the goods were not ready at that time, Mekanotjänst had to arrange and pay for the freight to ABB. This demand impacted much on the improvement of company’s delivery ability.
The other form of cooperation is in terms of discussion between Mekanotjänst and the customer to agree on technical designs before the start of production which will have a huge impact on the quality of product and speed of production.

The supplier evaluation done by the customers also has impact on their performance. Following these supplier evaluation systems, a number of delegates from customers often pay a visit to observe the company’s operation, to look at what should be done better, and suggest ways of improvement.

Customers help the company to align all functions. They invest their time, providing training and knowledge but not financial resources. For example, personnel from Ericsson in NPD projects could come upon request from the company, organize the meetings in seminars, and explain the product they want the company to do, product functions, and get understanding with the company’s personnel. In the workshop, the customers sometimes also allow the company to borrow their testing equipments.

Customers have not assigned experts to the company to work in a long term period. But personnel from Ericsson, for example, come to the company to discuss technical designs, how to manufacture, cooperate in cost efficient project, and so on in order to have good communication and good understanding from the beginning.

5.2.4 Difficulties in corporation with customers
Generally, most of the demands from customers are satisfied by the company’s capacity. The right investments on knowledge and machine are discussed and decided by top managers when necessary. However, the company is still confronting with some difficulties when working with their customers.

At the time Mekanotjänst started to cooperate with some large customers, the large customers sometimes had a ‘big brother’ attitude. In order to get their orders, the company had to sign in unfair commitments with very rigorous conditions for Mekanotjänst and limited responsibilities for their customers. However time by time, as the company works in a long term relationship and get mature trust, customers become more open, it is due to they really need good suppliers. The long term agreement with customers also brings the support of customers in banking agreements.

Although, Mekanotjänst is customer-oriented; its business aims at satisfying customers’ demands, and its customers are mostly those ones who are driving suppliers, obviously the
larger company always has the higher decision. Different customers have different attitudes; some of them are very cooperative and curious with what the company can suggest, the others are satisfied with what they have. There are two sides of this problem. They are very open with technical suggestions or quality improvement propositions. On the other hand, they become more difficult with cost negotiation, payment terms; they want to get shorter lead time and very reluctant to pay anything for related services.

The company is not single supplier to the customers. Therefore, they are compared in price, quality, lead time and logistics solution in several suppliers. Customers also request the company to deliver to the other customer’s partners all over the world. The company cannot choose between different solutions, they have to follow the customers. Sometimes, the company has to export to Ericsson’s partners, Flextronix for example, in Poland and China but do not get paid for these deliveries. The risks in logistics and currency exchange can make the company unable to meet customer’s need and being penalized.

It is not easy for a SME in working with big customers; although they are the driving force of SMEs’ performance, but sometimes they change their mind too often in their decisions. They request flexibility for increasing volumes with very limited responsibilities that can take serious consequences if their forecasts go wrong. In a typical example, 5 to 6 years ago, Mekanotjänst invested about 1 million Swedish kronor on pipe-chain logistics system that Ericsson suggested the company should have to achieve Vender Manage Inventories (VMI) logistics concept. They started up with two factories, and then it worked very well. But after that, Ericsson thought about their business system, and made their own system. Mekanotjänst had to make more investment to adjust to their new system.

5.2.5 The involvement of Mekanotjänst in LEs’ NPD processes
The company perceives that NPD project is more complicated than purchasing project because it demands higher competences, deeper communication and capital investment with high risk. However, it is extremely important for customer’s business, therefore the company should not only have the role of purchasing supplier, but also it should participate proactively in NPD projects.

The management of Mekanotjänst mentioned that they have been involved in NPD processes several times. Sometimes the NPD project is started upon request from customers and sometimes from its own initiatives. Some customers asked Mekanotjänst to face directly with the pressure of their competitive market, for instance Mekanotjänst needs to understand the
fierce competition between Ericsson and its rival, Huawei, in cost-cuting pressure. The company’s involvement in NPD of its customers is still at the primary stage; so far, they have mostly participated in cost reduction projects of the NPD processes.

Production manager, prototyping manager, purchasing manager and marketing manager will involve actively in the beginning period. They are full time engaged with tight schedules to discuss alternatives and what to be changed in order to have proper decisions. The pressure from customers’ competitors is also transferred directly to the supplier.

Normally, Mekanotjänst also calls its suppliers to meet with its customers and cooperate together in NPD processes, but the cooperation between Mekanotjänst and its suppliers is not as good as the way its customers do. Mekanotjänst’s customers are better than the company in SCM issues such as managing the number of suppliers (its customers have much less suppliers than the company has) and supplier development (categorization, communication and cooperating in resources). The purchasers from Mekanotjänst’s customers also are professional, so when they look at the company’s purchasing function; they often can suggest improvements.

The company claims that it has the ability and capacity to be involved much deeper and at earlier stages, and believes to have the potential to improve the NPD processes much more than it does today. In addition, the company has the ambition to deal with the higher level of management of their customers to show their capacity and to prove what they can further contribute with.

5.2.6 Mekanotjänst’s expectations to improve the efficiency of the cooperation with customers

Firstly, the big customers normally have different staffs that are responsible for separate areas in cooperation such as contracts, purchasing, and product development. However, although the contents of these sectors closely depend on each other, when these staffs work with the company, sometimes the coordination between them is not good, they do not update with specific adjustments in other areas. In this case, the company has to spend time to make the contact between them. Therefore, the coordination between staffs in different areas of the customers’ companies should be improved.

Secondly, the company tries to participate earlier in the NPD processes. It allows Mekanotjänst to influence the product, to work with its customers to achieve the possible diagram that how a new product can be developed. This diagram is vital to show how the
parts are constructed, to ensure the understanding between partners in projects and the smoothness of production flow in later stages. The involvement of production specialists from early stages is very important because sometimes the contractors of customers do not have enough experiences in production, and the company can suggest them at inappropriate technical designs, take these designs away if they see it could be problem in production or quality requirements. By this way, Mekanotjänst can contribute better to customers’ NPD processes and it will secure a long term relationship with them.

Thirdly, the company proposes to widen and go higher in the relationship with customers by trying to communicate with operative purchasers, business contractors, and other strategic people. Often, the operative purchasers cover a large area; therefore they can tell them that they also can manage other areas too. Therefore, the contact with higher managers in the customer’s organization is valuable. The company wants to tell them more how well they can cooperate and develop in the future, what Mekanotjänst is able to perform for them.

Finally, the company is working much on the organization of order flow, sharing documentation, information technology, EDI to develop communication. It understands that the efficient communication is the key for developing the relationship and reducing serious mistakes raised by misunderstandings.

5.3 The matching between Mekanotjänst’s business strategy and large customers’ SCM strategies

5.3.1 Mekanotjänst’s business strategy
The company wants to become a natural choice as a long term partner of their customers. By accommodating customer’s demand, they develop a complete business strategy in order to enhance the company’s performance. Following this, separated business strategies are developed for each sector such as purchasing, marketing and production.

As shown in the Figure 5-1, the company categorizes their customers in 4 main segments: telecom, electronic, mechanical and workshop. Maybe more segments will be created in the future such as energy and recycle. In each segment, the company tries to have a certain number of customers and sale contracts. Thus, with the changing ups and downs of market in each segment, the company can ensure the balance of sales volume contributed by different segments. This kind of categorization is also in order to overcome the challenge of the different life cycle of different products, short for telecom and long for mechanical.
The philosophy of motorway is applied successfully through the company as a whole and aims at enhancing customer services and delivery performance. Each business activity has its own function and is located corresponding with different positions of the motorway. As shown in Figure 5-2, in the entrance of motorway, the early involvement of the company in design stage makes new products come up on the highway with short lead times, greater precision on product flow of next stages. Once up on the highway, the support system of the motorway (management, marketing, finance, IT, quality and purchasing) guarantees the consistent of high speed. The product or technology that phased out also should take away on the exits of motorway and will be replaced by new ideas.
In cooperation, the large customers usually have high volume issues in the question and want their suppliers to support them. Customers want the company to follow them to invest manufacturing in different oversea markets, in for example China and Estonia. It is a new challenge for Mekanotjänst to manage its branches abroad, however eventually it can be a new business development strategy to expand the company.

The company sets 10% per year targeting in sales grow, and with this strategy it is interesting that they are ready to grow to be a large enterprise. However, on the way becoming a large company, they still have some difficulties such as attracting competent persons, for example production managers. They have got some supports from an EU project aiming at SMEs specific learning programs. They have profound belief in a bright future.

5.3.2 How Mekanotjänst choose their customers

Mekanotjänst has to choose which segments to focus and it should not be too many segments, too many customers, or too large volume. They choose customers that are suitable for their competences, their capacity and have a willingness to help them develop themselves. For example, customers in medical devices need higher quality demands, and the company have to certify themselves if they want to work with medical products. However, the company cannot qualify too many certificates at the same time. They have to choose customers with similar demands, and sometimes reject orders those are neither suitable for equipments, competences, volume, nor short term contract, special material they are impossible to handle. They carry out customer visits often to choose customers that need efforts to contact with.

5.3.3 The demand to know more SCM strategies of large customers

Mekanotjänst would like to know more about their customers in order to structure and align better their business strategy in long term perspective and to accommodate with the demand. It is vital to understand which customers are suitable with them, how customers can help the company develop and how to develop faster. They need to know the knowledge of how they are thinking, what they value, how they look at suppliers and their supply chain, their global development strategy. They can get high relevant information from the homepage website, communication, and shareholder’s investing information. The company always feels they do not understand enough about their customers. They want to get more information through deepening communication.
6. Analysis

6.1 The interaction between Mekanotjänst and its large customers

6.1.1 Communication

As suggested by many authors, ensuring the efficiency of communication is one of the most important requirements for supply chain management. Mekanotjänst also pays a lot of attention on developing communication with its customers and suppliers. They perceive intensively that the deeper they communicate with its customers, the more they understand its customers and their supply chain management strategies. They also claimed that many troubles caused by inefficient coordination between members involved in projects. Therefore, communication between partners in the supply chain always should improve not only the quality of communication but also the frequency of communication.

In Mekanotjänst, communication is carried out almost every week, sometimes everyday by various methods such as face to face, email, fax, and telephone. Agreed with the opinion by Dyer (1997), they asserted that in spite of the existing of various kinds of communication, face-to-face communication between supplier and buyer is still considered as an important method for information exchange. From the findings, we also can see that the kind of group communication such as group meeting or telephone conference with the participation of different members is more popular and useful in Mekanotjänst rather than individual communication methods (fax, email, telephone, etc.,). Especially, when the deal is done or agreements are signed between companies, communication in group is more efficient in conducting a fruitful agreement as there are a lot of details exchanging, reverse discussions, negotiations and use of body languages which make the two parties understand and trust each other. Projects more and more involve different members from different areas with the equal demand of coordination, and group communication has obvious advantages in term of saving time and exposing employees to different kind of knowledge and information.

In Mekanotjänst, we do not see the synchronized flow of information or the existence of systems allowing the automatically sharing of information between the company and its customers. As the argument of Leverick and Cooper (1998), the low level of information sharing may reflect the limited trust between partners. Bhatt (2000) argued that advance methods of communication broadens and deepens accessible information, Mekanotjänst is also aware of this issue and recently have been implementing IT tools such as electronic data interchange (EDI) systems to help it work with customers efficiently. However, due to the
limited number of customers who have adopted integrated information system and EDI, Mekanotjänst has not fully applied those systems yet, but it can be able to integrate upon request from customers. The hesitation of Mekanotjänst can be explained, as being a SME, the dilemma is that Mekanotjänst not only has to follow customers to satisfy them, but also has to concern its limitation in capital and human resource. Mekanotjänst cannot implement these advanced IT systems as fashion; the complete implementation only can be reached after carefully investigating the efficiency of this investment.

6.1.2 The positive impacts of large customers

The management of Mekanotjänst has mentioned that their customers also have a positive impact on their overall performance. Following a customer-oriented business strategy has made the company to be affected by its customers, and the impact is mostly positive as it is a driving force for Mekanotjänst to perform better. We will discuss the different aspects of impacts large customers put on Mekanotjänst.

Pressure on performance

According to the management of Mekanotjänst, the company is customer oriented and is mostly guided by large companies and these customers have a positive impact on them. They have pointed out that, their customers have been their driving forces for making their business decisions. For example, the fact that big customers like ABB is more concerned about the time of delivery has a positive impact on Mekanotjänst to strive towards high-speed production and delivery. ABB in this case, provided Mekanotjänst with freight cars to pick up finished products, which could have taken longer time for Mekanotjänst if they do it manually. The pressure and method applied by ABB made that Mekanotjänst performed better in delivery proportion. This shows that their customers’ strict requirements have a positive effect on them, and in turn they keep the smoothness of the working together.

Utilizing the supply chain in an efficient way would benefit both large enterprises and their suppliers. Since it is difficult for a company to do everything on its own, it should have a strategic way to exploit its supply chain efficiently and outsource certain works. Christopher (2005) has advised that, large companies should consider outsourcing activities to a partner in the supply chain who can provide cost and value advantages. We can observe that the companies that are outsourcing looks for value adding partners, thus suppliers like Mekanotjänst should take advantage of the customer needs and perform better to fit in their
supply chain. Mekanotjänst also has to take the customer requirements as a positive pressure and use it as a driving force to enhance business performance. Even though it is a general assumption that larger customers oppress SMEs in lots of ways, we have observed that depending on the willingness to grow and work with a partner, companies like Mekanotjänst can turn the situation into opportunity and use it as a motivating factor.

**Advantages of technical seminars**

Working closely with customers has a positive impact, especially for SMEs like Mekanotjänst. For instance, when a new project is launched the two parties meet to discuss details about the project in technical seminars and this has advantages in knowledge sharing between the supplier and the customer; the customers will explain the details and through discussion, useful ideas from the two parties can be raised to make production easier, faster and resource efficient. Supporting the importance of two ways discussion, Krause et al., (2000), has discussed that providing feedback can educate or train suppliers how to fix problems that are hurting the suppliers’ performance. This is also the case with Mekanotjänst and its customers; through these discussions, Mekanotjänst benefits more on the facilitating of the production and have a better understanding of the customers’ needs. Even though Mekanotjänst do not have proper training sessions given by their customers, the fact that they are able to work closely and hold technical seminars and group discussions give great advantages on their performance.

**Supplier evaluation**

Supplier evaluation is the fundamental step to evaluate a supplier on the compliance towards company’s requirements and it has a huge positive impact for suppliers in helping them improve their performance. In addition, as Cormican (2007) discussed, one of reasons large scale companies do supplier evaluation is to choose the best suppliers, to reduce the number of suppliers and to keep their supply chain simple. Being one of the competitive suppliers of products for large scale customers, Mekanotjänst is evaluated periodically by its customers. According to our interviews, the evaluation is done in the way that customers will send some delegates and the delegates will spend time in the company observing the overall operation to evaluate and suggest what should be improved and how to improve. Obviously, it helps Mekanotjänst very much to align its functions, to learn from what the large companies do and carry out its business activity in a more mature way. On the other hand, supplier evaluation also create competitive pressure among suppliers, the supplier with lower performance will
no longer exist in the supply chain. Therefore, by making sure the compliance with the customer needs and being a partner who eases the difficulties of its customers, Mekanotjänst can improve its performance through using the requirements in supplier evaluation as criteria to focus on its business activities.

**Supplier development policies**

When evaluating the integration between Mekanotjänst and its customers in the supply chain, we can see several efforts large customers put on Mekanotjänst such as holding technical seminar/training, provision of testing equipment or supplier evaluation activities. These help the company much in improving its performance and capability. However, we do not see the other kinds of deeper integration such as inviting to supplier associations, financial investment, offering incentives, or exchange of personnel/expert. The arm’s length relationship somewhat still exists between them. It should be improved in the future because Mekanotjänst always has difficulties in capital and human resources when it carries out tasks from customers. We suppose that by getting trust and reliability in the relationship, by showing its importance role in the supply chain, Mekanotjänst can time by time request these kinds of support from its customers.

**6.1.3 The involvement in NPD processes**

We have learned from our interviews that Mekanotjänst has taken part on certain projects, particular in cost-cutting projects, for the NPD processes of its customers. Still, this appears to be minor practices compared to the company’s ambition to participate deeper and on a frequent basis by providing better alternatives and value added services. NPD is the key element in competitive success of LEs. Companies today are competing highly on the basis of offering innovative products to the market, so that they will be capable of staying active in the market and take advantages as “first mover”. Mekanotjänst perceived to participate and offer its services accordingly to alleviate this tension of its customers. However, limited systematic approach for taking part in NPD projects of their customers in a more defined and strategic way is observed in Mekanotjänst.

One obvious reason for this constrained performance is that the company does not have a separate department for handling its supply chain with its customers. So far, it manages every deal and contact concerning supply chain related matters in collaboration of production manager, prototyping manager, purchasing manager and marketing manager in the whole process, particular in the beginning to discuss the necessary arrangements and details. As
Bodin (2000) has mentioned, the management structure in SMEs is often lacking specific departments and employees have multi-functional roles, working in many different situations and have less clear assigned responsibility. This is also the case with Mekanotjänst: one person has more than one responsibility. This definitely lowers the creativity and the contribution of the individual on each responsibility compare to person with one task. We observe here not only the difficulty of assigning a separate department or individual for NPD but also the positive effect if the company can make use of the opportunity to be involved deeply and frequently in NPD projects of customers. Therefore, concerning the difficulty in resources, we suggest Mekanotjänst to assign a separated unit responsible for both SCM and NPD related issues. The proposed unit, which is going to be concerned with NPD, has to have a clear assignment of jobs related to facilitating the coordination between the company, suppliers and customers. In addition, it should also take care of details like assessment of products and generating ideas, product design, process design and work in close contact with the prototyping manager; delivering the outcome to customers in an attractive way which goes in line with the customer’s supply chain strategy.

Moreover, even though Mekanotjänst have been involved several times in NPD projects, it needs a continuous integration with different parts of the supply chain. It is especially critical that the design function and the engineering functions be integrated with external organizations like suppliers and corresponding departments of customers. Mekanotjänst is having this in mind and should reformulate its strategy to fit into this integration. Mekanotjänst can make sure it is keeping its long term relationship and being the number one choice of the customer by fulfilling the following conditions for the customer:

- The strong design and manufacturing capability to meet the ever-changing technology and constantly shifting customer demand at a more competitive price.
- Minimizing the time-to-market to bring products to market earlier for its customers.
- Proposing feasible designs and manufacturing methods by investing resources on research and development activities, assessing the market to understand the needs which are demanded in the current market.

6.1.4 The difficulties in cooperation with large enterprises
Most of difficulties that Mekanotjänst confronts are caused by the noticeable limitations of SMEs such as marketing skills, competences and resources. Because of these limitations,
they have to accept control impositions from its large customers and sometimes it causes relatively risky consequences to the company. In this analysis part, we will discuss various kinds of these troubles, finding their possible reasons in term of weak characteristics of SMEs that bring SMEs disadvantages in cooperation with large customers. By this way of analysis, we can suggest possible solutions to overcome these difficulties by strengthening appropriate areas in SMEs’ characteristics.

**Bargaining power in negotiations**

The finding part shows that depending on the scale of Mekanotjänst and the growth of its relationships; the company has to accept different levels of inequitable terms when they sign contracts with large customers. In the start phase of the relationship, agreements include rigorous requirements for Mekanotjänst and limited responsibilities for their customers. The equality will be improved with the increasing of trust and capability of the company. This can be explained that due to SMEs have **weak marketing skills with few customers** (O’Gorman, 2001), so that the dependence on these customers is seriously important for them to survive. The large customer can have multiple suppliers and they are free to choose any supplier at any time, this therefore makes Mekanotjänst incline to accept the preconditions. If they do not follow these unreasonable commitments, they have no choice to choose another customer, to get another purchasing order. On the other hand, due to the **limitation in resources, products and capability** of SMEs (Rothwell & Dodgson, 1994), it restricts Mekanotjänst in enhancing the ability to reach different kinds of customers, and to expand their markets. The large customers understand these problems of Mekanotjänst clearly and they still keep the higher decisions to establish this kind of commitment.

The reason which leads to this difficulty is conventionally weak characteristics of SMEs and it is difficult to overcome in a short term period. Only by continuously enhancing the capability, strengthen their competences, and developing comprehensive marketing strategy, Mekanotjänst can improve their position in relationships with large customers. However, these solutions only can be implemented if SMEs have enough resources. Therefore, SMEs initially should improve their resources by different strategies such as efficient use of existing resources, increasing the cooperation with LEs and other suppliers in using common resources, and expanding the possession of the enterprise. LEs really need high quality suppliers and the growth of Mekanotjänst will profoundly guarantee a win-win relationship between them. In addition, although the company has mentioned that they will always be
smaller than their customers, but this does not necessarily have to imply that Mekanotjänst has to incline for whatever conditions their customers set. The company also needs to be proactive in showing its customers their outstanding roles among other suppliers, what they can perform well, which areas they are competitive to others in order to become the top priority of their customers. Finally, more vital, Mekanotjänst should get better in negotiation skill in order to get agreement terms those benefit for them.

**Barriers to satisfy new demands from customers**

As the finding part illustrated, the globalization and other changing needs of business environment bring the company new challenges. Following their customers, Mekanotjänst has started to deliver their products oversea to far locations with obstacles in logistics, export procedures and currency exchange which the company has not dealt with before. In addition, Mekanotjänst also has to reject customers in sectors (for instance, in medical industry) where it cannot handle the quality certificates it possesses now. This challenge is caused by the higher capital and transaction costs or the lack of economies of experiences as well-known distinctiveness of SMEs (Coviello & McAuley, 1999). On one hand, these limitations prevent Mekanotjänst from accomplishing new tasks in new business environment and bring them severe risks that challenge the survival of their business. On the other hand, its consequence in a long term will drop the performance of Mekanotjänst and its competitiveness in the supplier valuation of large customers.

The urgent solution for these problems can be the recruit of high quality personnel, or the update of new knowledge and know-how to compensate the lack of competences and experiences. However, for a long term business development, Mekanotjänst should construct an efficient learning organization that has enough ability to rapidly update itself new knowledge and competences with the focus on enhancing the strength of human resource and knowledge management processes. It can be the building of internal learning database with regular update, training policies for employees and the exchange of ideas with other partners in meetings.

**Changing of customer’s decisions**

The illustration about the investment of Mekanotjänst in VMI logistics systems with Ericsson in the finding part demonstrates the serious consequences of changes in decisions of LEs with SMEs. Large customers always demand Mekanotjänst the flexibility for increasing volume,
but it will be severe problems for the company if its investments will not be used efficiently. Ensuring the flexibility for large customers is always trouble. Because of the limitation in capital resources (Rothwell & Dodgson, 1994), Mekanotjänst does not have fundamental budgets or strong banking agreements to fund for every financial plan without careful estimation. If the forecasts go wrong, Mekanotjänst will be more vulnerable than LEs and difficult to recover from the injury. Furthermore, SMEs have a reactive nature with changing of business environment, with customer demands (Weathead & Storey, 1996), so that they object to be influenced and follow these control impositions, and as a result, the damage is more serious.

A comprehensive business strategy with the investigation of external business environment and internal factors can help Mekanotjänst in reducing the impact of this problem in terms of identifying how the business environment trend is, which customers should be followed, and which decisions should be done. Besides, Mekanotjänst should change from short term planning to a long term strategies in order to have a consistent guidance for sensitive reactions in day-to-day problems.

6.2 The matching of business strategy and SCM strategies of LEs

6.2.1 Business strategy
Mekanotjänst establishes its coherent business strategy based on forecasts from the external business environment’s demands and evaluations of existing internal ability and competitiveness. The careful recognition of market opportunities and external trends helps the company in establishing appropriate purchasing and marketing strategies. Particularly, the separating of different business sectors and regularly evaluating their demands help the company much in finding which solutions should be done: get more customers in emerging sectors; reduce investment in losing sectors, or which sectors its business should be expanded to. Obviously, it is a good way to keep balance of sale revenue and ensure the development of the business. On the other hand, the understanding of internal skills, competences and limitations benefits them in dealing with customer demands. With this awareness, they are ready to refuse customers that are not suitable for their ability, material resources or its strategic choices. The way Mekanotjänst formulates its strategy seems quite mature and on a high level, and it is different from what is usually said about SMEs as responding to changes of market places (Berry, 1998).
Mekanotjänst also applies the “motorway”- management philosophy as a cornerstone for all business activities with the purpose of enhancing the smoothness of production flow. With the focus on main requirements for a manufacturing company, the production capacity with high priority on customer service and delivery performance is maintained and developed well by dividing the duties of different business activities into various stages of the motorway. Apparently, it is a good way to satisfy high demands of customers in manufacturing industry, and it can be a useful model for other enterprises to learn. Although Mekanotjänst has some areas that should be improved in developing its business strategy, as Robinson and Pearse (1984) mentioned, the application of “motorway” philosophy demonstrates that Mekanotjänst, once again, manages its own business in a structured and sophisticated way, in a high stage of a SME’s development.

The interesting point is the ambition of Mekanotjänst to grow, to become a large enterprise. They are not afraid of losing control or sharing profits, they are brave and ready to face difficulties, for instance, human resource and capital, on the way of developing its business. Definitely, this characteristic is affected by the ambition of owner- CEO, Mr Christer Fransson, who wants to make the business more powerful by developing its operations and the acquisition of workshops and industries in various disciplines.

However, when we consider Mekanotjänst in a closer angle, the way they establish their business strategy still remains some possible weaknesses. If we reflect the statement of Berry (1984) about the coherent long-term business strategy, we can see the lack of analyzing competitive activities in formulating the business strategy. By supervising what the competitors are doing, where they are moving, how they develop their competences, Mekanotjänst can have useful ideas for improving its own business strategy. On the other hand, it is questionable for the ambition of Mekanotjänst to become a large enterprise. As stated by the interviewee, “we set the target of 10% developing in sale revenue each year, and we will become a large enterprise as we reach it”. We suppose that the company should prepare more for its ambition to be a large enterprise, for example how it affects to the expanding of company’s competences and ability, how the company will develop the relationship with its customers and how it attracts talents come and contribute for this development.

6.2.2 Exploiting SCM strategies of LEs

SCM strategies of large enterprise provide possible benefits for Mekanotjänst.
Firstly, the reduction in the number of suppliers that many large customers are doing forces the company to manage their own supply chain more efficient. As a system supplier, the company has to be responsible for its own supply chain. Mekanotjänst has learned from its customer in developing its functions, searching for good supplier, and the involvement of suppliers in new product development processes. It also can learn more to keep the appropriate number of suppliers for each item, reducing the number of suppliers and supplier evaluation activities. As Mekanotjänst realized that it manages its own supply chain worse than its customers, thus referring and learning from customers definitely is the good way to improving the efficiency of its own supply chain.

Secondly, in some cases, customers let Mekanotjänst confront directly with the pressure of competitive market, for instance it can feel the heat from the Ericsson’s competitive rival, Huawei, in cost-cutting pressure. In an optimistic assessment, it is a chance for the company to take advantage of its initiatives, learn from its customer’s rivals, and improve its performance. Mekanotjänst sometimes has suggested its customers in design involvement and incremental improvement ideas. However, Mekanotjänst also may be more active in responding the challenges in market; invest in research and development activities or initiatively discuss with its customers. This is an impressive way to achieve higher reliability in the supply chain of customer that Mekanotjänst can perform well. In addition, as Quayle (2003) pointed out, it can also help the company to identify necessary competences and skills for its development.

Thirdly, the demand of customers on Mekanotjänst to establish manufacturing factories oversea brings the company a good chance to develop. Either acquisition a local business or establishment a new branch abroad, it can accelerate the development of Mekanotjänst. The company is evaluating the opportunities and challenges to have a decisive answer for this increasing demand from its customers. If the company refuses to follow its customers, it not only lose a good chance to expand, but also can lose this opportunity on the hand of its competitors and thus drop its competitive position in the supply chain. We can see that the possible effect is fairly terrible if the company choose not to follow. A wise solution for Mekanotjänst is rapidly updating the knowledge and experiences of international business and globalization in order to have a good preparation and limit possible risks for this important step that the company has limited know-how so far.
7. Conclusion

Comparing and synthesizing the literature review, findings and analysis part for Mekanotjänst case study, we can have a holistic view on the use of SCM practices of LEs and its effect on the performance of Mekanotjänst from its perspective. The conclusion will be presented in the way to have the best direct answers for research questions. As discussed in analysis part, Mekanotjänst is considered as a progressive SME in applying SCM practices and business strategies, thus conclusions will be explained in an overall view of SMEs so that they can be useful for other SMEs as well.

7.1 Improving the performance of SMEs on the supply chain of LEs

7.1.1. The interaction of SMEs and the supply chain of LEs

- Communication: is acknowledged as extremely important in the interaction between suppliers and buyers. The kind of group communication is more popular between partners with the importance of face to face communication. However, low level of information sharing with advanced IT systems reflects the limited trust between partners. The hesitation in applying IT tools in SMEs is caused by the number of customers using and restrictions in resources.

- Supplier evaluation: From SMEs’ point of view, supplier evaluation is an efficient tool of LEs to improve the performance of SMEs. Although it makes the competition among suppliers fiercer, it helps SMEs much in aligning all functions, meeting quality requirements, and working in a better way in order to enhance its performance.

- Training: LEs do not provide a comprehensive training plan. However, the day-to-day communication, providing feedback and technical seminars are helpful methods in terms of knowledge and experience sharing.

- Committed resource investments: Except the providing of testing equipments from LEs in some cases, the financial support, offering incentives or transferring of personnel/expert are not found.

- The involvement in NPD processes: SMEs aware that the success of NPD projects is vital for their customers to compete on the market, thus they have the will to take part in NPD processes of customers. However, this participation is still in the infant stage and lack of strategic approach.
7.1.2 The difficulties in cooperation

- Less bargaining power: The larger company always has higher decision in negotiation, and the final agreements usually include strict requirements for SMEs and limited responsibilities for LEs. The condition only can be improved through step by step develop competences and capabilities; reinforce traditionally weak characteristics of SMEs in order to get higher trust and reliability with customers.

- Barrier to satisfy new demands: Due to the limitation in knowledge and experiences, SMEs seem to be perplexed in confronting new trends of business environment such as globalization, foreign trade, and new technology changing.

- Changing of customer decisions: It is difficult for SMEs to respond the flexibility requirements in terms of volume and implementing new technologies. Because of restricted scale of resources, it causes severe problems for SMEs to adjust its business and recover if the decisions of customers change.

7.1.3 The expectations from SMEs

- Customers should have better coordination among staffs in different sectors involving in projects with SMEs.

- SMEs have a will to be involved earlier in NPD projects, especially in design process with the participation of production specialists to achieve feasible diagram of how a new product can start. It seems to be a good way to contribute in the success of NPD and prepare better for the smoothness of the manufacturing stage.

- It will be better for SMEs to widen and go higher in the relationship with customers to show them what they are able to perform except the current areas, how to develop and cooperate in the future.

- The communication can get closer and more efficient by improving the organization of order flows, information and document sharing between partners.

7.1.4 Suggestions to improve the performance of SMEs in the supply chain of LEs

- Taking customer requirements, supplier evaluation criteria as a positive pressure, a driving force to focus in business strategy in order to enhance SMEs’ performance. By strengthening its competence and capability to achieve these targets, SMEs can get
more bargaining power and go higher in trust and reliability of the relationship with customers.

- Continuously improving the negotiation skill is a good way for Mekanotjänst to get better terms which benefit for the company.

- Be more active in different kinds of interaction with customers. Step by step, SMEs can go deeper in relationship by actively request higher kinds of interaction such as supplier associations, financial investment, offering incentives, or exchange of personnel.

- Construct a separated department or individual responsible for SCM and NPD activities in order to enhance the outcomes of these works. The proposed unit or individual will coordinate the interaction between the company, suppliers and customers. It also coordinates different specialists inside the company, integrate with different external parties to find out the best way of collaboration and deliver the highest performance to customers.

- Establish a long-term business strategy based on the carefully investigating external environment and internal factors. The moving from short-term strategy to long-term strategy will reduce the risks from the changing of its large customers’ decisions.

7.2 The matching between SMEs’ business strategy and SCM strategy of LEs

SMEs can take advantage of customers’ supply chain management strategies in several aspects:

- Being a system supplier, SMEs can learn from its large customers to manage more efficiently its own supply chain. They are experienced in searching good suppliers, suppliers development and supplier evaluation.

- Cooperate with customers to confront directly with the pressure from the market. It helps SMEs update with market trends, prepare necessary internal competences, and take initiative in suggestions for customers.
- Follow and support their large customers, SMEs have a chance to enlarge their business by open new branches oversea. They should update international business knowledge and experiences for this development.

### 7.3 Unique findings and conclusions

This research synthesizes and categorizes the literature in the issues of SMEs and SCM strategies of LEs. Agreed with some previous authors about the lack of literature on this topic, take the look from a SME’s perspective, our research points out and evaluates different kinds of existing interaction, and proposes the ability to improve the performance of SMEs by having a proper business strategy targeting the supply chain of LEs. We also found the critical role of group communication for members of supply chain, positive impacts of LEs on SMEs by pressure on performance, advantages of technical seminar, supplier evaluation and development policies. Furthermore, the research also determined 3 kinds of common difficulties for SMEs in the supply chain of LEs which are bargaining power in negotiation, barriers to satisfy new demands from customers and changing of customers’ decisions.

### 8. Limitation and future research

This thesis aims at understanding the interaction of SMEs and supply chain of LEs from the SMEs’ perspective, but just only one case study in manufacturing industry is investigated. This limits the generalization of findings to different kinds of SMEs and to different sectors. It also misses the chance to improve interview questions with just one case study.

The case study is evaluated as a mature SME in the way it does business as well as the way it cooperates with large customers. Future research needs explorative studies in less grown-up SMEs within the research area. It will add on this research valuable understanding to have a comprehensive view on the interaction of different kinds of SMEs, and possibly different industries, within LEs’ supply chain.
References


Wageningen University, Wageningen, The Netherlands.


Appendix

Appendix A

The prepared interview questions

Group 1: Warming up

- How many customers do you have? Who are your main customers (LEs)? What are you supplying for LEs (customers)?
- What is your position are your responsibilities?
- Is there a separate department responsible for supply chain management?

Group 2: RQ1

- What does your supply chain look like? Do you have different strategy in your supply chain for different products?
- How do you communicate with your customers? How often? Regarding what?
- What does your agreement contains? What does your suppliers mostly demand?
- Do they care more about quality? cost? time?
- How long have you worked together? Do you have a long term contractual agreement?
- Do you think your customer have impact on your performance? if yes how?
- How does your company cooperate with the customer? What kinds of interaction exist ?(training, personnel exchange, investment)
- Does your company have any limitation to join in the supply chain of (customers) LEs such as personnel, technical competences to meet strict quality requirements or finance resource?
- What do you think about this relation? Are you satisfied with it? Is there any difficulty for your company in negotiating with big customers such as low negotiating power, time bargaining or low price-force?
• Does your company have any strategy to build this relation closer, wider, or more effective?

• What kinds of integration do you expect with your big customers to improve your company’s performance in the supply chain?

• Have you ever been involved in new product development (NPD) process of your customer?

• If yes what part did u take or what input did u give?

• Do you get proposal to be involved or do u do it on your own initiative?

• How deep, how frequent, how early were you involved in this process?

• How do you want to continue the involvement of your company in NPD process?

• Do you get any support from your big customers in NPD process such as on human resource, knowledge, investment?

• If no are you ready to involve in such away? In what way do you think you can help?

• Have you ever cooperated with other partners in the supply chain for NPD of your customer?

**Group 3: RQ2**

• How does your company understand business strategy? Is it a bridge to meet internal resource and external environment?

• What do you consider when you formulate your business strategy? What do you prioritize?

• How much do you know about supply chain strategy of your big customers?

• Does your business strategy and supply chain strategy of your customers usually match? If not, how do you want to change in order to match it or make your relationship smooth?