En studie hur inköp med blockorder påverkar ITAB Shop Concept Nässjö AB

Filosofie magisteruppsats inom International Logistics and Supply chain management

Författare: Ingrid Lundberg, Xinghua Sun
Handledare: Susanne Hertz
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A study of the effects of block order purchasing in ITAB Shop Concept Nässjö AB

Master thesis within International Logistics and Supply chain management

Author: Ingrid Lundberg, Xinghua Sun
Tutor: Susanne Hertz

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Master Thesis in International Logistics and Supply Chain Management

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Author: Xinghua Sun, Ingrid Lundberg
Tutor: Susanne Hertz
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Abstract

ITAB Shop Concept Nässjö AB is a major actor in the shop interior decoration market. ITAB has during several years, seen their inventory levels increase and has experienced efficiency problems in their purchasing. Part of ITAB’s problems is their customers’ very unsteady demand and their inability to give ITAB good information on when and where they will open or refurbish their stores. In ITAB’s efforts to improve their purchasing they have decided to move from a system where they exchange single orders with their suppliers, with a given, fixed delivery time, to a system of sending block orders and exchange forecasts. The block order system means that ITAB places an order for the full amount of an article needed during a set period. The suppliers will then deliver the amount needed by ITAB at several occasions specified by ITAB. Delivery schedules and forecast will give the supplier the information as to how much and when to deliver. However, this change has yet to be implemented. The purpose of this study is thus to analyse what effects such a change might have on ITAB and their suppliers.

The study made is based on a qualitative approach. The information used to analyse the problem was acquired through several semi-structured interviews with different managers within ITAB as well as two people within each of the supplier organisations. Five of ITAB’s suppliers were interviewed. The people interviewed in the supplier organisations all belonged to sales, or order department or production planning or vice president. Mapping was used to illustrate the current order flow, purchasing flow, and production flow within ITAB as well as the order flow in the supplier organisations.

The outcome of the interviews was that several of the suppliers showed a very positive attitude to the implementation of the block order system. The cooperation between them and ITAB seemed, according to both parties, to be working well. A good relationship is a good basis to introduce new routines and deepen the relationship. The suppliers believed that a forecast would give them the possibility to improve their production planning as well as their capacity use. However, each supplier set terms for its implementation. One being that the information sharing between the two companies must improve. ITAB also have to take the responsibility as well as ownership of everything they purchase. If this is the case, most suppliers aired a certain promise to be able to store ITAB’s products before delivering and to be able to implement the block order system. However, there need to be further negotiations between ITAB and the suppliers to discuss and settle the exact terms of contract.
It is the authors’ belief that some prerequisites must be fulfilled before ITAB implements the block order system. The information sharing between the two companies must improve. If the forecast shall give the suppliers some benefits, they need to be as accurate as possible. The communication about orders has to be timelier and fit the suppliers lead times better. Today, the suppliers often receive order information from ITAB too late, which causes difficulties. If the suppliers are to trust the forecasts, they must be as accurate as possible. It is the author’s belief that if this is not so the suppliers will increase their inventory costs as well as continue to have difficulties delivering. It is also the author’s belief that the communication between sales and purchasing in ITAB needs to improve so that the forecast can be updated in a timely fashion as well as correctly. More involvement of suppliers as well as purchasing and production within ITAB’s product development phase could help them prepare for changes, and prevent mishaps.
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1 Introduction

In this part of the thesis, we aim to introduce the reader to ITAB Shop Concept Nässjö AB and to illustrate the background and encountered problems as well as state our purpose for this study. In the text here forth, we will refer to ITAB Shop Concept Nässjö AB as merely ITAB or ITAB Nässjö.

1.1 Background

The retail market in Sweden has steadily increased their turnover the last couple of years. The retail market has seen an increase of 7.0% in turnover in November of 2006 compared to same time in 2005 (DN Web issue, 2006). Another new trend occurring within the retail market is that the frequency of interior changes within the retail stores is increasing to keep market interest. This allows for further growth in the store interior decoration market industry (Affärsvärldens homepage, 2006). Thus, the shop concept market is growing steadily every year. One of the major players in this market is ITAB Shop Concept AB group. The ITAB Shop Concept AB group has seen a very positive development during 2005, with an increase in turnover compared to 2004 of 33% (ITAB, Annual report, 2005).

ITAB Shop Concept AB group is the market leader in the Nordic and Baltic states as manufacturer and seller of shop fittings and store equipment. They are also one of the largest suppliers in the central European market (ITAB Annual Report 2005). Their turnover for 2005 was 1269.5 Million Swedish kronor (ITAB Annual Report, 2005) and their market comprises the northern and central Europe (ITAB homepage (A) 2007). The parent company is located in Jönköping, but they have several production facilities in all of the Scandinavian countries, Lithuania, Holland, and in the Czech Republic (ITAB homepage (A) 2007).

In 2002, ITAB Shop Concept moved some of their production units to Nässjö and ITAB Shop Concept Nässjö became a production facility (ITAB homepage (B) 2007). The facility in Nässjö is an independent company that sells customized shop furnishings and equipment as well as manufacturing wooden parts. They keep their own customer base, which includes Kappahl, H&M, Hästens Sängar, and Stadium and they deliver to all Nordic countries, Poland, Slovenia, Great Britain, and the Middle East. The company had a turnover of about 200MsKr in 2005 and has about 95 employees now, of which approximately 43% work in the factory and the rest within management, marketing, purchasing and economics. Today, ITAB shop concept manufacture or assemble roughly 50% of their products at the factory in Nässjö, and purchases 50% ready for use (Petersson, J.Interview. 20060907). Their suppliers are Swedish wood manufacturers, acrylic parts manufacturers, and metal part manufacturers in Sweden and China.

1.2 Problem statement

One of the main business concepts of ITAB is to deliver “complete concepts”, which means design, project management and delivery of complete store interiors. ITAB's business development goal is to be as much involved as possible in the whole lifecycle of the product from concept, design, production, to taking
care of and store old shop fittings/shop decorations for customers (ITAB Annual report, 2005; Fritz, T. Interview. 20061103).

According to Johan Peterson the financial manager at ITAB, their customers have a very seasonal and uneven demand for products, which makes it difficult to plan and schedule the logistics flow within the company. Thus, in last few years ITAB has seen their inventory levels grow and seen large disturbances within their production and purchasing of products. In order to meet the increased demand and improve on customer satisfaction ITAB needs to find a way to lower inventory levels, and make their production and purchasing more efficient. Purchasing plays a strategic role in many firms’ profitability. One reason for this development is that purchasing represents a big percentage of the final product value (Gadde & Håkansson, 1994; van Weele, 2005). Purchased material make up about 50-60% of the total value of products sold in Sweden (Brandes, Lillicreutz, Jonsson, 1998). A one percentage-point saving in purchasing costs can improve the margin on sales by half a point (Swinder & Srivatsa, 2001).

Today, ITAB’s customers send block orders when they purchase a complete “concept”. The block order entails orders for several stores. The stores are opened or redecorated one by one or sometimes all at once depending on the preference of the customer. After deliveries and terms have been negotiated between the customer and the marketing department, the marketing department creates a forecast assessing when there is a demand for certain products. The forecast is distributed through their ERP system to other parts of the organization.

The purchasing of different products is today based on sending a complete order each time when there is a need for that specific item. The order quantities of some of the products are so small, that the total amount aimed to be used for all stores that the customer want to install, has to be purchased at one time. If the order quantity of a product is large enough, ITAB’s purchasers divide the purchases up into 3-4 rounds between the first and last delivery of the customer order. The lead-time for each purchased product is 4-6 weeks depending on product. The lead-time refers to the time from ITAB placing the order to product delivery at ITAB. These orders cannot be moved in time if the demand from ITAB’s customers were to be changed. The “locking” of the orders prohibits ITAB to adjust to changes if delays or problems appear in their customer orders. This can result in wrong amounts being bought and deliveries occur at the wrong time. This in turn cause the inventory to increase, which increases the amount of tied up capital in inventory, and the need for warehouse space. Late deliveries will disrupt the production.

ITAB wishes to make their purchasing more efficient. In the hope of achieving this, they want to change their way of handling orders. They want to start using block orders. The block order is pre-order that entails the total amount of a product that ITAB wishes to buy from the supplier during a negotiated time span, such as half a year. This they will agree upon with the supplier when the deal is negotiated. ITAB will then start sending delivery-schedules every week with call offs which show the supplier the amount and when ITAB expect to have articles at their factory. ITAB will also send a forecast that show the need for the product during the period that the block order will be valid, so that the supplier may foresee their deliveries. ITAB can then get a reasonable amount delivered at a more frequent pace than before, which could result in lower inventory. The orders and the forecasts are meant to be sent over the fax or by e-mail.
in the beginning. ITAB also believes that this will lower the workload for their purchasers by controlling everything from a computer system. ITAB will also install a new computer system, which is to help them improve the administration. This change in purchasing is yet to be realized and will be the first step in the reorganization and adjustments within the purchasing in ITAB. At this moment, they are unsure of how they will make this change or what computer program they will buy.

However, to change is not easy. The employment and implementation of structural, organisational, or other changes will affect firms internally and externally, such as suppliers and customers relations, information systems, production planning, inventory management, and transportation management. Suppliers might react to the firms’ change in an adverse manner and the supplier base and structure might change as well. Such effects of the change might be positive or negative for the success of a firm. Therefore, if a change is pursued it is important, as well as necessary for a firm to be aware of what might happen, and what the effects of change can be.

1.3 Purpose
The purpose of this study is thus to investigate how ITAB and their suppliers may be affected if ITAB changes to block order purchasing.

1.4 Delimitations
Since there is a limited time and scope of the master thesis, we have decided to limit ourselves in the study by only looking at the supplier-ITAB relationship. We will not analyze the relationships between ITAB and customer nor possible forecasting methods even if this might have an affect on the result. We will limit ourselves to interview five suppliers which has been redeemed an appropriate number to interview during the time span that we have for the study. We will not discuss contractual issues, since this is a very large area and will affect question and subjects that might and will be very sensitive and that we feel is something that should only be discussed by the two companies. We will not include an analysis of different transportation between the suppliers and ITAB. We will only discuss it in general if it affects the supplier-ITAB relationship. This is because there are so many solutions to be considered and many aspects that might be of importance that it will be too much to cover in this thesis. We will not discuss supplier selection or supplier evaluation, since the problem is to investigate current suppliers only.

1.5 Disposition of the thesis
The thesis is outlined according to the list below.

1. Introduction
This chapter will be used to present the purpose of this thesis as well as present the background to the problem, the company under study, and the problem that needs to be solved.

2. Frame of reference
This chapter aims to introduce the reader to the topics that are important and will be used to analyse the purpose of the thesis.

3. Methodology

This chapter is aimed to inform the reader how the study was conducted and to illustrate the methods that were used.

4. Empirical study

In this chapter, we will present information about the companies that are involved in the study as well as present the results of the interviews and observations that have been conducted throughout the study.

5. Analysis

In this chapter, we aim to analyse the result using the literature from the frame of reference.

6. Conclusion discussion

In this chapter, we will discuss issues and come to a conclusion, which will answer to the stated purpose.

7. Suggestions for further studies

In this chapter, we will consider issues that can be interesting to look into in the future.
2 Frame of reference

This chapter means to give a deeper understanding of the subjects that will be important to understand in order to analyse the purpose stated above. This information will later be used in the analysis to back-up our reasoning in different matters. Some parts have also been included merely to be informative for the reader that might not have touched upon these subjects before. We believe that changing to block order purchasing by ITAB may have an affect on the suppliers and ITAB's purchasing, production, information transfer and the relationship between and within ITAB and their suppliers. Thus, these parts will be included in the literature study.

2.1 Purchasing

Traditionally, purchasing is simply ‘to buy’ materials the business needs. It is precisely to buy materials of the right quality, at competitive prices, in economic quantities, at the required time, and from reliable sources. Until 1970s, the functions and the activities that purchasing covered got extended. Van Weele (2005) defined contemporary purchasing as:

“the management of the company’s external resources in such a way that the supply of all goods, services, capabilities and knowledge which are necessary for running, maintaining and managing the company’s primary and support activities is secured at the most favourable conditions”

According to above definition, the purchasing function covers specifically activities in the following stages:

- **Decision making**
  The company need to make the decision about what to buy and from whom to buy. In other words, quality and quantities of materials and certain suppliers need to be chosen.

- **Operation**
  With chosen suppliers, the company needs to conduct negotiations to set up a contract and a relationship. Meanwhile, a purchasing routine have to be set up as well.

- **Following up**
  Based on above activities, monitoring and controlling orders are needed. At the same time, suppliers need to be evaluated.

The purchasing process could differ according to the company in different industries. However, it is useful to generalize the individual process in a common model when trying to discover and analyze the problems. In Van Weele (2005) purchasing model, the following steps define the purchasing process: define specification; select supplier; agree on a contract; order; expedite and evaluate.

In the first step, determining the purchase order specifications is to determine the purchasing requirement and to make the ‘make or buy’ decision. The second step, ‘selection of suppliers’ is one of the most important steps in the purchasing process according to Van Weel (2005). One or more suppliers should be selected after evaluating and analyzing the supplier bids and risks. Based on negotiations
with the selected supplier, a purchasing contract or agreement should be drawn up. Several important terms and conditions in the purchasing contract are price and delivery terms, payment terms, penalty clauses and warranty conditions. In the ordering and expediting stage, it is very important to develop efficient ordering routines between the buyer and suppliers. Such routines need to be integrated with the internal management systems of a company, such as, the production planning system and the inventory management system. The last step is following up and evaluating the supplier competitiveness, and innovativeness.

The procurement process requires two major types of investments by the firm: time and information. Time refers to the time spent by purchasers on a certain purchase. Information can be internal information or external information. Examples of the internal information that need to be gathered are customers’ specifications and information that elucidate the implications that the purchase will have for the firm itself. External information concerns information related to the product to be purchased, which may be gathered from other supply chain members (Coyle, Bardi, Langley, 2003). Insufficient investments in either of these two aspects could cause ineffective procurement. Too much investment, for instance by spending too much time in making the purchase, would make the procurement process inefficient as well. Therefore, Coyle et al. (2003) continuously point out that the goal is to invest just enough time and information to satisfy the customers’ needs exactly.

### 2.2 Order process

From the descriptions in literature, the order process can be considered a business process in which the customer demand is translated into production planning and purchasing decisions in order to deliver the right products at the right time to the customers (Welker & de Vries, 2005). Some activities, such as accepting orders, allocating capacity and materials, promising delivery times and prioritizing of orders, are therefore part of the order process. The order process is regarded as one of the core business processes (Welker & de Vries, 2005; Ould, 1995 cited in Welker & de Vries, 2005). Ljungberg (1998) stated that small improvements in the order process could increase the effectiveness and the efficiency of a supply chain to a great extent; furthermore, it will affect a company’s service quality and customer satisfaction positively.

Two other concepts related to the order process, the order entry method and the order lead-time are discussed in literature as well. According to Gunasekaran, Patel, Tirtiroglu (2001), the order entry method determines the way and the extent to which customer specifications are converted into useful information and are passed down along the supply chain. Such information connects all levels of the supply chain and affects the scheduling of all activities (Mason-Jones & Towill, 1997). Order lead-time means the total order cycle time, which refers to the time that elapses between the reception of the customer’s order and the delivery of the goods. Shortening the order cycle time leads to a reduction in the supply chain response time and influences the customer satisfaction level positively (Gunasekaran et al. 2001; Towill, 1997).
2.3 Information flow management

Information is playing a supporting role in efforts to make processes more efficient and effective (Forza, 2001). In a supply chain, different kinds of information need to be well managed not only in availability of information but also in the connectivity. Mismanaged information in terms of being inaccurate or uncoordinated with the corresponding physical flow will result in customer dissatisfaction (Singh, 1996).

Forza (2001) stated that the information exchange that takes place within stable patterns of communication is “information flows”. In the stable patterns of communication, people involved in a certain process continuously exchange information regularly, involving the systematic sending and receiving of specific messages. Davis, Hamilton, Hoffman (1993), pg.63, defined the role of the information flow in an organization (cited in Gülçin, B., 2004):

- “It carries out the treatment of the process in connection with the organizational deals.
- It supports the communication and the relation in each stage of the process.
- It supports the process activities’ information as a resultant of analyses, plans and controls”.

However, according to Davenport, (1997), the right information should be transferred to the right person at the right time (cited in Gülçin, B., 2004). The quality of information flows has an influence on the quality of the material flows. If the information does not arrive on time or is not valid, then it causes an incapable material flow. This will end with customer dissatisfaction. Petersen (1999) measured information quality in terms of if it was current, accurate, complete, compatible or convenient to access information (cited in Forslund & Jonsson, 2007). Lindau & Lumsden (1993) indicated that correct information means the right information in the right condition. Timely information means information received at the right time, to the right receiver and to the right place. Complete information was related to the right quantity (cited in Forslund & Jonsson, 2007). Information has little value if it has poor reliability and validity (Moberg, Cutler, Gross, Speh, 2002). Therefore, a well designed and a well-managed information flow structure should be set up in order to manage and monitor the information flow and secure its validity and reliability. Such structure should improve the information sharing and integration through the whole supply chain. Information sharing can be categorized according to operation areas such as inventory, sales, demand forecasting, order state, and production plan (Lee & Whang, 1999). Transactional data and strategic information need to be exchanged. Very timely, sensitive demand data; forecasting and sales data; inventory data, and delivery information should be shared. Gülçin (2004) proposed a simple generic model based on four steps in helping establishing and managing better information flow structure. These steps identify the critical processes of the enterprise; determine the types of information flows; characterize the various aspects of the information; and measure the value of information flows. To achieve this, firms need to change, set up or adjust their business process, logistics routines, relationships and ways to cooperate within the firms and external firms. Meanwhile, the usage of infor-
information technologies is necessary. Popular information systems used by companies are ERP, MRP, CRM, EDI systems.

However, risks and obstacles exist when it comes to information sharing and integration. Gene (2003) mentioned lack of trust is one of the issues among these obstacles. Suppliers and companies often know too little of what goes on in each other’s company. Trust, commitment and relationship are important issues in order to collaborate efficiently and to implement information sharing and integration. Another obstacle is the costs of technology and availability of expertise. Firms are not sure if they can pay off the investment in technology and human resource (Gülcin, 2004).

2.3.1 Forecasting

A forecast is a tool used by management to make strategic and tactical decisions about a business future (Wadell & Sohal, 1994). The forecast may reflect a long term or short-term prediction of how the different resources such as human, capital or production capacity will be needed. Firms make up forecasts to predict and illustrate the need they believe their customers will have of different products. These forecasts are then used to plan the production, purchases, and other areas of the firm (Wadell & Sohal, 1994). The information within the forecasts will reflect the own company capacity to produce goods, their interpretation of what the customer wants and how much and when, and to incorporate exceptional peaks of demand such as promotions (Coyle et al. 2003). Forecasts may be produced from a variety of different methods, e.g. exponential smoothing, or moving average (Coyle et al. 2003).

It has been well documented that information transfer between members in a supply chain can enhance the performance of the firm (Forslund & Jonsson, 2007). The forecast sent between partners in a supply chain contain important information that needs to have a high quality. As Forslund and Jonsson (2007), pg.91 say “the interpretation and possible use of the forecast depends on the quality of the forecast information, i.e. to what extent the supplier perceives the customer forecast information as fulfilling expectations”. The only party that can really judge if the information is good is the receiving supplier that will use the information (Forslund, 2004).

A forecast will always be a prediction and will be uncertain, but these uncertainties can be limited (Wacker & Lummus, 2002). Mainly three things determine the accuracy of forecasts: the forecast technique, the number of products to be forecasted, and the forecast horizon. The accuracy of the forecast decreases as the time horizon increases (Andries & Gelders, 1995). According to Vollman, Berry, Whybark (1992), the uncertainty of the information in the forecasts can also make the forecasts inadequate, thus making planning haphazard. This usually results in frequent costly revisions to the plan and inventory increases (cited in Wacker & Lummus, 2002). Another problem, discussed by Lee, Padmanabhan, Whang (1997), in Forslund and Jonsson (2007) pg.94, is that “demand variability can be amplified up streams in the supply chain when not sharing accurate forecasts with the supplier”. It is important that the forecast is “explicit, have a stated purpose, include the forecast assumptions, and state its planned use for decision making” (Wacker & Lummus, 2002, pg.1017). However, other authors say that a flawed forecast will not affect the manufacturing goals, or increase cost for the
organization (Wacker & Lummus, 2002). Well run organizations learn to cope with the uncertainty.

Forslund and Jonsson, (2007) found in their study that suppliers that have access to a forecast use less corrective actions, such as sub contracting, part delivery, rescheduling, reservation breaking, overtime, and express transport, than the suppliers with access to forecasts. Suppliers that do not have access to a forecast also use safety stock to a larger extent than suppliers do with access to forecasts. Wadell and Sohal (1994) also points out that it is important when creating a successful forecast that the manger that implements the forecasting must be characterized by three different things: “First, he/she must understand the situation for which the forecast is being prepared and knows what is required for successful decision making in that area. Secondly, the manager must be interested in real improvements in decision making. Thirdly, the manger must understand the forecasting techniques used and their value or use a qualified consultant” (Wadell & Sohal, 1994. p 46).

2.4 Relationship management

The interaction between parties in a supply chain network can vary at great extent. In this literature study, the authors will focus on the supplier–buyer relationships and the affect changes might have on them. The nature of the buyer-supplier relationships varies between being merely a transaction between two parties to a close interaction of different processes between two companies (Lemke, Goffin, Szwejczewski, 2003).

The distinction between the different ways to classify different relationships is in the nature of the interaction between the two parties (Lemke et al. 2003). Many authors have their own classification as to what “closeness” within a relationship means (Lemke et al., 2003). Ford (1984) gave one example of how one can classify “closeness” within a relationship by five different aspects: geographical, time, technological, cultural, and social aspects.

The degree of “closeness” within a relationship can be at a minimum such as in arms-length relationship (Gadde & Håkansson, 1998) where very little social interaction is had between the two parties. The relationship is merely focused on transactions and price is the basis of negotiation. No interest to share neither information nor knowledge between the two parties exist (Saunders, 1997). Partnerships, strategic alliance and joint ventures are all examples of high degree of cooperation between two firms at an increasing degree. The most general term is that of a partnership and is defined by Lambert, Emmelhainz, Gardner (1996), pg.2, as “a tailored business relationship based on mutual trust, openness, shared risk, and shared rewards that yield a competitive advantage, resulting in a business performance greater than would be achieved by the firms individually”.

2.4.1 Why do we need to form relationships

Many authors agree that a relationship between a supplier and a customer are as different as there are companies involved in the process (Lemke et al. 2003) (Webster, 1992) (Gadde & Håkansson, 1998) and that all relationships are to be handled differently and analyzed from their own potential.
Relationships between supplier and customer have very much to do with the dependence and flexibility. Forming close relationships with suppliers will create dependence and lessen the flexibility of the buying firm in many ways (Gadde & Håkansson, 1998). Many times this can limit the ability of a company to choose the best supplier at that moment, due to heavy ties with another (Gadde & Håkansson, 1998). This creates a situation where many companies choose to keep arms-length relationships instead of deepen the relationship. There must be an extra incentive for businesses and a clear understanding that the goals the buying firm wishes to achieve can only be achieved by working closely with their suppliers.

Another important aspect is that of stability and security. Stability is something necessary in order to create a long-term relationship with a supplier (Gadde & Håkansson, 1998). However, stability in turn might not come from forming long-term relationships. The relationship between closeness in a relationship and stability is illustrated in the table 2.1 below.

<table>
<thead>
<tr>
<th>Closeness</th>
<th>Stability</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>High</td>
<td>Complex relationships. Effectiveness of the relationship is achieved by adjustments done by each actor to link the two Parties.</td>
</tr>
<tr>
<td>Low</td>
<td>Low</td>
<td>Simple relationships. Stability makes it possible to create routine. Low degree of closeness gives large potential for negotiation and to change the counter part.</td>
</tr>
<tr>
<td>High</td>
<td>Low</td>
<td>Effectiveness through price pressing strategy. Would be stopped by stability and closeness.</td>
</tr>
<tr>
<td>High</td>
<td>High</td>
<td>No credible solution. High degree of closeness will lead to high degree of stability.</td>
</tr>
</tbody>
</table>

Table 2.1 Relationship between closeness and stability in a relationship adapted from Gadde & Håkansson (1998), pp.58.

2.4.2 Internal aspects within a firm to consider in collaboration

Barrat (2004), points out that before you start projects of collaboration one has to consider the internal collaboration within the company itself. According to Fawcett & Magnan, (2002) very few organizations have achieved complete control and integrated their internal activities in a sufficient manner (cited in Barrat, 2004). Problem issues such as: insufficient integration of internal activities within a company; poor communication between departments; insufficient understanding of the internal processes in the company; low performance of different activities due to lack of influence on external aspects influencing the job itself; lack of use of the same performance measures; and overload and mistrust of information leading to misuse, can prohibit a companies possibility to collaborate with external partners(Barrat, 2004). Barrat (2004), pg.33, continues to say that it is important that the internal integration be “married with external collaboration, in terms of developing closer relationships, integrating processes, and suppliers.” Irland and Bruce (2000) states that that many companies make the mistake of not considering internal plans and activities that will impact on the plans that are made, which often makes them a failure(cited in Barrat,2004).
One important issue to address in collaboration is that of collaborating culture. Barrat (2004) showed a description, which is made up of four important elements that need to be in place in order for it to be a success: a collaborative culture, the corporate culture need to be able to support internal as well as external collaboration. Often the businesses are focused on functional thinking instead of process thinking within a company; external and internal trust, is essential for long-term stability and effective coordination of the supply chain; mutuality, needs to exist between the parties, as well as mutual risk sharing and respect; information exchange, must be good and should reflect the market demand as far up the chain as possible; communication and understanding, between partners is essential, with broad, clear channels of communication. “Broad interfaces between companies are encouraged in order to overcome lack of internal communication” (Barrat, 2004, pg 37) and help create a more innovative environment; openness and honesty is necessary in order to develop sufficient trust, respect, and commitment.

In order to make collaborative planning efforts to be a success there is a need for greater communication and information sharing than there is in a more traditional way of conducting business. The information quality must also increase and become of high quality (Petersen, Ragatz, Monczka, 2005). It is also necessary to manage the change, eliminate boundaries within organization that “restrict the flow of information and the development of trust”(Barrat, 2004,pg.38); to adapt a process thinking; have senior management support; to have joint decision making on forecasts; and use common performance metrics (Barrat, 2004).

A change within an organization can be major or minor, but it will affect the company and its performance in some aspect. To undertake or realize a change within an organization can meet with difficulty if not managed properly. The change can be carried out in four different ways: revolutionary proactive change, revolutionary reactive change, continuous proactive change, or continuous reactive change (Axelsson, Rozemeijer, Wynstra 2005). The buying firm often initiates at proactive changes a greater extent in a supplier-customer relationship than reactive changes. This Axelsson, Rozemeijer, Wynstra (2005), points out can have its problems. It can be difficult to convince the suppliers that the change is urgent and necessary and that large efforts are needed to convince them of this.

### 2.4.3 External collaboration

Collaboration between two companies or departments in a company is a very difficult thing to achieve since it demands great efforts from each participant and is highly based on trust between the two parties. McClellan, (2003) recites some of the most important issues that must be in place for collaborative manufacturing to be successful: trust between parties, mutual agreement on all issues, no abuse of power or entrusted information, performance of both parties according to agreed terms, and that the purpose of the project/collaboration is easily understood and can be easily measured.

Changing the relationship and forming new ways to collaborate can many times meet with difficulties. Supplier can many times show a positive attitude towards a change but when it is to be implemented, they experience difficulties enforcing the change (Gadde & Håkansson, 1998). Many times their organization is not fit to handle the change due to communication difficulties within the different departments in the company; incompetence in some fields; inability to understand
the implications for their own organization; difficulty understanding and analyze cost for the specific change, which in turn can lead to difficulties identifying the positive, as well as, the negative aspects for the firm when the change is enforced. The organizational structure and the different roles individuals have in a relationship can cause them to have adverse responses to the change (Gadde & Håkansson, 1998).

The choice of collaboration between the supplier and the customer very much depend on the power relationship and supplier market structure between them (Cox, 2001). Power within the relationship between two business partners will always be significant as to how the relationship evolves and how it is managed. Depending on the status, the individual company has in the network and supply chain, will influence its possibility to enforce changes and set demands in a relationship. Cox, (2004) points out that in a dyadic exchange between two parties a complete win-win situation will never arise because each company works to maximize their own business profits and all companies will have their own goals to meet. Cox, (2004) continues to say that a win-loose relationship can sometimes be more rewarding than a win-win relationship. It all depends on the outset and the reasons for entering into relationship in question. It all depends on the risk that the inferior party is willing to take when deciding to continue to operate in the same fashion.

2.5 Production

The production process can be described of five different phases: purchasing, production activity control, distribution, quality control, and maintenance (Fogarty, Hoffman, Stonebraker, 1989). They are all essential parts of the production process in order to be able to deliver a product out to a customer. In this part, we will focus on the actual processing part or the production activity control where planned production is executed into products and on the planning of the production.

Uncertainty in the production very much depends on what kind of production system one has established. There are several types of production systems. One way of distinguishing between them is in terms of the customer order decoupling point. Firms can produce-to-stock, assembly-to-order, make-to-order, or engineer-to-order. These different systems reflect where the customer order decoupling point is located in a system. The customer order decoupling point illustrates where the company start basing their demand or production of different products on the facts of customer orders and not on speculation (Wikner & Rudberg, 2002). An actual order represents a certain demand, which will be delivered at a certain point in time. Forecasts on the other hand are very uncertain and based on speculation. Engineer-to-order is a production based only on specific customer orders, a completely customized production. While make-to-stock means that the company produces to and deliver to customers from inventory. This is more uncertain and only based on forecasts (Wikner & Rudberg, 2002).

Customized production is often characterized by low volume, low standardization, and high product variety (Jonsson & Mattson 2000). The batch sizes used here are based on what the customer orders and are often of small quantities. The manufacturing throughput times and the delivery lead-times are often long (Jonsson & Mattson, 2000).
The cost of maintaining production will be different depending on the technology used. Each machine will have a level of output of certain products that constitutes the best operating level for that machine (Fogarty et al. 1989). The best operating level will be to produce a certain product in certain batches that will give the lowest cost per unit (Fogarty et al. 1989) (Coyle et al. 2003). When producing a product on a machine different factors need to be considered when calculating the production cost of an item: purchasing volume, price of raw material, changeover time between different items, technology and scrap costs (Fogarty et al. 1989). The more times one stop and starts machines the more scrap costs and change over costs there will be. It will also increase the workload of individuals in the production as well as take away valuable production time. Usually, the larger the batch the lower the cost, but there is a specific volume where there might occur inefficiencies of scale (Fogarty et al. 1989). There is also always a certain minimum amount of a product that you need to produce for it to be economical. The amount you can produce per unit is a measure of the capacity of a production. The capacity of production is defined as the highest amount that can be produced by an operator, machine, workstation, factory, or organisation over a stated period (Fogarty et al. 1989).

The production is also very much dependent on planning. Planning can be defined as the process of deciding how we use “all resources available that ultimately provide product to end customers: manufacturing resources, labour, supplier commitments, multiple levels of inventories, transportation, warehousing facilities” (Schutt, J. 2004, pg7). These plans can be long, medium or short range. Usually, the longer the range of the plan the less detailed the plan will be. Factors that are important to consider when planning are cost of materials and components parts, skills and numbers of workers, plant capacity and equipment technology. Each is to be considered and related to estimates of demand by major product or product families (Fogarty et al. 1989). The short term planning is usually concerned with a detailed plan of individual items where specific order times and production requirements are considered (Jonsson & Mattson 2000) (Fogarty et al. 1989). These plans are also based on customer orders or forecasts (Fogarty et al. 1989). Capacity requirements planning, is one such type of planning, which determines the need and availability of capacity resources such as equipment and personnel in the production (Fogarty et al. 1989).

To make a plan a success it is important that a business can make their product reliably i.e. make quality products most of the time. However, if planning is not performed well the effects will be bad customer service due to fault in delivery, too much or too little inventory, cause high manufacturing or logistics costs, bad utilisation of labour, capacity changes and frequent changes in plans (Schutt, J. 2004). A good forecast is a critical asset in the planning process (Schutt, J. 2004). A good plan can also cause better delivery in raw material and components in the amount needed and close to the actual time of production. This can reduce inventory and materials handlings cost as well as improve on delivery out to customer (Fogarty et al. 1989) Thus, a plan that is well executed will improve on a company performance.

Several factors affect the variability of material flow through the production, such as machine breakdowns, synchronization problems, customer order changes, and material availability (Andries & Gelders, 1995). Customer order changes and material availability are some of the most important factors to be considered. Changes in customer orders can give highly disturbing effects when changes are
made during the production phase of the order. It is also very important to have the materials needed for manufacturing in place before the actual producing starts (Andries & Gelders, 1995) or heavy rescheduling and delays will follow.

Commonly used measurements of these factors and measurements of production efficiency are: “1. cost- maintaining production cost at a acceptable level; 2. Quality- Product fitness for use and performance to specification; 3. Flexibility- Responsiveness to product design modifications or changes in output volume, 4. Delivery- Production and shipment of orders in prescribed manner” (Fogarty et al. 1989 p90).

2.6 Inventory and warehousing

In a supply chain, each member is responsible for his or her inbound and outbound logistics. This means they carry inventory for both raw materials/components as well as for the final goods. The demand for a product originates from the end customer in a supply chain and they represent the actual demand that should be considered by all parties in the chain (Coyle et al., 2003).

The inventory of a company refers to the amount of different products stored within the company. All products in inventory have a certain worth. A product's worth depends on the size, volume, material and if the product is refined. The larger or more voluminous a product is the more space it will demand for storage. That means the company has to pay for a larger storage area for a voluminous product than they need to pay for a small product. The development of a product and refinement of it result in a greater value, which also makes it more costly to store (Cooper & Pagh 1998). Since each product has a worth, a great deal of a company's assets will be locked up in inventory. It is important for a company to free up capital, i.e. have available cash, which can be used for further investments and managing payment flow. An inefficient inventory management can cause an unnecessary build up of inventory which ties capital within the firm; cause unsatisfying turn on inventory which can increase the number of obsolete products that need to be discarded; and difficulty to maintain good relationships between the supplier and customer, where conflicts of interest often occur (Coyle et al. 2003). According to Coyle et al. (2003), inventory also means extra handling in the warehouse and increases the need for transport of goods within a warehouse.

Inventory accumulates for many different reasons. There are mainly four kinds of inventory: cycle stock, safety stock, work-in-progress stock, and seasonal stock.

- Seasonal stock occurs for such products that have high or low demand during certain periods of the year, such as ice cream (summer season). This will often force companies to start producing ahead of time and increase stock to cover these demand peaks because they do not have the capacity to produce it at the demand point.
- Work in progress stock is such that is stored alongside the assembly lines where it is waiting to be used.
- Safety stock is used to account for all adverse changes that might occur such as a stop in a production line, or faulty delivery of components from the suppliers. This secures deliveries and minimizes stock outs that cost money and sometimes customers.
The last one is the cycle stock, which occurs for mainly three reasons. Firstly, production wants to produce in batches, which is more economical for them. Secondly, the customers want to order or have to order a certain quantity in order to fill up full truck load to minimize transportation cost. Thirdly, because customers are given discounts for ordering a greater quantity then is really needed by the customer at the time (Coyle et al., 2003).

The supply of products is often too slow to react to demand trends, which creates an inflexible system. This allows for more stock outs and keeping of obsolete products in inventory (Sabbath, 1998).

The amount of inventory kept in a company depends on many factors as has been discussed above. The handling of inventory can also and will extend outside the own firm and affect your business partner. These factors can be enhanced if the information regarding orders and forecasts are incorrect and does not reflect the true demand. The idea is that if the supplier receives the real demand data from the customer as well as production, promotion schedules and other information that might have an impact on the demand for a product, the supplier can base their decisions and forecasting on the real demand for the product and not the “estimated” demand. They can also anticipate changes more easily and will have more time to react to diversities in demand as well as plan how to use their own production capacity better. This will give them more control over how to use their resources and to whom they should supply. This will lower the need for safety stock (Sandberg, 2005; Kumar & Kumar, 2003).

The increased inventory levels within a company may also affect the amount of work done by the warehouse staff. It is important to minimize the number of times staff has to handle the goods (Coyle et al. 2003). Large amounts of goods might need moving and restoring in order to make as much space for other products as possible.

One way to combat inventory is to receive more frequent, timely deliveries of smaller amounts of different items from the suppliers. However, the savings in inventory and improvements in efficiency and customer service must be high enough to cover the extra transport costs (Pohlen & Goldsby, 2003) (Murphy, 2004).

The transportation system is the physical link connecting a company’s suppliers, customers, warehouses and factories in a logistics supply chain (Coyle et al., 2003).

According to Thomas and Griffin (1996), the single largest cost component of logistics is transportation cost, often comprising half of the total logistics cost. Rushoton and Oxley (1991) show that trucking costs are always the highest among all costs of total distribution cost. In a physical distribution channel, the total transportation cost can be treated as trucking cost plus local delivery cost (cited in Caputo & Mininno, 1996).
2.7 Organizational change

Organizational change is very difficult to command successfully, many times, it fails due to lack of management (Farias & Johnsson 2000). It is also important that the manager/CEO has a clear strategy and that this is conveyed to everybody within as well as outside the company. It is important that co-workers within the company agree to the change and does not see it as a threat and a problem. Collaboration must be a win-win situation for all parties (McClellan, 2003) (Kumar & Kumar, 2003).

The management need to be involved and show that the change process has priority and there is in depth monitoring of the change (Davenport & Beck, 2000). Other factors that are important when considering organisational change are that you need to make the right change for your company that has a clear purpose that fits your own organisation. They should also fit the current corporate culture and its energy so that the organisation and its people will be able to accept and carry it out. It is also important that the change process does not become too complicated; some clear, prioritized goals should be set up so that it is easily followed and monitored or it can cause major failure in the change process. If a change is to be successful within an organisation it is also important that it has sufficient acceptance by everyone involved otherwise employees who disagree to the project can cause huge difficulties in the change process (Bruch, Gerber, Maier, 2005).

2.8 Summary of frame of reference

Besides acquisition of the materials a business needs, purchasing also covers decision making and following up, like suppliers selection, evaluation, establishment of working routines and contracts, monitor and control orders. One needs to invest time and information in the procurement process as well. However, the goal is to invest just enough time and information. Otherwise, it will affect the efficiency of purchasing process.

The order process can be considered a business process in which customer demand is translated into production planning and purchasing decisions in order to deliver the right products at the right time to the customers. Order entry method and order lead-time have significant impacts in improvement of performance of a supply chain.

Information plays a vital role in improvement of process efficiency. However, the prerequisites of information flow in improvement of supply chain performance are information sharing, integration, and high quality information. Otherwise, an unqualified information flow would cause an incapable material flow and end up with the customer dissatisfaction. Therefore, a generic model was proposed in helping establishing and managing better information flow structure. Meanwhile, some important issues, which are trust, commitment, collaboration, communication, and relationships, cannot be omitted when handling information flow. Forecasting is used to plan the production, purchases, and other areas of the firm. Thus, the quality of forecasts transferred between parties in the supply chain is especially important for suppliers and determines the quality of decision making of different logistics activities.
A relationship can be classified by closeness in arms-length, partnership, strategic alliance and joint ventures. To form close buyer-supplier relationship could create dependence and lessen the flexibility of the buying firm. In addition, some firms need stability and security from the relationship with suppliers. However, when considering development of close relationship with suppliers, firms have to enhance both internal and external collaboration. Collaborating culture, communication, and information sharing should be highlighted in internal collaboration. In external collaboration, trust, mutual agreement, purposes are important issues. Change could be difficult for suppliers. The choice of collaboration with suppliers depends on power relationship and supplier market structure between them.

There are different production systems reflecting the amount of uncertainty that can occur in the customer demand. When producing, some factors need to be considered in order to make goods at the lowest cost per unit. Meanwhile, to make a production plan a success it is important that the company is able to produce their products reliably. A good forecast is a critical asset in the planning process.

Inventory tie up a firms’ capital. Therefore, it is important to have an efficiency inventory management for the firm, which could in turn improve performance of warehousing and transportation. However, more importantly, is that efficient inventory management increases the firm’s ability to respond swiftly to changes in customer demand.
3 Method

In this chapter, we aim to list and explain the methods we have chosen to conduct our research.

3.1 Qualitative study

There are mainly two different methods to approach an investigative study, the qualitative and the quantitative way (Ghauri & Grönhaug, 2002). Collecting statistical information to test and verify a hypothesis is generally the basis of quantitative methods (Ghauri & Grönhaug, 2002). This method thus uses data collection techniques that generates or uses numerical data (Saunders, Lewis, and Thornhill 2007). When the understanding of a particular situation is the object of the study, a qualitative study is used. A qualitative study are many times based on data collected from interviews and observations, that are in turn interpreted and analysed by the researcher to arrive at some findings or theories (Ghauri & Grönhaug, 2002). It thus focuses on using data collection techniques that generates non-numerical data (Saunders et al. 2007). The qualitative approach is good to apply to unstructured problems and require in-depth insight (Ghauri & Grönhaug, 2002).

The authors of this study find that the best way to approach the research problem at hand is to apply qualitative methods. The purpose requires investigating relations, and procedures between people within ITAB, as well as, between suppliers and ITAB. This can only be accomplished through interviews and conversations with members within ITAB as well as with the suppliers. The authors feel that as a first step within this study it is important to comprehend what issues are important in the ITAB – supplier relationship. Another possible approach to this study of more quantitative character could be to issue a questionnaire for all suppliers. The authors of this thesis believe that it is important to understand the fundamental issues in the relationship before using this approach. To conduct some in depth interviews first will accomplish this best. The time span for the project does not allow conducting both.

3.1.1 Deductive or inductive approach

The difference between an inductive and a deductive approach is whether you choose to start your analysis and your research problem based on the literature in this field(deductive) or if you choose to collect your data and from this find appropriate literature to analyse them(inductive) (Saunders et al. 2007).

According to Saunders et al. (2007), the deductive approach can be good way to start your work, which will allow you to increase your own body of knowledge within the area studied. This in turn will help you connect your own study in the subject area to previous literature.

In this study, the authors applied and used a deductive approach analysis, but also included certain inductive measures. Initially, due to the limited knowledge of both authors, a variety of literature topics was studied that was thought to have importance to the project and to increase the authors understanding. Then, the literature study was completed after the interviews with suppliers and ITAB
in order to add or eliminate certain topics and issues that could be of importance. After the interviews, there would be a better understanding of what topics and information really was important for the analysis.

3.1.2 Choice of topic
Both authors of this thesis had an interest to base the thesis on a company problem. The company was chosen searching possible candidates within the Jönköping and Nässjö area. ITAB had expressed an interest in master thesis work on their webpage. The authors found ITAB to be involved in an interesting area of business and contacted them. ITAB agreed to a project even though they did not have a selected formulated problem at the time. ITAB had many issues that they were interested in exploring and after a brief discussion, an agreement was reached. ITAB had just hired Magnus Holm as logistics and purchasing manager in order to deal with several issues within this area. The intent was that ITAB was going to reorganise and change their way of purchasing. Both authors were interested in the area of purchasing and had the ambition to write something connected to this topic. Parallel to the study of the literature, several interviews with four employees at ITAB was conducted. During these interviews, the authors found that the research topic had to be adjusted as well as the selection of supplier to be interviewed.

3.1.3 Choice of respondent
Sample selection according to Saunders et al. (2007), can be made by two different approaches: probability or non-probability sampling. Probability selection demands a rather large population (ca 50). These should be selected in a statistical random selection. Non-probability sampling is more appropriate for small in depth studies where the extent of a problem is not measured. Saunders et al. (2007), also points out that this selection can be made by quota sampling, purposive sampling, snowball sampling, or by self-selection sampling, and convenience techniques. Patton, (2002) states that choosing a specific sample size will not be the major determinant of a study’s validity, credibility, or if it is understandable. Instead, the way data is collected and analyzed will affect the outcome of the study. It will also reflect the resources available to conduct the study (used in Saunders et al. 2007).

For this study, it was decided that the period would allow about five suppliers to be interviewed. The authors decided to use the purposive sampling. ITAB and the authors selected the five suppliers after a discussion about appropriate suppliers. It was decided that they were to be selected from three major selection criteria: first it was decided to use Swedish suppliers, which are easier to access and interview. Secondly, the suppliers are a selection of some of the largest suppliers that ITAB has as well as a few smaller ones. They all supply a great number of articles and some supply rather large volumes, which would ensure that their response would affect ITAB. Thirdly, most suppliers have been used for several years and ITAB has the intention to keep these suppliers even in the near and distant future. During the discussion of a selection, it became clear that ITAB is currently increasing their purchases from China. This means they have already decided to exchange certain suppliers, thus eliminating these from the list of suitable suppliers. The suppliers also represent several product differences. Some deliver directly to assembly, some are delivered ready-made to stores and some
goes directly to production. Thus, suppliers with products used in all stages of ITAB’s production were selected. The small sample will not allow for a statistical representation so the most frequently used suppliers are used.

The aim was to choose respondents in the interviews that were responsible for logistics and sales in order to get two different views on the subject.

3.1.4 Access and validity issues

Gaining access to respondents can many times be difficult and cause discussions about the validity of the response of the respondents (Saunders et al. 2007). An external researcher could have some difficulties gaining access to different organizations. Thus, a student will often have to rely on the goodwill of the participants (Saunders et al. 2007). Since the choice has been to consider five selected suppliers it was of great importance that these wanted to participate and feel that this is a worthwhile project.

3.1.5 Interview

The interview is regarded as the most frequently used and good method of data collection to eliciting opinions on complex and sensitive issues in the social sciences (van der Zouven, 2001; Hannabuss, 1996). From interviews, we try to understand the attitudes, behaviours, decisions, and procedures for target issues from the respondents’ own perspective.

An interview can be carried out via mail, telephone or in person. Three common ways to classify interviews according to Ghauri & Grönhaug (2005) are survey research, structured interviews, or unstructured interviews. Semi-structured interviews are discussed in literature as well. Structured interviews mean that the interviewer asks all the respondents the same series of pre-established questions with a limited set of response categories. In unstructured interviews, the respondents are given the open questions on a particular issue and respondents are able to answer the questions subjectively according to their own understanding and free attitude. Semi-structured interviews are a kind of mixture between above two types of interviews. For some questions, respondents just need answer yes or no or choose the short certain answers from a few given options. For some other questions, respondents can give the answers without limits. The choice of interview type depends on the purpose of research and characteristics of research topics.

Procedure

In order to conduct an efficient interview and gain reliable information, it is necessary to conduct a thorough preparation and set up an interview plan including the steps, the techniques and the issues that have to be addressed in the interview. However, the interview environment is different as well as the interviewees. There are no uniform rules for a successful interview. To follow the general guidelines and to employ individual steps and techniques would be a good choice.

There are some guidelines and techniques based on previous research (Hannabuss, 1996):
• **Informing about the purpose and background**

The first thing a respondent needs to be aware of is what the research is about, what the purpose of the research is, why they have been selected for an interview, and how their replies will be treated. Meanwhile, the interviewer should also assure the respondent about confidentiality and confirm the way of recording.

• **Establishing favourable relationship and congenial atmosphere**

A favourable relationship with the respondents and a congenial atmosphere in the interviews lead to efficient interviews without any disturbances. In order to achieve this, it is necessary for the interviewer to know the respondent, his background, values, expectations, experience, and sometimes habits. The interviewer could try to get such information from respondent’s friends, colleagues, or relative articles before the interview. The interviewer can also start the interview with some easy and interesting ‘small talk’, which help shorten the distance between the interviewer and the respondents and make the respondents open their mind to you.

• **Conversation skills**

A face-to-face interview firstly is a conversation. Therefore, keeping the conversation going is the basic principle. Thus, some conversation skills are needed to conduct a good interview. It is important to explore each issue before moving on to the next, although tactics may dictate your coming back to unanswered questions later. The interviewer must see him/herself as an active instrument in the conversation, but also try to be non-directive, retain a critical awareness of their own hidden assumptions, and avoid overlong, leading, or biased questions (Ratcliffe, 2002). Some techniques also used in research interviews are related to body language and proxemics (i.e. personal space and relative positions of players), such as, dress (formal or not), body posture, seating arrangements, eye contact and gestures.

• **Recording**

Making notes and tape recordings are two common methods used in the interview. The advantage of making notes is that, with the interview fresh in the researcher’s memory, notes can be put together clearly, bringing out the major features. Disadvantages include memory lapses, inability to interpret notes, and danger of imposing a false coherence or meaning on the material. However, tape-recording has its problems as well since some respondents can be sensitive about tape-recording and some topics might not be allowed to be recorded on tape. The interviewer could use both according to the individual situation.

**Risks**

A fruitful interview is very important for the research. However, a few risks could possibly lead to the failure of an interview.

• **Misleading**

How the questions are asked could result in misleading, which is to put your own ideas into the respondents mind or let them feel what you are expecting them to answers. Therefore, the questionnaire needs to be carefully constructed
Method

in order to avoid leading the respondents with words and sentences that could lead in an implicated direction. Glesne & Pleshkin (1992) suggest to test the questions live beforehand (in a pilot) to make sure that they are clear, relevant, and in the best order. Some of the questions might be devised as if you, the researcher, are just a specialized kind of learner, with naïve innocence wanting the respondent to explain (cited in Hannabuss, 1996).

- **Unreachable and rejection**
  Respondents need to be approached. Practical problems may make this difficult - people are busy and may be suspicious. They might reject your request for an interview, terminate the interview, or hold themselves back when answering the questions (Hannabuss, 1996). Therefore, it becomes necessary to convince them to participate.

- **Organizing information**
  When having an unstructured and semi-structured interview with open questions, the answers could be discursive and widely differentiated. Therefore, the information collected from the interview need to be effectively organized and categorized in order to discover and distil significant facts that contribute to the research. Meanwhile, the emotion expressions and individual behaviours from respondents like hesitations, excitement, distractions, pause and silences need to be correctly translated to the clear information about attitude and answers from the questions (Hannabuss, 1996). However, the emotion expression is individual and understanding of it can be subjective as well.

3.1.6 **Interview design**

In order to fulfil the purpose of the research, the researchers need to not only be aware of the specific processes, decisions and situations, but also give respondents possibilities and space to express their own thoughts and emotions. Therefore, face-to-face semi-structured interviews with ITAB and chosen suppliers were conducted. The questionnaires were carefully constructed aiming to understand current logistics flows and possible effects after the change within ITAB and chosen suppliers from respondents’ point of view. Since target respondents are all Swedish with differences in comprehension and speech of the English language, the researchers conducted interviews in Swedish or English according to respondent’s preference in order to avoid the misunderstanding due to language.

In order to understand the business processes and the current situation of ITAB, the authors had four interviews with managers within ITAB. These managers in ITAB are Magnus Holm, logistics manager; John Petersson financial manager; Jan Odquist, head purchaser and Torbjörn Fritz, the production manager. In the interviews, managers answered questions from the authors and showed the authors the warehouse and production process in ITAB. Interview questions are shown in the appendix 3. Moreover, the secondary information of ITAB is gathered from ITAB’s annual report published on ITAB’s webpage.

In order to establish credibility and be sure of gaining access to these suppliers, the choice was that ITAB established the first contact with chosen suppliers. Meanwhile, supplier contact information was received from ITAB’s purchasing manager. Contact persons were initially approached by phone and emails, through which the purpose, research issue and interview questions were stated
and an appropriate time for an interview was agreed upon with four suppliers. One of suppliers refused to have an interview because they were too busy and they had already talked to ITAB about using the block order. Thus, they saw no need to do so again. However, after four interviews, it was clear that all the interviewed suppliers were facing the same dilemmas concerning the block order. Thus, the answers given were very similar. Therefore, it was suggested to ITAB to recommend a smaller supplier, which might face a different situation. Finally, interviews with five suppliers and nine respondents were conducted. The authors transcribed the recording of the interviews in order to avoid the misunderstanding and organize interview information better.

The questions tried to eliminate, if possible, parts/issues that deal with contractual discussions that should be held by ITAB and not us. The questions were to be posed in a more general manner trying to understand the big picture. In order to avoid information missing in the interviews; tape recording were used under the permission of respondents.

### 3.2 Mapping

A supply chain as well as a company works along a determined process. To understand and be able to analyse the structure and the flow of materials, finances, and information between and within an existing organisation, mapping is used. A map is an illustration of the actual environment (Gardner & Cooper, 2003). A map is an illustration of different, general, or very specific, activities or processes that take place in a sequence within a chain or a business. Gardner & Cooper (2003) states that a map drawn well can enhance the strategic planning improve information transfer, help redesign the supply chain and processes, clarify channel dynamics, and enable an improved monitoring of different processes and flows. The three main differences between different maps are orientation, level of detail, and purpose (Gardner & Cooper, 2003).

In this thesis, the focus will be on one kind of mapping: process activity mapping. Process activity mapping is used to illustrate flows within a company, aiming to analyses each step in detail in order to recognize problem areas and is part of the seven-value stream mapping tools (Hines & Rich, 1997). The process activity maps are used as a way to identify problem areas and to illustrate how changes can be made within that studied process. Waste is such factors that affect the performance of a certain process within a firm or between several firms. The waste is categorised in seven types: overproduction, waiting, transportation, inappropriate processing, unnecessary inventory, unnecessary motion, and defects (Hines & Rich, 1997).

To conduct process activity mapping you have to break down a certain process within a company into activities and steps. “Every step includes information to characterise the system being mapped” (Gardner & Cooper, 2003, pg45). You base the process activity mapping on mainly two steps: make a preliminary analysis of the process and the make a detailed recording of all steps that are included in the process (Hines & Rich, 1997). When conducting this analysis certain issues should be considered: to identify waste, se if this can be corrected and consider possible improvements.

We choose to use this method as it was considered most appropriate for our study. Our purpose of mapping was not to make a full-blown analysis of differ-
Method

ent wastes within the system, but merely to identify different tasks, illustrate the process and from there gain a better understanding of how different key processes within ITAB as well as the suppliers worked. We mapped the complete flow within ITAB from customer to delivery, to understand how the processes within the company were interconnected. Then, the purchasing process as well as the production process was mapped to understand how the supply of material would affect the organisation. In order to understand how different activities were interconnected within the purchasing today and how they would be affected by introducing block order purchasing the purchasing process was mapped as well. Likewise, the order flow within the suppliers was mapped to acquire a better understanding of their current activities. The maps are based on the information we got from asking members within purchasing, sales/order management, and production management as to how these processes worked. Then we also went through the production to get a full explanation of how it worked. A map of the order fulfilment flow that was presented to us was also used as a basis.

There is no true convention as how to illustrate the different flows, and tasks within a process. There are many ways do so (Gardner & Cooper, 2003). The convention we choose is thus:

- Represents an activity
- Indicates the direction to the next activity. Illustrate sequence
- Indicates another external actor

3.3 Criticism of method

Qualitative studies pose many threats to the reliability. It is important that the data that you produce is reliable, i.e. they will be consistent and reproducible by someone else (Saunder et al. 2007). Four main errors can be seen: subject or participant error, subject or participant bias, observer error, and observer bias (Robson, 2002). The problem in interviews are that the participant can be influenced by his or her mood about work that day, fear of saying things that might not be approved of by their boss and thus do not state what they really think is the answer. This has to be considered when posing questions and analysing the data. If there is more than one researcher involved in the interviewing and analysing of the data, there is also a possibility that each person have their own way of asking questions as well as interpreting them. Thus, it is important to have standardised questions and agreement on the analysis (Saunder et al. 2007).

In this master thesis, there are two researchers, who are from different cultures and background. Before interviewing, an agreement on the questions that were to be discussed during interviews was reached. The attempt was also that one person conducted each interview. The other was to take notes and fill in if the other interviewer missed a question.
Mainly four types of validity issues are applicable to qualitative research: descriptive, interpretative, theoretical, and generalizing (Ghauri & Grönhaug, 2002). They refer to if the results have been described properly, if the interpretation is correct and not flawed; is the theory that we use to explain issues in the analysis true and are the results applicable to only one case or overall (Ghauri & Grönhaug, 2002).

The answerers acquired in qualitative studies can many times be “coloured” by aspects that are not controllable by the interviewer. The participants mind and performance can many times be affected by past events that are connected to the research or their attitude and understanding towards the research might be affected by for example fear of loosing their job. In addition, there will be an affect if there are current changes that will sidetrack from what has been seen before as standard routine (Robson, 2002).

This we recognize can cause several problems as to validity and reliability of the answers. This method will force these suppliers in some ways to participate, which might reflect in their answers. The involvement of ITAB can also cause them to be more cautious as to what they answer than they would be if the authors had acted completely independently.
4 Empirical part

First, a more detailed description of ITAB’s business, results from the interviews conducted with different actors within ITAB and the suppliers will be presented as well as brief introduction to each supplier.

4.1 ITAB Shop Concept AB in Nässjö

That information was gathered from interviews with managers in ITAB on the 7th of September and secondary material from ITAB. The Interviews were held with Magnus Holm, logistics manager; John Petersson financial manager; Jan Odquist, head purchaser and Torbjörn Fritz, the production manager.

4.1.1 The Current System

Structure of the purchasing department

Four full time employees and one half time employee, work in the purchasing department at ITAB today. Earlier this summer a logistics and purchase manager was also hired. Two people are senior purchasers and has the responsibility to assess new suppliers if need be. They manage the contracting with suppliers and handle the negotiations, decide upon packaging terms and so forth. They also handle contacts with the marketing department. They divide the customers in between them. Both have knowledge of the others customers and all current projects. They also help in the day-to-day business. The other two purchasers help administer the day-to-day business. Make orders, confirm orders, and check deliveries. ITAB divides the purchase of different products into product categories: products purchased outside of Sweden, metal, glass/plastic and wooden/semi-finished goods. Currently, the production handles the day-to-day purchases of wooden boards. The purchasing department is only helping in negotiating the overall contract with the suppliers. This will change and the purchasing department will start conducting the day to day ordering of the products in the future. Each purchaser has their own material to handle e.g., glass.

ITAB has also begun purchasing from China. The head purchasers are responsible for this. They are both specialized in their own material, but have knowledge of the others as well. This is to secure that all matters can be attended to even if one person is away from work.

The purchasers select the suppliers from Index listed companies, advertisements, old connections, exhibitions, the phone book, or the internet.

When assessing a supplier ITAB look at what kind of customers the potential supplier has at present. They then send a test enquiry of price. If this is of interest then they go to visit the supplier to see how they operate. The purchaser chooses the supplier if he thinks the supplier will perform well. They rely on their experience to make that choice. If the supplier is chosen, they start of by making a test order and buy small amounts during the first year. The supplier is thus tested during a year in their delivery performance and quality. If they do well, the volumes ITAB purchases can increase.
The purchase department has no regular connection/visits with the Swedish suppliers. They also have no real function that works on selecting and evaluating suppliers. There is too little time to do so. They do not only select a supplier on price but it has to be reasonable. The total or final cost matters. The lead-time from order to delivery must be short enough; the quality must be good and maintained throughout, as well as deliveries must be on time.

**Current purchase order flow**

ITAB communicates all their orders through fax, which are made in their ERP system. They only send block orders for products that are urgently needed. Otherwise, their small orders are ordered at one time before the first store is to be decorated. Then, the rest is kept in inventory until the next installation is made. Large orders are ordered in three to four instances, in order to prevent keeping to much in stock.

The purchasing department is not involved at a great extent when smaller contracts are negotiated. In large contracts, they are part of the discussions before accepting and settling a deal, for the total concept. They give input on issues such as price, possible products, and delivery times.

ITAB buys certain items very late in the development of the concept. This might be due to a change in customer preference. The short time span does not allow for much negotiating with suppliers. You have to find a possible supplier and take the price. They only use suppliers that have been used previously for these kinds of purchases. No new suppliers are accepted this way.

The volume of most products is too small to purchase for each shop. This means that several shop orders need to be bundled together in one purchase. Large purchases are made in 3-4 instalments in order to prevent stock building up in ITAB's warehouse. ITAB buys mostly customized products. Some items are purchased in bulk. Sometimes ITAB also benefits from their customers decision to use different suppliers that supplies shop concepts. Sometimes ITAB can use the contacts that their competitors have and purchase from the same suppliers as they have. This lowers the price due to the supplier can produce in larger volumes. There is sometimes a competition between suppliers as to who can do better. H&M is a customer with many supplier of the same shop concept.

The deliveries, for certain customers', are spread out over time (H&M); and some customers want everything delivered at one time (Kappahl). The lead-time between a placed block order to final assembly by ITAB, in the shop, is shorter, 10 weeks, than if it is delivered to a named collection point where ITAB is not responsible for installation. Then, the lead-time is 12 weeks. ITAB's suppliers have lead-time of 4-6 weeks.

The lifecycle of different products is 1-5 years. The storage time for Chinese products will increase with ca 2-3 weeks, compared to purchase items from Sweden. One season is 6 months long.
Empirical part

The Production

ITAB Nässjö are producers of wooden parts. They have cutting machines, mills, a painting line, an edging machine where edges of boards are refined, a machine where laminate and other products can be glued onto for example plywood, and a station where manual cutting and adjustments to the products are made. The production has 350 different kinds of wooden material that they saw with different types of color varnish. ITAB also have an assembly department where purchased products and manufactured products are combined. See map below:

Figure 4.1 Purchasing flow in ITAB drawn by the authors

10-12 weeks from block order to first delivery. Purchasing happens parallel to finish developing the concept and production during the twelve weeks to first delivery and after.
Figure 4.2 Production flow in ITAB drawn by the authors
Empirical part

ITAB used 22000 production hours this year. This increases more and more every year as they take on more customers. They have just received a new contract. They have the possibility to put production elsewhere during peak periods during the year. ITAB want to base their production on orders instead of forecasted demand, and they are currently investigating the possibilities to manage this. They have had difficulty planning the production due to the uncertain demand from customers and problems in delivery of purchased products. When there are problems in the deliveries to ITAB, ITAB have to pressure the suppliers to deliver or they have to negotiate with the client to deliver late. Today, production often is not involved in the early stage of the project development, which mainly concerns the smaller projects. The information from sales department about produced products is given very late to the production department, which makes production planning very difficult. It is also difficult to prioritize between different production orders. Many times they come at the same time, thus it makes it difficult to prioritize. Delays in purchased items and bad quality can thus affect the schedule heavily and make it even more difficult to plan and produce the right item at the right time.

The working schedule for the employees in the production can be scheduled in many ways. Now they work two shifts. Some work nights, and weekends at peaks. It is easy to get extra staff for assembly, but not for production. They need more machines for that.

The machinery in the production is the bottleneck. Some customers have a large amount of items to be produced within ITAB; some have a very small amount. For some clients ITAB purchases most items elsewhere. Stadium has many purchased items in their orders and very little is produced. However, Kappahl has a lot of production and very little is purchased from outside. Thus, the more a customer wants ITAB to produce the larger the impact will be on ITAB’s own production. The amount of capacity used within ITAB’s production thus depends on which customer places orders at ITAB.

**Inventory**

ITAB always produce to meet the block orders. They rescheduled when the actual order comes. It is very difficult to standardize the products since every customer wants their own solution. They have many different articles sometimes with small volumes. Many boards are standard, but the laminate is different for each customer thus impossible to standardize.

ITAB thinks they have sufficient competence within inventory management to handle it by themselves, thus they have not outsourced this function. Today, they have sufficient space within their warehouse to accommodate all their goods. Sometimes at high peaks, they might need to rent additional warehouse space, but this rarely occurs. Their warehouse capacity has been expanded over time.

**Transport**

ITAB pays for much of the transport of the goods from the supplier to ITAB. Some suppliers pay for the transport. They try to make the supplier use their account with Schenker, which makes it easier to track costs. They have a contract with Schenker, which they share, with ITAB Jönköping in order to get lower prices due to ITAB sending larger volumes. The transport out to the customer is
arranged by ITAB and paid by the customer or the customers arrange for their own transport.

4.1.2 New order system

ITAB has the ambition to start ordering from their suppliers by block order. They think they want to do this once a year or several times a year, and continuously send forecasts and delivery schedules each week to update. ITAB sees the need to set a freezing time with the supplier, when a forecasted demand becomes a fixed demand. They are aware that they will need to transport more to cope with the more frequent deliveries, but they think that the reduction in storage costs will make up for this. They are also aware that they must improve the forecasts made by marketing department. The information from them must improve if there is to be a real improvement in purchasing and production. ITAB is looking to form closer relationships with their suppliers to have better cooperation. ITAB is looking to make a total reorganization within purchasing department the coming years. Therefore, this is a step to improve the purchasing. They want to start this system by using e-mail or fax. The goal is to install a web system of some sort. Contracts for each product will possibly be established for each block order or through an overall deal including all block orders. ITAB believes that their suppliers will see this as positive. ITAB wants to start using performance measures of some kind to assess their supplier performance.

4.2 Supplier information

4.2.1 CEOS

Information is gathered from interviews with Anders Blomquist sales leader and the responsible sales representative for ITAB on the 10th of November. He is responsible for customer visits at the supplier, negotiating contracts with ITAB and visits the customers at site. He has been at CEOS for twelve years and has a long experience working with ITAB. Stefan Erlandsson customer service representative that deals with the daily contact, handle orders and is involved in new product development and purchasing of ITAB’s products. He has been working with ITAB for seven years; Torbjörn Fritz the production manager at ITAB Shop Concept Nässjö and Jan Odquist, one of two head purchasers at ITAB Shop Concept Nässjö.

Company information

CEOS is located in Forserum not far from Nässjö and is a wholesaler of wooden materials. They employ 40 people and have a turnover of about 265-270 million 2005 (CEOS Homepage). CEOS has two concepts, they store certain materials in the facility in Forserum which they sell to all customers and which they issue in a catalogue. Then they also help customers to locate suppliers and help them buy customer specific products, either as a raw material or as a finished product ready to use. They supply ITAB Nässjö with raw material for their production and for assembly. They supply shipboards with and without (semi-finished) coverage of melanin/varnish to ITAB as well as finished cut products. CEOS is ITAB’s main supplier, but ITAB use several other suppliers in this market as well. CEOS have many competitors in the market. CEOS has recently been sold and the business will be split. One part sells components for the building retailers and one part sells wooden material to businesses such as furniture manufactures and interior
Empirical part

decoration companies such as ITAB. They have sold the part that supplies the building market and this will move from Forserum.

CEOS prioritize closely located municipal clients. They like to help in promoting the region as well as it is easier to deal with clients that are easy to reach. They do not categorise their customers deliberately. However, larger customers need more service and benefits than smaller clients need. A customer relationship is very much judged on whether the customer is happy or not. This information they receive from their customers if problems occur and their own sales visits at the customer location. Occasionally they also issue customer surveys where the customers are allowed to place judgement on certain criteria such as availability, flexibility and so on.

CEOS is very positive towards working and collaborating with their customers to make improvements. They are very open to creating stronger relationships with them and they already do that with some of their customers.

**ITAB’s perspectives**

ITAB’s perspective on CEOS is that they are a good supplier. ITAB feel that they have a good relationship and the communication between them is working well. They have been ITAB’s suppliers for about 10 years. They make on time deliveries, have an acceptable lead-time, their products have good quality compared to others in the market and can usually give a decent price. Their weak points are the price, which could be lower at times. ITAB would also like to be able to purchase less and more frequently from them. Today, many times they purchase 4 weeks worth of production of one material, which is too much and demands a large amount of storage. Today, the production handles the day-to-day purchases of these materials. This is about to change and will be shifted to the purchasing department.

**Supplier perspective**

ITAB is one of CEOS top ten customers and they are considered very important due to the volume that they buy and the complexity and large assortment of products that they need. CEOS is one of ITAB’s two largest suppliers.

CEOS believes the cooperation with ITAB is working well. CEOS thinks that ITAB is a good customer due to their large knowledge about the material that CEOS sells, their good dialogue, and their good working relationship between the people at CEOS and the purchasers at ITAB. The complexity and large amounts of orders that ITAB sends to CEOS makes it necessary to keep almost daily contact between the two firms concerning price issues and discussions. A strong relationship has developed between them because of this. CEOS perceives it to be a mutual relationship, both companies are seen to be very flexible and can understand and work well together to solve problems.

CEOS believes that the biggest problem with ITAB is that they acquire order information to late. Many times ITAB places orders that come too late or has a design that is impossible to manufacture. CEOS is aware and have a good understanding of the problem that ITAB faces with their end customers and the difficulty they have. However, they still emphasise that a closer involvement with ITAB and better information on deliveries during the year would help. It would
help lowering prices, eliminating difficulties and make the process of designing and creating a valid concept more efficient.

**The current business process**

The order process can be seen illustrated in the figure below:
Empirical part

Figure 4.3 The current business process in CEOS drawn by the authors

They use the information system Movex to enter orders and transmit information within the company.

The purchasing of products by CEOS depends on the product. The CEOS purchaser orders the catalogue products. Secondly, the customer service team most often buy the customer specific products.

However, the volumes of these products can vary and it is important to deliver all trucks full. This means that the purchaser and the customer service people will discuss orders frequently in order to fill up trucks with material. One has to help with other material if the order from the customer is too small. The purchaser also helps to check deliveries and have contact with suppliers. Most material is purchased outside of Sweden since there are few factories in Sweden that can deliver these products. CEOS buys ITAB’s products from Denmark, Belgium, Sweden, and France. The amount purchased depends on the volume that ITAB wants and according to the minimum batches that CEOS suppliers require in order to produce the product. ITAB purchases different volumes of different products. Products that have enough volume to fill up a truck or trucks are directly transported to ITAB from the supplier. If ITAB only needs half a truckload, CEOS needs to fill it up with other products from that supplier. Half of these truckloads are then delivered at ITAB and half at CEOS. When the order only refers to a few packages of a material, they deliver to CEOS and then transport them later to ITAB by their truck system. Some suppliers are very meticulous and they cannot deliver small batches. This depends on the kind of product bought, but many supplier demand that full truckloads are to be purchased otherwise they will not start the production. All deliveries from Europe must be fully loaded.

Today, CEOS does not receive any prognosis and they do not send any to their suppliers either because they have little knowledge of what is going to be bought in the future.

To keep inventory and manage it is part of CEOS business as an intermediary. They have to be able to store products for their customers, but the customer really "owns" the product. The customer have to buy all customer specific products that CEOS store for them within a certain period. They need to store their products in order to stay in business because they are considered rather powerless compared to their customers and suppliers. They are very much dependent on both. CEOS business relies on getting both large and small customers. Manufacturers have no possibility to supply small and medium customers, because it would be too expensive. CEOS can do this for them if they also get to deliver to the large accounts. The products that CEOS sell are very expensive and thus the inventory is very expensive.

CEOS also subsidize and pays for the transport to ITAB. ITAB only pays a symbolic sum. CEOS have their own system of delivery where they transport goods every day to all their customers in a radius of 150km. ITAB has two deliveries today.

CEOS have a saw where they can help the customer cut boards into smaller pieces and other shapes. However, this part of their business is currently not very developed. CEOS can also help the customer produce other items. They can for example deliver laminated boards by using subcontractors to do it for them. In
short, they can thus deliver refined products to ITAB if they so wish. Two people at CEOS handle the cutting of different products. The size and shape of the product that a customer wishes to buy is entered into an optimization program constructed for the saw. This program helps CEOS to calculate how to saw most efficiently and use the material in an optimum way. It helps when calculating what the cost will be for CEOS, which is used to calculate the price that ITAB needs to pay.

**The new change**

CEOS considers this change very positive. It will enable them to plan a head and to inform their suppliers, which would also consider it a positive matter. It can also enable them to negotiate better prices of the products because they will negotiate a larger volume. They are positive because then they can purchase a large volume and store a month or two worth of products to deliver from and then fill up as time goes on. Lead times will probably be shortened.

CEOS also have this system in place with other customers and have a system in place to administrate these orders. They believe it will increase their inventory though. However, CEOS does not consider this a problem. CEOS does not think there will be a big difference in the use of transportation because they have their truck system and ITAB is municipal client, which means that they can transport goods to them every day without great difficulty. They are also positive because it means that they tie up more business if ITAB allow them to deliver to them.

CEOS believes that this will be very positive for them and consider it a very serious agreement on ITAB’s part. They understand that if this is implemented they will carry a larger responsibility. It will strengthen and tie the two businesses closer together.

The block order and forecasts will give CEOS a time to anticipate, plan and research the market better. It can also be possible to find better prices and possibly make it less stressful for the people that work at CEOS, because they do not have to react to emergencies all the time. CEOS reserves a certain amount of capacity at all their suppliers. They judge how much is needed every year by historical data and discussion with the customers. A block order would enable them to reserve capacity and know when and where to use the capacity in order to secure deliveries to all their customers.

It will give CEOS an easier situation to plan deliveries to their warehouse and to their customers. They can consolidate orders easier from their suppliers since they know all that they purchase according to the block order will be used in a given number of weeks. It will also be easier to foresee price increases and to negotiate a better price for the future, so that ITAB will not have to pay different prices all the time.

CEOS point out though that another company has just bought them and thus they are currently going through a reorganisation. This can make it difficult for them to implement this change at this moment.

CEOS believes that the information that they get from the forecast will not affect their purchasing a lot now. Stefan point out that the boom in the economy has meant that all factories across the world are almost fully booked and this has in-
creased lead time and increased the difficulty to get certain products produced and to acquire good prices. Their suppliers thus, will not have much use for their forecasts now. However, as Stefan says, there might soon be a recession when the factories will have difficulty filling their production and then they will find this information extremely positive.

CEOS emphasizes that in order to increase the probability that the block order system will be a success, they need to be more involved in ITAB’s business, their product development and acquire better information from ITAB, on time. If it this is not so, this system will not help.

4.2.2 Bjerkås

Material in this part is based on the information that we gathered from Bjerkås webpage and interviews with Urban Kjellefors, who works as production planner at Bjerkås. He handles and administers most of ITAB’s orders and prepares them for production. He has only worked with ITAB for two years; Leif Nyberg is the production manager at Bjerkås who handles the orders from ITAB as well and prepares them for production. He has worked with ITAB for one year; Torbjörn Fritz, production manager at ITAB Shop Concept Nässjö and Jan Odquist, head purchaser at ITAB Shop Concept Nässjö.

Company information

Bjerkås is a subcontractor of metal products in the store and office interior decoration market. They make products in steel and black tin. They are located in Stenkullen outside of Gothenburg. This year they have a turnover of about 40 million Swedish kronor (Homepage Bjerkas, 2006) and have around thirty-five employees in total. They sell amongst other things consoles, shelves, and stands to ITAB.

The two most important criteria they have to distinguish between a good or bad customer is the revenue size that the customers business brings and how well they cooperate and communicate with Bjerkås as their supplier. They feel that good communication and dialogue between the supplier and customer is of vital importance. Larger customers are somewhat prioritized since they usually demands more. They think it is positive that their customers want to improve their performance as long as it is not on the expense of the suppliers. It has to be mutual.

ITAB’s perspective

ITAB has used Bjerkås as a supplier for 4-5 years. Bjerkås make products that are ready made for store use as well as components assembled with other products at ITAB. Fifty percent of their products go to assembly and 50% go directly to storage within ITAB. Most of the time Bjerkås deliver products of good quality, but they often have difficulties to deliver products on time. This has many times caused problems within ITAB’s production. They also make deliveries without pallets, which also creates difficulties to handle the products and increase damage. Their lead-time is considered satisfactory most of the time and for the most part, they have a satisfactory price on their products. Their lack of planning is also considered one of their weaker points. ITAB collaborates with Bjerkås at times on new products, but mostly when improvements need to be made. De-
Empirical part

spite these weak points, ITAB thinks that their relationship is good and that they have a good communication between themselves about problems and difficulties.

**Supplier perspective**

Bjerkås consider ITAB to be a large customer with high volume purchases. Bjerkås thinks that the cooperation with ITAB is working well and that they have a good working relationship. The communication between them is good when it comes to problem solving. Bjerkås has received an order very similar to block orders from ITAB at two occasions already. The only difference was that ITAB did not update the forecasts on these occasions. They mentioned three problem issues that they had experienced during this time: ITAB sometimes places additional orders for the same article that they already placed a block order for earlier. Bjerkås want ITAB to stick to the block order and renew that instead in order to prevent confusion. Another important thing is that the difference between the forecasted amount and the call off amount must be clearly marked in the block order. Another problem that has occurred, is that ITAB sometimes involves too many people to investigate the same problem, which also creates confusion. Bjerkås also emphasises the fact that information in the forecast must be good. They have already discussed this with ITAB and they say they have found a solution to the problem. Bjerkås has also increased their production of finished products to ITAB and they find this a difficult challenge, but positive. It increases their need to purchases customized components products at a greater extent than before. This increases the amount that they need to store, make their purchasing more complex, and increase the need for them to find ways to make deliveries and inventory more efficient.

**The current business process**

The order process flow:
Empirical part

The orders arrive at Bjerkås by fax where the number of items and delivery date is specified. The order is entered into the mps system. Here they can see the capacity use and check when they have available time in production. Then they send an order recognition confirming the order to ITAB. They try to do this as soon as possible which many times mean that they cannot await reply from all of their suppliers before answering. The production planning is done parallel to this. The detailed plans are not made here but by each resource manager in the production.

The purchasing of products is conducted so that a rest list is drawn out from the MPS system almost every day and then purchases are made according to this list. ITAB is buying more and more finished products from Bjerkås, which in turn means that they need to buy custom-made articles. They also need to buy laser cut articles because they do not have this machine themselves. The metal used in their production is bought in bulk and kept in considerable amounts in storage. The metal is used for all customers. The lead-time for their purchased articles var-

Figure 4.4 The current business process in Bjerkås drawn by the authors
Empirical part

ies by season. They have to follow certain batch sizes from their suppliers. It is a bit of speculation and they adjust the prices according to the volume purchased. They usually purchase the specific amount that the customer wants in order to prevent having goods in storage that might not be used.

The production is made up of a series of machines that punches steel, cut pipes, perforate pipes, and a welding department, one workshop, one kamp press, one painting department and an assembly department. The order in which the metal is entered into different machines depends on what product is made. Most departments are almost automatic. The welding department demands the most labour and can become a bottleneck at times. The capacity is lowered fast when there is illness. Bjerkås is aware of this problem have ways to hire other competent welders or rent additional production time from another place over a period. They work in two shifts and are fully booked in many of their machines.

**The new change**

Bjerkås has since the summer received order similar to a block order from ITAB at two occasions so they are familiar with the system and have an administrative system to handle these orders in place.

They think the change is positive but they do not have a large storage space and they are unwilling to tie up to much capital in inventory for a long time. They do not want to store products more than a short time period. Many times, they also purchase all the components needed for an order at one time, which ties up space, and increase inventory costs. Thus, it is important from them to be able to deliver soon after the customer order has been placed. They have the possibility to store semi-finished products and they do so today, but not for long.

The consider it positive that a block order makes it easier to plan and purchase products because they can purchase more ahead of time and larger quantities at one time which lowers their purchasing costs. Since the forecast gives them the ability to know approximately when to deliver, they are also prepared to store the products. They think that the block order should at the most span a quarter of a year; otherwise, it will be too difficult to handle, with too large volumes.

Bjerkås also understand that ITAB has difficulties to start up using the block orders and that they understand that there will be an adjustment period.

**4.2.3 Hydro aluminium profiles AS**

*Interview was conducted in Hydro aluminium profiles AS on 27th of December, which is located Raufoss in Norway. Our interviewees are Conny Olsson and Lars Odquist. Both of them are responsible for the sales in eastern district of Sweden. Conny handles the daily contacts with ITAB and other small customers, like register the orders, answers the questions the customers ask, also little bit price issue. He has been working with ITAB Nässjö since beginning of 2000. Lars is responsible for the large customers regarding contracts, prices and so on. The information from ITAB is based on the interviews with Torbjörn Fritz, the production manager at ITAB Shop Concept Nässjö and Jan Odquist, the head purchaser at ITAB Shop Concept Nässjö.*
**Company information**

Hydro aluminium profiles AS belongs to Hydro group aluminium sector, which is the third largest integrated supplier of aluminum in the world. Hydro aluminium extrusion is a sector within Hydro aluminium. They are Europe’s largest producers of aluminium extrusions as well as a leading international player active in most of the major markets throughout the world. Hydro aluminium profiles AS has gained 25% more of the Swedish aluminum supply market during 2005. They supply ITAB Nässjö with customized aluminium profiles.

Hydro aluminium profiles AS is currently sending out a survey to all their top customers to assess their performance related to quality, delivery, and service. At the same time, the sales team has continuous meetings with large customers to get feedback about Hydro’s services. Hydro thinks that it is very important to satisfy their customers. In order to do so, they would like to work close with customers and help them in many different ways, like management, costs, design and so on. Hydro’s intention is to create long-term relationship with all their customers.

**ITAB’s perspective**

ITAB has used Hydro aluminium as a supplier for the past 4-5 years. ITAB Nässjö think that Hydro aluminium profiles AS have difficulty delivering on time. Their products often have a long lead-time, and often have a high price. However, in comparison to other actors in the market they are satisfactory. However, the quality of their products is good. Their weakest part is their delivery times that are not good enough. ITAB also finds that the communication and relationship with Hydro is very good and they work well together. Hydro and ITAB sometimes work together on making new products, but mostly it is in order to improve them.

**Supplier perspective**

ITAB Nässjö has been very important customer for Hydro since beginning of 2000 because of the volume ITAB purchased and the types of products, which Hydro is very interested in developing. Hydro and ITAB have had a good working relationship and communication. Problem solving has been good between them and Hydro is always willing to contribute to solve ITAB’s difficulties. The sales representative has a meeting with purchasing department of ITAB every second month to discuss the products, price, delivery time and such issues.

For Hydro, their problem with ITAB Nässjö right now is that ITAB give sharp orders with short delivery times and make the changes to orders on short notice. Since the nature of Hydro’s products, Hydro usually need longer lead time to produce the products ITAB need. Without the forecasts from ITAB Nässjö, Hydro are not able to give required delivery time every time. From Hydro’s point of view, the reason of such problem is that ITAB got new project to handle and ITAB’s purchaser for Hydro is new and does not know Hydro’s products very well. Therefore, ITAB has difficulties to both plan their production well and give Hydro forecasting. At the same time, Hydro has limited production capacity in high seasons and is not able to produce and deliver the amount ITAB need on time. Therefore, Hydro needs information very early.
However, Hydro understands ITAB’s problems and their evaluation of the history of their relationship is positive.

**The current business process**

The figure below illustrates the order process:

![Diagram of the current business process in Hydro](image)

No forecasts are exchanged between ITAB and Hydro today. Hydro has to base the budget on an assessment of the demand of raw material needed during a year. These assessments are made based on the purchasing history with ITAB. At the same time, the historical demand is also used to make a forecast, which is later adjusted after communication with ITAB. Sales get orders from ITAB and transfer it to Hydro’s own article information, which are put in their ERP system and distributed to the different departments in the company.

In purchasing, Hydro do not only purchase according to ITAB’s orders since the raw material is the same for most of Hydro’s products, which is metal aluminum. Metal aluminum is purchased internally from Hydro’s sister company ‘Hydro aluminum metal group’ and is delivered five times every week.

The Production planner arranges production based on the information appearing in their ERP system and his experience. For ITAB’s products, the semi-finished
profiles are produced and sent to Hydro’s factory in Sweden, where the products are finished in the last production process: painting or cutting. Hydro can occasionally outsource some of their production to other companies in order to mitigate the pressure on their production capacity and get better delivery times to their customers.

Hydro sometimes store products for their customers. However, they try not to have products in their warehouse for too long. ITAB’s products, they usually store in the warehouse in Sweden, from which they are delivered to ITAB. A third party transport company handles all the transport for Hydro. Hydro manages to delivery products to ITAB in the nighttime by truck and includes the cost of transport in the product price. They try to deliver all the products of one order at the same time. Hydro can deliver the products directly to the shops requested by ITAB if Hydro has enough time.

Hydro has been involved in the early stages of ITAB’s new products development. Sometimes Hydro help ITAB to develop their ideas and sometimes Hydro give suggestions about design, function, and material. Hydro has their own technicians to help with proposals about new products. This kind of involvement is regarded as part of Hydro’s core business and Hydro like to do it.

**The new change**

Hydro thinks that it is both possible and good to implement a block order system for some articles. However, a few rules have to be stated in the agreement, for example, the products quantity in the block orders has to reach the minimum volume based on the starting costs; and ITAB have to give right information about forecasting and delivery plans. Hydro thinks that for some articles that have long production lead-time, there will be problems to apply block order system. Hydro emphasizes that to understand each other and to receive timely forecasts are vital if the block order system is to be implemented. The forecasts should not only be for a certain term, but also timely updated.

Hydro does not think that the block order system will affect their purchasing very much because the raw material is purchased in bulk and is used in all Hydro’s products. However, a block order will help Hydro to increase their batch sizes. From sale’s point of view, the forecasts will be an important tool in the high season of the production in order to delivery on time. A block order with forecasts showing the need for a product 6 or 8 weeks ahead of time would help the production planner make a better production plan. This would give Hydro the possibility to enter orders early into the production plan, anticipate the need for higher capacity in certain periods, and adjust accordingly by working more shifts, or working in weekends. This could help shorten the lead-time and delivery time. However, from the production planner’s point of view, in high season, the block order system will not affect the production very much because their machines are fully booked at that time and ITAB’s orders have to stay in the queue with other customer’s orders.

Since most of ITAB’s products are completed and delivered from Hydro’s factory in Sweden, which is located close to ITAB, inventory and transport are not considered big problems. Inventory will increase, but Hydro thinks that increased inventory is in their control and they can manage to get balance.
4.2.4 ITAB shop concept AB I Jönköping

The interviews with ITAB Jönköping were conducted on 23rd of December and 5th of December. One of our interviewees is Bengt Cancell, who is the vice present of ITAB Jönköping and has been working in the different companies in the ITAB group since 1987. He mostly has contacts with ITAB Nässjö on the top management level with logistics and production issues. Another of our interviewees is Thomas Olsson, who is the sales manager and he is responsible for the sales to ITAB Nässjö and the export of ITAB Jönköping’s products. The information from ITAB Nässjö comes from interviews with Torbjörn Fritz, production manager at ITAB Shop Concept Nässjö and Jan Odquist, head purchaser at ITAB Shop Concept Nässjö.

Company information

ITAB Shop Concept Jönköping is a manufacturer of metal parts. They are also the sister company to ITAB Nässjö. ITAB Jönköping supply metal parts, such as shelves, and back panels for ITAB Nässjö. Most of their products are made in steel. They have 4 weeks delivery time on the parts. They also work along with ITAB Nässjö to deliver total concepts. ITAB Jönköping makes cash registers and entrance systems that are part of a concept.

ITAB Jönköping classifies their customers according to their sizes and what products they purchase. If customers buy the whole concept, then they will be an A customers for ITAB Jönköping. Otherwise, they will be B or C customers. ITAB Jönköping’s business idea is to be a total solution supplier, not just traditional supplier.

ITAB’s perspective

ITAB’s remarks on their sister company is that sometimes there is a problem in delivery, unmarked pallets and wrongly marked pallets. They sometimes work together on making new products, but mostly it is in order to improve them. They have been ITAB Nässjö’s supplier for approximately 8 years.

ITAB’s perspective on ITAB Jönköping is that their lead-time is considered too long most of the time, but the prices of the products that they themselves manufacture are satisfactory. ITAB Jönköping has long delivery times on products that are not their own production though. The quality of products that they themselves make is good, but others can be rather poor. ITAB Nässjö believes that their relationship is good and that they have good communication when it comes to problems.

Supplier perspective

ITAB Nässjö and ITAB Jönköping are in the same ITAB group and they supply each other with products. Their cooperation focuses on price discussions and how they, as a group, can work together to give the best possible service to a mutual end customer. Therefore, their working relationship and communication are considered good. They have regular discussions with each other about prognoses and product issues.

When they work together to satisfy their common end customers delivering a complete concept, the cooperation is also good. However, when ITAB Jönköping works as the sub supplier for ITAB Nässjö, ITAB Jönköping has had trouble in
Empirical part

the production since there are no forecasts from ITAB Nässjö. ITAB Jönköping’s business has been growing a lot this year, which has created a situation where ITAB Jönköping has difficulty delivering products.

The current business process

The figure below illustrates the order process:

Sales in ITAB Jönköping try to get forecasts from Nässjö when ITAB Jönköping works as a sub supplier. When they work as one group to deliver a total concept for the same final customer, they have forecasts meeting with their end customers every quarter to discuss customer’s business ideas and plans. However, due to the uncertainty, these cannot be used reliably as forecasts.

In purchasing, they add all the forecasts together to make a total forecast for their purchasing. Standard raw material is purchased in bulk for ITAB’s products and other products. They usually have 2 weeks lead-time from their suppliers. Some
raw material is always kept in their stock so that they do not depend on their suppliers. The production planner makes the production decision based on information appearing in ERP system and his personal experience. Normally, they produce the same items 8 or 12 times per year. The production capacity in ITAB Jönköping still has not reached maximum, but one bottleneck exists in their production.

Inventory is a big problem for ITAB Jönköping. Therefore, they want to lower their inventory level as much as possible. Their delivery department arranges transport. Schenker delivers their products either to Nässjö or to their common final customer together with ITAB Nässjös’s products as a whole concept.

When ITAB Jönköping get orders from ITAB Nässjö, sales put the order information to the ERP system, which is the same system ITAB Nässjö is using as well. ERP system distributes the information to different departments in the company.

**The new change**

ITAB Jönköping does not really have a similar block order system with their other customers. They think that block order is difficult for them to apply because they consider that their production lead-time has to be 4 weeks and inventory level needs to be low. If they get block orders with a fixed plan, they could deliver with a shorter delivery time. In this fixed plan, first delivery time has to be 4 weeks, which is their products lead-time. Otherwise, it is impossible. Meanwhile, they think that it is better to receive a block order every half a year or quarter of year because of the uncertainty in their customers’ demand.

Block order would not effect purchasing of standard material very much for ITAB Jönköping. However, for ITAB Nässjö’s customized products, ITAB Jönköping has to combine their own plan and Nässjö’s orders, forecasts and delivery schedules together to make the purchasing decision. ITAB Jönköping also produces a large variety of products, which makes it very difficult to schedule the production without forecasts. The forecasts will help if fixed delivery dates and amounts will be entered into it. They need to keep their lead-time to four weeks or they will have difficulty fitting orders into ITAB Jönköping’s production.

Implementation of the block order system will increase ITAB Jönköping’s inventory. Therefore, they think that 4 weeks lead-time is proper for them and they do not want to shorten it. Otherwise, it would be negative for their inventory level. Meanwhile, they prefer delivering every second week to ITAB Nässjö.

### 4.2.5 Techno Skruv AB

*Interview with Techno skruv AB was conducted fifth of December. Our interviewee is Per Gabrielsson, who is one of Techno skruv’s owners and owns 50% of the company. Meanwhile, he is also mostly responsible for the purchasing and sales. As a manager, he does not handle the daily business routine with ITAB Nässjö, but he has contacts with purchasing manager Jan Odquist of ITAB Nässjö in some issues. Magnus Holm, the purchasing and logistics manager at ITAB supplied the information from ITAB Nässjö.*

*Company information*
Techno skruv are a trading company without production. They buy screws and other small metal parts mostly from Europe and Asia, including Italy, Spain, China and Taiwan. These are sold to their Swedish customers. They have 12 employees in total and 40,000kr turnover with ITAB in 2005 (Mail, Holm, M.).

Techno skruv do not classify their customers, as they consider all their customers to be small with the potential of growing in importance in the future. They are also aware that treating a customer as an unimportant customer would bring their company a bad reputation. They believe that all the customers are good and equally important. They have to treat all of them as well as they can. Techno skruv try to get a close relationship with their customers because they think that the relationship is very important for all their business.

Techno skruv is involved in their customers’ products design and give their customers suggestions about design, material and so forth. Their ambition is always to be involved in the early stage of new product development of their customers.

**ITAB’s perspective**

Techno skruv has been one of ITAB’s suppliers for 3 years. ITAB think that Techno skruv could offer many kinds of available products from their stock and they offer good service when it comes to problems. However, if ITAB want to have low cost products from Techno skruv they often have long lead-time because they have to purchase products from China and Taiwan. Techno skruv is not involved in ITAB’s product design and ITAB check a product sample before deliveries from Techno skruv to control product quality.

**Supplier perspective**

Techno skruv was the supplier for Skandinaviska Inredningar AB in Örebro. After ITAB bought Skandinaviska Inredningar AB 4 or 5 years ago, Techno skruv became the supplier for ITAB as well. The relationship and cooperation between Techno skruv and ITAB Nässjö are regarded as good. One problem occurs when ITAB Nässjö send fixed orders without forecasts. This gives Techno skruv difficulties to deliver on time when they do not have the products in the stock and when some customized products have a long delivery time. ITAB has difficulties with informing Techno skruv the exact day they need the products. Techno skruv still believes that they have the possibility to supply ITAB with more products in the future.

**The current business process**

The order process can be seen illustrated in the figure below:
Techno skruv supply 20% standard products and 80% customized products in value to ITAB. If counting articles, 80% of purchased products by ITAB are standard products. Usually when orders come from ITAB by fax, Techno skruv either get the required products from their stock directly and deliver them to ITAB according to the required delivery time, or order the required products from their suppliers with usually very varied delivery time. Standard products are usually ordered according to a certain batch size by Techno skruv from their suppliers. Customized products are ordered according to batch sizes based on amount requested by ITAB and are made from the drawings ITAB transfers to Techno skruv.

Since most of the products that Techno skruv provides are small and storing products is regarded as part of their business idea, they do not mind helping their customers to keep products in their stock. They also consider it as their advantage in satisfying customers. The transport from Techno skruv to ITAB is operated by Schenker, paid by ITAB, and ordered by Techno skruv. Techno skruv can usually manage to deliver to ITAB what was ordered on the previous day.
Techno skruv just have a simple computer management system. This simply records orders and the quantity of products they purchase. Lots of work is done manually, such as decision-making, and calculation.

**The new change**

Techno skruv have a block order system or similar systems with their other customers. In addition, this way of working is getting more and more common in their business. They think that a block order with call off schedule is a very good and helpful way for Techno skruv to solve the current problem with ITAB, if ITAB guarantee to purchase the products stated in the block orders. Techno skruv will always keep certain amounts of products in stock for the customers who have sent them block orders in order to meet such customers’ needs on time. Techno skruv purchase certain amounts of products according to the block order and keep them in their stock. When ITAB need or change the orders, Techno skruv could always fit ITAB’s needs from their stock.

In purchasing, block order gives Techno skruv a better guarantee to purchase with bigger batch sizes and increase the possibility to get a cheaper price. On the other hand, Techno skruv have to send fixed big batch size orders to some of their suppliers, who have a minimum supply volume. Techno skruv will purchase according to their economical batch size and forecasts. If ITAB start working with a block order system, Techno skruv wish that ITAB could mark the changes in some way made in the forecasts so that it is clear that there has been a change made. If this is not made it is easy to overlook it.

Techno skruv’s inventory is considered too big compared to their turnover according to their professional financial advisor. A block order could and will bring more inventories to Techno skruv, but they do not consider this a problem. At the same time, enough inventory can improve their delivery performance because they could have the products in stock and guarantee the delivery to ITAB. Transport to ITAB Nässjö will be more frequent and more time will be spent in handling transport. The time they save in other activities like purchasing and order handling could however make up for the time spent on handling more transport. Meanwhile, the product quality for ITAB’s products will improve because Techno skruv have more time to get replacements or solve problems in other ways if there is quality problem in purchased products from their suppliers.

The whole business process in Techno skruv is believed to become smoother and more effective due to implementation of a block order system.
4.3 Summary of empirical part

Here we show four tables summarising the empirical findings above.

Information about ITAB Shop Concept Nässjö AB.

<table>
<thead>
<tr>
<th>Function</th>
<th>ITAB Shop Concept Nässjö</th>
</tr>
</thead>
<tbody>
<tr>
<td>Purchasing</td>
<td>• Purchase divided up into four categories</td>
</tr>
<tr>
<td></td>
<td>• Two head purchasers, and two junior purchaser</td>
</tr>
<tr>
<td></td>
<td>• Suppliers selected from index companies, advertisements, old connections, exhibitions, the phone book, or the internet.</td>
</tr>
<tr>
<td></td>
<td>• Supplier selection: test enquiry as to price, a visit and judgement of the purchaser, test deliveries during one year.</td>
</tr>
<tr>
<td></td>
<td>• No regular connection visit with the Swedish suppliers</td>
</tr>
<tr>
<td></td>
<td>• No separate function to find, select and evaluate suppliers</td>
</tr>
<tr>
<td></td>
<td>• Delivery, lead-time, quality, and price the basis of selection.</td>
</tr>
<tr>
<td>Production</td>
<td>• Make wooden products. Several machines that can be used in sequence depending on the product</td>
</tr>
<tr>
<td>Inventory</td>
<td>• Very few standardized articles</td>
</tr>
<tr>
<td></td>
<td>• They best manage the inventory themselves.</td>
</tr>
<tr>
<td>Transport</td>
<td>• ITAB pays for transport from most suppliers. CEOs is an exception</td>
</tr>
<tr>
<td>New Order system</td>
<td>• ITAB believe that new order system would help them to improve efficiency of supply chain. However, they do not have to clear idea how to implement in detail yet.</td>
</tr>
</tbody>
</table>

Table 4.1 A summary of information about ITAB Shop Concept Nässjö AB drawn by the authors.
### Summary of Information about five suppliers

<table>
<thead>
<tr>
<th>Issue</th>
<th>CEOS</th>
<th>HYDRO METAL</th>
<th>BJERKÅS</th>
<th>ITAB CONCEPT AB</th>
<th>SHOP SKRUV AB</th>
</tr>
</thead>
<tbody>
<tr>
<td>Company information</td>
<td>Wholesalers in wooden material</td>
<td>Aluminium parts supplier</td>
<td>Subcontractor of metal products</td>
<td>Sub supplier of metal parts.</td>
<td>wholesaler</td>
</tr>
<tr>
<td></td>
<td>ITAB’s main supplier</td>
<td></td>
<td>50% go to assembly, 50% go to finished storage</td>
<td>Sister company</td>
<td>deliver screws and handles</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Deliver parts or total concept to ITAB</td>
<td>Deliver 80% customized products.</td>
</tr>
<tr>
<td>View on customer</td>
<td>Prioritize closely located cus-</td>
<td>Positive on working close with</td>
<td>A, B, C classification of customers</td>
<td>No classification of customers.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>tomers, and large customers</td>
<td>customers on certain terms</td>
<td>The more they buy, the greater the priority for ITAB</td>
<td>Like to be involved in product design of the customer</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Judge their own performance on</td>
<td>Want long term relationship</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>what their customers tell them</td>
<td>Assess their own customer performance</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Positive about collaboration</td>
<td>from customer at regular sales meetings, make customer surveys (occasionally)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ITAB Perspective</td>
<td>Good supplier</td>
<td>Supplier for 4–5 years</td>
<td>Have good quality products, but difficulty with delivery at times</td>
<td>Supplier for 8 years.</td>
<td>Supplier for 3 years</td>
</tr>
<tr>
<td></td>
<td>Supplier for 10 years</td>
<td>communication and relationship with Hydro is very good</td>
<td>Good relationship, they have problems with delivery varying quality in products</td>
<td>Good relationship</td>
<td>Good service</td>
</tr>
<tr>
<td></td>
<td>Good deliveries, decent price, ac-</td>
<td>the quality of their products is good</td>
<td>too long lead-time</td>
<td>too long lead-time</td>
<td>Long lead time</td>
</tr>
<tr>
<td></td>
<td>ceptable lead time and good qual-</td>
<td>long lead-time, often a high price, difficulty delivering on time</td>
<td>they have problems with delivery varying quality in products</td>
<td>they have problems with delivery varying quality in products</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ity</td>
<td>compared to other actors in the market they are okay</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Supplier perspective</td>
<td>ITAB is one of CEOs top 10 custo-</td>
<td>been very important customer</td>
<td>ITAB is a large customer</td>
<td>Important to perform as one group</td>
<td>Have potential to develop more business</td>
</tr>
<tr>
<td>on ITAB</td>
<td>mers</td>
<td>ITAB have had a good working relation-</td>
<td>Good communication between the two com-</td>
<td>Working relationship and communica-</td>
<td>Working relationship and communica-</td>
</tr>
<tr>
<td></td>
<td></td>
<td>relationship and communication with ITAB on all issues</td>
<td>panies</td>
<td>tion is considered good, based on regu-</td>
<td>tion is considered good</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>lar discussions.</td>
<td></td>
</tr>
</tbody>
</table>

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### Empirical part

<table>
<thead>
<tr>
<th>Issue</th>
<th>CEOs</th>
<th>HYDRO METAL</th>
<th>BJERKÅS</th>
<th>ITAB SHOP CONCEPT AB</th>
<th>TECHNO SKRUV AB</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Purchasing</strong></td>
<td>• Buy Standardized/customized products</td>
<td>• Purchases in bulk for all customers from sister company</td>
<td>• Mostly bulk purchasing of different metal equal for all customers</td>
<td>• Metal is purchased in bulk</td>
<td>• Purchases in bulk from suppliers in Europe and Asia</td>
</tr>
<tr>
<td></td>
<td>• Buys ITAB’s things in Denmark, Belgium, Sweden, and France</td>
<td>• Delivers direct from Sweden when coated profiles.</td>
<td>• Buy some customized products, laser cut products in smaller volumes.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Order handling</strong></td>
<td>• Receive by fax, phone, or email</td>
<td>• Receive by fax, phone, or email</td>
<td>• Order received by fax</td>
<td>• Orders by EDI</td>
<td>• Orders by Fax or email</td>
</tr>
<tr>
<td></td>
<td>• Processed by contact in ERP system Movex</td>
<td>• Processed and entered into their ERP system, Movex</td>
<td>• Processed in their business system</td>
<td>• Entered into existing ERP system</td>
<td>• Processed in their business system</td>
</tr>
<tr>
<td><strong>Production</strong></td>
<td>• Cuts boards in different shapes</td>
<td>• manufactures customer specific items</td>
<td>• Make parts as well as finished products delivered to ITAB</td>
<td>• Production planned from information in the ERP system</td>
<td>• No production</td>
</tr>
<tr>
<td></td>
<td>• Buy refined products for delivery</td>
<td>• high pressure on their production full</td>
<td>• Can outsource production if need be</td>
<td>• Produce 8-12 times a year of a product</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Hope to increase purchase of</td>
<td>• can outsource production to others</td>
<td></td>
<td>• Have a bottleneck in production</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• work hard on making the production competitive</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Inventory</strong></td>
<td>• Keep inventory for their customers. Customer has to buy the goods.</td>
<td>• Prepared to store small amounts for a shorter period of time</td>
<td>• Keep storage of metal</td>
<td>• Have problems with high inventory levels</td>
<td>• Keep inventory for their customers</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Prepare to store small amounts for a shorter period of time</td>
<td>• Some semi-finished products</td>
<td>• Do not want to store products for a long time</td>
<td>• Consider inventory as part of their service to the customers</td>
</tr>
<tr>
<td><strong>Transport</strong></td>
<td>• CEO pays for the delivery of products</td>
<td>• Include transport price in</td>
<td>• ITAB pays for transport arranged by Bjerkås</td>
<td>• Use Schenker for delivery</td>
<td>• Use Schenker for delivery</td>
</tr>
<tr>
<td></td>
<td>• They have</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Empirical part

<table>
<thead>
<tr>
<th>Issue</th>
<th>CEOs</th>
<th>HYDRO METAL</th>
<th>Bjerkås</th>
<th>ITAB Shop Concept AB</th>
<th>Techno Skruv AB</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Thoughts on new change</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Very positive to change</td>
<td>Positive</td>
<td>Positive view</td>
<td>Good but difficult.</td>
<td>Good and wish to implement it</td>
</tr>
<tr>
<td></td>
<td>opportunity to: plan ahead, inform suppliers early, purchase larger volumes</td>
<td>Make easier to predict and prepare for delivery</td>
<td>Unwilling to store products for a long time</td>
<td>Can handle forecasting. Receives them from other customers</td>
<td>Need guarantee in purchasing volume</td>
</tr>
<tr>
<td></td>
<td>Increase their inventory, but they do not see this as a problem</td>
<td>They can produce larger volumes</td>
<td>Need to buy large quantities when purchasing which increases their inventory.</td>
<td>Need a fixed plan. Do not want it to be movable. Small flexibility.</td>
<td>Need correct and on time information in forecast</td>
</tr>
<tr>
<td></td>
<td>Use their truck system mostly for new deliveries</td>
<td>No effect on purchasing due to bulk purchase</td>
<td>Want a block order should span a quarter of a year.</td>
<td>With fixed plan they can schedule closer deliveries</td>
<td>Have same system with other customers</td>
</tr>
<tr>
<td></td>
<td>Tie up more of ITAB’s business</td>
<td>Minimum volumes</td>
<td>Increase the possibility to plan and purchase products. can buy larger batches at one time</td>
<td>No effect on purchasing of metal</td>
<td>Will be helpful in purchasing big batch size and delivery timely</td>
</tr>
<tr>
<td></td>
<td>Forecast will help their supplier during economic recession</td>
<td>Need correct and on time information in forecast and delivery plan. They need to be timely updated</td>
<td>Want block order every quarter or half a year</td>
<td>Want block orders to span a quarter of a year</td>
<td></td>
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<td>Have same system with other customers</td>
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<td><strong>Problem issues</strong></td>
<td></td>
<td>ITAB give sharp orders with short delivery times and makes the changes to orders in short time.</td>
<td>Bluzy responsibilities and tasks allocation in purchasing department of ITAB brought confusion</td>
<td>When production capacity is full, it is hard to deliver timely for a short notice order</td>
<td>Give fixed orders without forecasts. Hard to delivery timely when ordered products are not in stock</td>
</tr>
<tr>
<td></td>
<td>Acquire order information too late</td>
<td>Hydro needs more time in order to enter the orders into production.</td>
<td>Only one order per product</td>
<td>Need order information on time.</td>
<td>Hard to delivery timely by sharp orders be-</td>
</tr>
<tr>
<td></td>
<td>Make requests for products</td>
<td>Hydro is fully booked most of the time in production</td>
<td>Need order information on time.</td>
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Empirical part

<table>
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<th>Ideas to make change work</th>
<th>Closer involvement early in ITAB's process: closer involvement in product selection could make the process smoother</th>
<th>Important with good communication between the two companies: To form long term relationship</th>
<th>Stick to block order for the item purchased: Clearly marked in forecast: Information in forecast need to be good</th>
<th>Give fixed plan: Enhance communication</th>
<th>Block order is good to help to deliver timely: Need guarantee on promised purchasing volume: Need timely and right forecasts</th>
</tr>
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Table 4.2 Summary of information on suppliers drawn by the authors

cause customized products have long lead-time.
5 Analysis

In this chapter, we aim to analyse the result using the literature from the frame of reference.

The goal for ITAB in the implementation of the block order system is to improve efficiency of their supply chain. Therefore, the measurement is whether the block order will bring efficiency to ITAB’s supply chain or not. If the answer is negative, then ITAB might find better alternative ways. There are different issues, departments, and organizations involved and interacting in the whole implementation of block order. Main issues are forecasts, information sharing, communication and relationships, and production and production planning. The information acquired from the interviews and ITAB are highly speculative, since only one of the suppliers has experience receiving something similar to a block order to date. They have only received it at two occasions. Therefore, we mainly discuss the possibilities based on consideration of those issues and our speculation: what might happen when implementing block order within ITAB and their suppliers; and to consider the possible effect for each function within ITAB and their suppliers. The selected functions are those we believe will be affected in the block order change. The relationships are visualized in the diagram below:

Figure 5. The relationships between the selected functions affected in the block order change drawn by the authors

5.1 Possible effects in ITAB

5.1.1 Sales and marketing department

The sales and marketing department in ITAB is the department that directly communicates with ITAB’s customers and they know their customers best. They receive customers’ orders and distribute customer specification information to the other departments in ITAB. Meanwhile, they also create forecasting of customer demand based on their customers’ predictions of when and where stores will be opened or refurbished in order to guarantee promised delivery time. They are also responsible for the customer service and problem solving such as delayed delivery.
From literature, we can see that many times the lack of a good relationship between different departments is the cause of a project or external relationship to fail. A relationship is also very much built on the communication between two parties and their ability to trust each other. If the effect of the block order should be positive to ITAB, it is vital that the relationship between sales and other departments, such as purchasing and production, is good. Information also plays a supporting role in efforts to make processes more efficient and effective (Forza, 2001). Due to the activities and responsibilities sales and marketing involves the sales and marketing department plays a vital role in the information flow of ITAB’s supply chain. Availability and transmission of orders, forecasts and customs information are very important for the decisions making and scheduling in production and purchasing department. Wadell & Sohal (1994) stated that forecasts are used to plan the production, purchases, and other areas of the firm. However, as Davenport, (1997) said, the right information should be transferred to the right person at the right time (cited in Gülçin, B., 2004). If the information does not arrive on time or is not valid, then it causes an inconsistent material flow and ends with the dissatisfaction of the customer. Purchasing and sales are both reliant on there being a good communication between them. Purchasing needs information on new projects, their make up, customer preferences, changes, and forecasts in order to perform their job well. Sales, in turn, relies on getting feedback from purchasing on suppliers ability to produce, and deliver products that are included in each project as well as delivery problems that will affect the customer. It is thus important that purchasing be involved early in new projects so that they can inform and discuss with their supplier early on in the process to achieve the best solution and give good feedback to the sales department. For production to be involved at an early stage is also a vital part, in order to plan the production well. Petersen (1999) measured information quality in terms of if it was current, accurate, complete, compatible or convenient to access (cited in Forslund & Jonsson, 2007). If ITAB were going to implement block order purchasing, more information availability and transmission would be required from the sales and marketing department because the purchasing department cannot be isolated to determine the forecasts and delivery schedules sent to suppliers every week. Information quality is also required to be improved because without updated and timely forecasts and delivery schedules to suppliers, block order purchasing might be pointless.

Does the sales and marketing department have enough ability to improve information availability, transmission and information quality in order to manage block order purchasing? Now, the sales and marketing department do create forecasts of their customers’ demand. However, all managers interviewed within ITAB testify to the fact that the information they get from their customers are lacking in quality due to the difficulty of forecasting the demand. They have also said that it is almost impossible to change this fact, since their customers’ market makes it very difficult for them to make predictions. Interviews with John Pettersson within ITAB corroborate this fact. Therefore, it seems that there is little space and slim possibilities for sales to improve forecasting quality in terms of accuracy. However, it is possible to improve information transmission for sales and marketing in ITAB. Salespeople often work in isolation and face strong pressure to perform as Wotruba (1990) noted. Therefore, the involvement and awareness of the sales department when implementing the block order system is very important and determines if the information transmission based on collaboration with other departments could be improved. Improved information transmission and collabo-
ration could be a possible way to compensate uncertainty of forecasts more or less. Sales and marketing have to not only focus on customer satisfaction, but also give efforts in integrating and communicating with the purchasing and production department.

5.1.2 Purchasing department

In industrial purchasing, the purchasing department often plays a gate-keeping role by collecting and transmitting information to the decision-makers and other people involved in the purchasing process (Pettigrew, 1973; Webster & Wind, 1972, both cited in Lau, Razzaque, Ong, 2003). The forecasts with high quality are supposed to commence at the sales and marketing department and go through the purchasing department, then arrive at the order department of the suppliers. “Demand variability can be amplified up streams in the supply chain when not sharing accurate forecast with the supplier” (Forslund & Jons-son, 2007, pp. 94). Therefore, the most important mission for the purchasing department in ITAB is to get forecasts, interpret, update and send them to their suppliers regularly. However, as we mentioned, the purchasing department or purchasers cannot provide the suppliers with high quality forecasts without collaboration with sales and marketing. If the suppliers cannot get timely and accurate forecasts from ITAB, a block order will not be able to be implemented and more problems might occur as well. The purchasers need to have good communication with sales in order to get accurate forecasts. Then they need to interpret the forecasts based on their personal experience and professional knowledge. Updated forecasts and delivery schedules are supposed to be sent to suppliers every week. This process could be a lot of work because four purchasers in the purchasing department are responsible for more than 100 suppliers at ITAB. Coyle et al. (2003) points out that procurement process requires two major types of investments by the firm: time and information. The goal is just to invest enough time and information to satisfy customers' needs exactly. However, now to send real orders every time includes unnecessary repetition. If the working routine of purchasers using block orders could be well formalized, the workload in the purchasing department is not necessarily increased. However, it also takes time to formalize a feasible and efficient work routine in a new purchasing system. Many adjustments and changes may be needed. Purchasers also need time to get used to the new routine. Along with establishing a new routine, the distribution of tasks and responsibilities in the purchasing department has to be clear. Some problems have occurred in the past when ITAB sent a kind of block order to Bjerkås, which resulted in problems due to blurry allocation of responsibilities in the purchasing department at ITAB. Different purchasers in ITAB called Bjerkås several times regarding the same issue, which caused confusion. ITAB also sent Bjerkås a block order and then, at the same time, sent an additional order of the same item with different due dates which also caused confusion. These issues have occurred at one time only but they must not become frequent due to lack of organization.

The ability to plan the influx of materials from the supplier and control the deliveries has a great impact on a business inventory. According to literature when, how often, and the amount delivered are important issues to consider when settling delivery terms. The change to block order purchasing could affect the inventory of purchased items positively if the suppliers are able to meet the conditions that ITAB wishes to apply. In order for there to be a decrease in inventory,
ITAB should need more frequent, timely, and smaller deliveries on large items. Some items that are small such as that from Techno skruv will not take that much space and are rather modest in value compared to other items purchased by ITAB. For these items, the matter of inventory cost will be less significant. The larger items purchased, such as the boards purchased from CEOS, take up a large amount of space, and have a high worth. These will cause high inventory costs for ITAB. So will other products that are bulky and of high value (Coyle et al. 2003). If the suppliers are going to achieve this, there are several pre-requisites that need to be in place. Firstly, the information sharing between the two parties must be improved. Secondly, the suppliers must be able to increase their inventory holding or improve their production to meet a faster moving demand and thirdly, in some cases, they need to cope with an increased use of transport and higher transport costs.

5.1.3 Production department

The impact on the ITAB’s production flow by the influx of supplied material occurs mainly in two different places: the influx of raw material to the production and influx of semi-finished parts into the assembly of products. Then, of course, there is the delivery of finished articles that need to be in place before final delivery. Mainly four things affect the production. Firstly, that the delivery of products is on time so that production can commence when planned. Secondly, to receive a product of the right kind and the right quantity, so that they can produce the planned amount when they need to. Thirdly, to receive a product of the right quality so nothing needs to be discarded or replaced causing rescheduling or prevent production of products of bad quality. Fourthly, to pass on the right information to the production planner and production manager so that they can schedule the production correctly according to need.

In order for the implementation of the block order to have a positive affect on production it will have to affect either of these criteria. Considering the issue of kind, quality, delivery, and quantity there are mainly three issues that affect this. Firstly, is the supplier successful in managing their business well i.e. have a well functioning production and organisation, and good planning system. Secondly, the supplier needs to receive the information from ITAB on orders that is correct, easy to use, and timely so that they are able to meet their own requirements in production, from suppliers and so on. Thirdly, the relationship with ITAB is good so that they are able to communicate and discuss relevant issues such as terms of agreement, prices, and problems. If all these criteria are in place, the production should need less rescheduling, be easier to plan and improve on customer performance.

In order for block order purchasing to be a success the forecasting within sales must improve as well as the communication between the departments in ITAB. If this is the case, this should have a positive effect on the production as well. Literature states that, forecasts are the basis of the production planning. If the information improves within the forecast so should the planning assuming that it is properly managed today. The productions ability to produce the right quantity at the right time, as well as avoid rescheduling and delays should improve. Literature also says that improvements in this area should have a good effect on the inventory. Being able to produce at the right time will eliminate stock to build up due to frequent mishaps in interpreting the customer scheduling.

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5.1.4 Management

In order to see a positive effect of the change, management must be able to convey and show a clear strategy for the change as well as communicate the necessity of the changes, and the way it is to carried out, to all other employees (Bruch et al. 2005). It is thus important to involve sales, production, as well as purchasing since it will affect them all. These departments all play an important role in achieving a positive outcome of the project. It is important that management makes sure that everybody works along the same plan and towards the same goal so that the outset purpose is achieved (Bruch et al. 2005). If ITAB's managers have different ideas of what is to be done and how all these different goals are to be reached, they will work against each other. A change like this will also change the structure of the purchasing department. ITAB has anticipated this and it is one of their main goals by implementing the block order system, to make the purchasing department more efficient and trim the organization. However, it is still important that all employees are involved especially if downsizing is part of the plan. This can cause difficulties and lack of cooperation between staff if not managed well. When making the change it is also important that clear priorities be set as to what has to be done and to monitor the change in order to establish if it is a success or not (Bruch et al. 2005). It also makes the employees aware of the importance of the project. In ITAB's case, they will implement the system with a hundred suppliers each with a large portfolio of products. Thus, ITAB should carefully consider the amount of suppliers to implement the system with and in what order they choose to do so. It will allow them to monitor the progress more easily and respond to problems as they arise if they choose to do so in steps.

5.2 Possible effects in suppliers

5.2.1 Sales/ order department

If, the suppliers are going to see positive effects of the implementation of the block order the relationship between them and their customers must be good, can be developed and is based on good communication. It is important that there is a good foundation to build on when you are making a change. It is important that the suppliers are positive towards mutual development as well as have a positive attitude towards change itself according to literature. As pointed out before, important factors to create a well functioning relationship between two parties are trust between parties, mutual agreement on all issues, no abuse of power or entrusted information, that both parties perform as agreed, and that there is a well-understood purpose of the relationship that can be measured (McClellan, 2003).

The suppliers interviewed, all testify that they consider the relationship with ITAB to be stable, and that the relationship is open where they can easily discuss price issues, quality issues, and delivery problems. Most also express a hope of further development between the two companies. ITAB is a very big client to all of these suppliers and this clearly affects the response as well as the positive attitude towards the change. Businesses such as CEOs are very much dependent on acquiring large contracts such as ITAB in order to keep their business going. They are also more dependent on their clients and their suppliers and need to keep their good faith, as well as, sometimes make large concessions in order to keep them.
ITAB Jönköping however, being a sister company of equal status, has greater power and are less willing to make concessions than other suppliers do. All suppliers also testify to the fact that ITAB has currently difficulties letting them know on time when and what to deliver which has caused many problems for them in the past. However, they also say that they can easily discuss terms with ITAB and solve the problem. However, they also issue a concern that they need to receive better information in a timely manner if the implementation of the block order is to be successful. ITAB on the other hand also think that their relationship is good with the suppliers, although they have experienced delivery and quality problems with several of them. ITAB has expressed interest in developing relationships in order to improve on deliveries.

Another aspect of the relationship is that the supplier will take on a larger risk when receiving the block order with call-off. Interviewed suppliers said that they have to purchase more or store more for ITAB in order to meet ITAB's terms of the block order system. One of the objectives of the block order is that ITAB can adjust the amount they deliver by the variable demand of their customers. The variability will also increase the possibility that the suppliers will produce ahead of time and increase their inventory, as well as increase the transportation costs if deliveries were to increase in frequency. Bjerkås said they do not agree on changes that only eliminate cost within the customer company and transfers the risk and responsibility onto the supplier without consideration. All other suppliers also expressed certain terms for there being an implementation. As two parties in a business, ITAB and the suppliers try to maximize benefits and minimize the costs. Suppliers, who have less power in the relationship with ITAB, might consider more to maintain the cooperation with ITAB and make some concessions in the negotiations. For suppliers who do not consider ITAB as a high priority customer, negotiations might be tough. ITAB may have to reconsider the choice of supplier or way of ordering, in order to achieve what is best for them. Thus, ITAB will have to negotiate new contract terms as well as share the risk with the suppliers. The risk will be that ITAB needs to share the increased inventory costs in order to maintain the relationship. The suppliers expressed other terms such as ITAB must buy the whole amount bought in the block order even if the sales go down. ITAB Jönköping wants to get a fixed schedule in the forecast, which is only slightly adjustable. This is not good for ITAB Nässjö since one of the objects for implementing the block order system is to be able to adjust the deliveries according to their own customers’ adjustments. All of them also express that the information they get through the forecast must be good. ITAB is aware that concessions have to be made such as buying the full amount ordered from the suppliers. If these terms are resolved, it should have a positive effect on the relationship and the management of the orders.

Since all companies say that they have a good relationship with good communication at the present moment and show a wish to work more closely together it should be a good basis for the implementation of the block order and thus enable it to have a positive effect on both companies and their relationship.

Now suppliers receive fixed orders with delivery time from ITAB when ITAB needs the product. ITAB does not transfer forecasts to their suppliers. However, for block order purchasing, suppliers are supposed to receive block orders a few times per year and receive updated forecasts and deliver schedules every week. Interviewed suppliers testified that the greatest problems with ITAB today are that ITAB has problems to schedule their deliveries correctly. They also give too
short a notice on changes in orders, such as a change in the size of shipment, kind of product, delivery date and so forth. A block order with forecasts could be a way to solve the problem because forecasts are supposed to be updated and received regularly by suppliers. Therefore, suppliers can plan their purchasing and their production better. The possibility of meeting ITAB’s uncertain needs could increase. However, the success of the block order is largely affected by two factors. One factor is whether the forecasts could be timely transferred and updated. Another factor is whether suppliers are able to handle the increased information. If one of these two factors cannot be achieved it will be difficult for the suppliers and ITAB to receive all benefits from the block order system. All interviewed suppliers testified that their current system could handle a block order. The concerns were if they could get sufficient timely information from ITAB. Forslund (2004) pointed out that information quality could not be measured objectively; instead, the receiving supplier must judge its value. Therefore, the information quality from ITAB becomes the core issue in implementation of block order.

5.2.2 Purchasing
The effects in the supplier's purchasing departments differ depending on the characteristics of each supplier. For Hydro and ITAB Jönköping, the raw material is used in all their products. They just purchase one or two kinds of customized products for ITAB. This kind of standard material purchasing, will not be greatly affected by receiving a block order according to the suppliers. The routines and affects on their suppliers will be minor unless the need for a raw material will increase very heavily in quantity. However, the suppliers testify that a block order gives them the possibility to purchase bigger batches since they know more in detail what will be used in the near future. This will affect their purchasing price by lowering the prices, as well as their production planning. For customized products, the effects will depend on the products and sub-suppliers. If the products have a long lead time and are inexpensive, it is possible for suppliers to purchase and store it based on the block order and forecasts in order to meet ITAB's needs. If the products are voluminous or heavy, and/or have a high value, suppliers might choose to purchase just for ITAB's real orders as they are doing now. In CEOS, Techno skruv and Bjerkås, interviewees mentioned that they could purchase a bigger batch size if they received block orders. They will however have to make each purchasing decision based on the forecasts from ITAB and their sub-suppliers’ ability to deliver. Thus, the supplier's purchasing is largely dependent on if ITAB could transfer accurate and timely information.

5.2.3 Inventory, warehousing and transport
The block order creates an opportunity for the suppliers to know what the full amount to be delivered will be at the end of a period. This can help them order larger batches at the outset and store the products. This will ultimately increase their inventory and thus increase their costs. Techno skruv and CEOS act as an intermediary between their customers and suppliers. Included in this concept is to carry inventory for their customers and suppliers. They are thus able and willing to store more inventory. For Hydro, they have their warehouse near to ITAB in Sweden where they store products for ITAB. They think that they have the capacity to cope with the increase in inventory that could arise after the implementation the block order system. However, ITAB Jönköping and Bjerkås testify that
they have their own difficulties in handling their own inventory level and stated that it is possible to store more semi-finished or finished products to fulfill a block order, but their storage capacity it is limited.

Today, the delivery times are decided by fixed orders that ITAB sends to their suppliers. Delivery times might or might not change due to the implementation of the block order system. It depends when ITAB needs to have delivery based on their customers’ needs and their production planning. It also depends on the products and the power relationships between ITAB and their suppliers. For example, Technomark supplies screws and small metal parts to ITAB, which do not occupy much space. ITAB therefore might not need deliveries that are more frequent. However, in CEOS case, ITAB expect to increase the frequency of small quantity deliveries. ITAB is one of CEOS most important customers, so CEOS stated that they could deliver as ITAB wishes. Today, ITAB Jönköping, deliver to their sister company ITAB Näsåker every second week and they still hope to keep that delivery frequency. However, ITAB Näsåker is not one of ITAB Jönköping’s most prioritized customers and they are also their sister company with equal status. Thus, it can be difficult to convince ITAB Jönköping to comply with ITAB's wishes. The delivery times from ITAB Jönköping to ITAB Näsåker might not be affected at all. Both Hydro and Bjerkas, testify that they can increase the frequency of their deliveries as ITAB wish because they do not pay for the transport and their warehouses is not far from Näsåker. However, an issue that is related to delivery times is the potential increase in the workload of warehouse employees. Deliveries that are more frequent usually cause a greater work load due to loading and off-loading merchandise. However, when the inventory levels become too high it can also cause an increase in moving items within the warehouse to make room for more products. Thus, a balance must be found.

### 5.2.4 Production

In order for the block order to have a positive effect on the production of the suppliers, the suppliers must have the ability to use the block order and the information in it to enhance their production ability.

All suppliers say they have experience working with forecasting and incorporating them into their production planning. Some have the very similar systems of block orders with other customers as ITAB wishes to implement. Most suppliers also believe that the information received from the block order will be useful to plan the overall capacity used during a year and also to predict and plan batch sizes better. This should improve deliveries and lead-time in some cases. Many of these suppliers, like Hydro and CEOS, testify that their or their suppliers’ ability to use the forecast to improve their production planning is limited in periods of high economic growth. In these periods, such as now, most factories are fully booked for a very long time ahead. This on the other hand will probably change in recession periods for certain suppliers, when the information will be useful to incorporate in their planning. This is also dependent on the power relationship between supplier and ITAB. To date the suppliers try to accommodate ITAB’s needs as best they can but they need to consider other customers as well. A block order should mean more commitment to ITAB by the supplier since they purchase a larger volume at one time. In all, the block order should have a positive effect on the production of the suppliers.
Analysis
6 Conclusion discussion

In this chapter, we will discuss issues and come to a conclusion, which will answer to the stated purpose.

Based on the analysis of possible effects that a change to block order purchasing might have on ITAB if implemented, the authors conclude that the positive effects of block order purchasing will mainly take affect due to information improvements within ITAB and between them and their suppliers.

Well functioning relationships provide a good base to make the implementation of a change such as this. It is also a good basis for improvements in communication and information sharing. Properly structured and correct forecasts as well as timely and accurate information set the base for supplier improvements in planning and delivery. The commitment by managers and a good management of the change is also important, along with a willingness to improve. One of these issues or factors alone will not determine the success of the block order system; instead, the right combination will determine a positive outcome.

Due to there being good relations between the suppliers and ITAB, they have a good basis to implement the block order system. ITAB's managers are also set on improving the system. One difficulty that ITAB have to face though is that they have had and are having difficulties ordering on time and giving the suppliers proper information. The implementation of the block order could very well be a success provided ITAB can improve on their information quality. ITAB's current difficulties in this area as well as some expressed opinions of managers at ITAB, saying that they will not pressure their customers to improve the forecasts received from them, lead us to conclude that it will be very difficult for them to improve on their information quality. If such improvements are not made the authors believe that ITAB will suffer difficulties with the block order system and may not get the benefits that they aim for.

ITAB also wish to increase their efficiency when handling their purchases. This very much depends on the exact way they intend to change their working routines, which is yet to be established. If ITAB manages to improve on the information quality and thus be able to update and handle forecasting to the suppliers, as well as make the administration of this more efficient than sending orders of today, the efficiency should improve.

ITAB has also set out to implement this system with all their purchased items. ITAB sometimes only purchase two or three pieces of one item. It is questionable if implementing the block order system for such items would be beneficial. The block order system would be most beneficial for voluminous, or/and heavy, or/and expensive items purchased in rather large amounts. These items will have an effect on ITAB's inventory and need for warehouse space as well as transport costs. The authors wonder if the block order system would really be beneficial to apply to products such as Techno Skruv's whose products are rather small in volume and low cost compared to other main items ITAB buys. The thing that would benefit Techno Skruv, who always purchase the whole amount of a product in one go, is timely information on orders so that they can manage their lead times. They do state in their interview that it could help them order a head of time to avoid quality problems. However, the change to block order system from the current system cannot be that beneficial for these items. Techno Skruv's
products also have a very long lead-time since they are ordered from China and other parts of Asia. Techno skruv would thus need to receive a forecast far ahead of time in order to be able to reap the benefits of one. It is questionable if ITAB can make forecasts that are this sufficient considering their erratic customer demand. The longer the forecast horizon the more inaccurate a forecast becomes. Transporting these goods, several times in order to keep inventory down could not be beneficial. The increase in transport cost must be far higher than the savings one makes in inventory. This is of course based on pure speculation and no numerical facts. However, one needs to consider these issues. The author’s also wonders if it will increase the efficiency of the purchasing from the purchasing department to send a block order on these items. The authors would think that it would be more efficient to make one order, with one delivery, of these items, than spending time on forecasting and checking several small deliveries. Their volume is too low. It could be beneficial to apply to products such as CEOS’s though because they are large, heavy, costly and storage space intensive. Here ITAB could benefit from smaller inventory, and decrease handling of items in the production. Thus, the authors believe that the block order system is applicable to certain products and not to others.

The implementation of such a system should also be conducted wisely so the employees at ITAB as well as the suppliers will have time to adjust to new routines and be able to monitor the possible result. This will minimize administrative errors and misunderstandings.

To conclude, the authors of this thesis make no certain statement as to the success of the block order system. Its success will very much depend on how ITAB’s management decide to deal with the issues discussed in this thesis. Difficulties can be overcome and if they are not it will be questionable if the block order system will be a success.
7 Ideas for Further research

In this chapter, we will consider issues that can be interesting to look into in the future

The authors feel that some issues could be of interest for ITAB to look into further. In this study, the authors have concluded that it might not be suitable for ITAB to implement block order on every item they purchase. Many other popular inventory management approaches could be of interest though, such as Vendor Managed Inventory. However, most of these approaches also rely heavily on good forecasts and information sharing. The authors have not made a thorough investigation into each of these methods in this thesis, thus it will be difficult for the authors to make a recommendation as to which method should be more appropriate. Instead, the authors suggest that it might be beneficial to investigate other options. It might be hard for ITAB to find an alternative way. Maybe it would be more useful to use a combination of different approaches? Therefore, it could be interesting and beneficial for ITAB to investigate some of these issues further.

Another issue to consider is the supplier selection. In this study, there has been no discussion as to the suitability of the suppliers chosen to accommodate ITAB's needs. Perhaps it is possible to find others that are more suitable and maybe there are better ways to handle the selection? This could be interesting issues to investigate.
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Appendices Appendix1- Process mapping of total flow within ITAB

Customer

Marketing Dept. Meet project leader

Decide on project: Purchasing Production, Design team and Construction engineers involved.

Raw material delivery to production. Purchased by manufacturing.

Inventory raw material

Purchase starts

Develop product/fine tune construction

Inventory assembly and semi finished products

Assembly of products

Inventory of finished products

Transport

To depot

Installation by customer

Direct delivery to store

Installation by ITAB

12 weeks

5-6 weeks

Raw material delivery to production. Purchased by manufacturing.

Inventory raw material

Purchase starts

Develop product/fine tune construction

Inventory assembly and semi finished products

Assembly of products

Inventory of finished products

Transport

To depot

Installation by customer

Direct delivery to store

Installation by ITAB
Appendix 2-Questionaire issued to suppliers

We are two students that are currently writing our master thesis in Logistics. The master accounts for 60 points and is completely in English. The program is called International Business Logistics and Supply Chain management at the International Business School in Jönköping.

We have chosen to study the subject of how a supplier-customer relationship can change when a customer, in this case ITAB Shop Concept AB in Nässjö, wants to make their organization more efficient. We will research an issue (stated below) agreed upon with ITAB Shop Concept AB in Nässjö. In order to achieve this, we need to interview several people within the suppliers’ organizations. The questions we ask are meant to give us, and only us, as researchers as complete a picture as possible of the current situation as well as the possible effects the changes will have. This is to make sure that we can make a good analysis.

It shall be said that the purpose of this study is to make an independent and general study. Since this is a master thesis project, which aims to study a certain problem, we aim to be confidential and neutral. The answers we will receive will be accounted for in an official report. It shall be mentioned that ITAB will read this report and the report will also be sent to the people we are about to interview as well.

We will ask you to check all information that is produced in this interview and verify it before we enter them into a report or otherwise. If there are any questions you would rather not answer, it is of course up to you. We would like to record the interview. We will only use theses recordings in order to prevent us from forgetting information.

Issue to be discussed:

ITAB wishes to make their purchasing more efficient. In the hope of achieving this, they want to change their way of handling orders. Instead of their current way of sending orders, they want to start using block orders. The block order will entail the total amount of a product that ITAB wishes to buy from you during one year. Then you will receive delivery-schedules every week with call offs which show you when ITAB expect to have articles at their factory. You will also see forecast for the whole year. The orders and the forecasts will be sent to you over the fax or e-mail.
General questions about the interviewee:

1. What is your position in the company? (Or what are you responsible for?)
2. To what extent are you involved in the relationship with ITAB?
3. How long have you been working at the firm?

Questions about the customers and ITAB:

1. How do you work with your customers? (we would like to understand it in terms of your relationships with customers, customers classification and evaluation)
   • Who do perceive to be important and good customers?
2. How do you specifically work with ITAB today as a customer?

Questions about ITAB:

4. How do you think your current working relationship is with ITAB? (We would like to understand it in terms of your communication with ITAB, delivery, order handling, information transferring and difficulties.)
5. How do you perform the following activities, related to the orders from ITAB, in your company today? (order handling, information transferring, purchasing, forecasting, inventory, transportation, sales/marketing activities, production/production planning)

Questions about effects after change:

6. What do you think about this change? (we would like to understand it from your point of view)
7. What are the possible short and long-term effects for you? (we would like to understand how your logistics activities will be affected in terms of order handling, information transferring, purchasing, forecasting, inventory, transportation, sales/marketing activities, production/production planning)
8. What is your perspective on cooperation with ITAB in the future?
Appendix 3- Sample of questions and issues discussed with ITAB Nässjö

Overall Company information

- Map the entire flow from supply of material to customer design to delivery.
- How big is the company, how many departments, how many employed, how many in purchasing, how are you linked with other companies within the ITAB concern, what are your revenues and how are they divided upon customers/areas.
- Do you want customers and suppliers to be anonymous in our report?

Supplier/purchasing

- Map the flow of purchasing in detail (specific questions instead)
- How many people are working in purchasing today and what roles do they have.
- Who decide when, what and how much to purchase? And how?
- What does each supplier deliver, list of components materials.
- How does these fit into production and where
- What are the delivery times, lead times, why? (and how often do you purchase and how often do they delivery)
- What are the amounts of each product supplied how they fit into the process. Which are critical?
- What are the contracts and negotiated terms right now with each supplier (how do you contract the transportation, lead time, delivery time, costs, inventory and others)
- Who and how do you manage each supplier? (How is the relationship? Who is in control)
- What are the criteria for supplier selection, how do you choose them today. What are the important criteria that need to be fulfilled for each part that they supply in order to be acceptable for you?
- How do you rate the performance of your suppliers, what do you find are their weak points?
- What exactly are you future goals for each supplier? What do you want to achieve in the future! Do you have a plan as how to achieve this?
- Which are the people within the suppliers’ companies you wish us to interview?
- Is you ordered product a standardized product or customized product? How is the market?
- How are your future thoughts about this relationship? You discussed further development of the production planning. And forecasting
- How many current suppliers do you have?
- How do you classify your suppliers? If you do, how do you do that?
• How large are the volumes of goods received by each supplier compared to others, expressed as a percentage? Which are your main suppliers?
• Do you have goods that take up a lot of space within the inventory and which are the ones that take up less space?
• What value in SEK has every component you buy? Compared to others? High/Low value. (Higher value, higher inventory cost).
• Do you have certain components that are critical to you? Which ones will affect your production the most if you do not receive them?
• What is the frequency of purchase from each of your suppliers?
• How many of your suppliers are located outside of Sweden? In addition, what do you purchase from these suppliers?
• Do you think they will pose a greater difficulty than your Swedish suppliers will if you decide to change to order based production?
• What are the lead times of your different suppliers i.e. how long does it take from you sending an order until you get a delivery? What are the negotiated delivery times?

**Questions related to specific suppliers:**

• Is the supplier involved in the design of different products?
• How do you judge the five suppliers? (their lead time, products price compared to other suppliers, delivery time, quality)
• What are their weak points?
• How long have you been working with each supplier?
• Does production purchase/handle the day-to-day contact with CEOS? You mentioned at our last meeting that the production handled the purchase of raw material that went directly into your own production. Is this true for CEOS?
• How do you check the quality of products from the five suppliers?
• If you implement block order, you will promises to buy a certain amount once a year and you are bound by it? Is this correct?
• How do you think the communication is with the suppliers when errors occur? (When a product is for example delayed, or when there are other delivery or Quality problems?) Or just in general? (day to day communication)
• Do you think there is something specific that we should consider when meeting with any of these suppliers?
• How do you negotiate the transportation with your suppliers, especially the abroad suppliers?
• Do your suppliers have the integrated or connected IT-system with yours? If they do, how many of them have it? If they do not, usually how do you communicate with them?
• How do you order now? Do you send forecasts and orders? Alternatively, how do you do this?
• What kind of relationship do you have with each of your suppliers? Do you have close interaction with some of your suppliers? Do you only have what is called an arms-length relationship?
• Do you have ‘relationship-discrimination’ with them according to their importance?
• What is the current biggest problem with your suppliers, in communication, relationship or some other aspects?
• What do you expect from your suppliers? What are the selection criteria you have when selecting certain suppliers?

**Production**

• Map the flow in detail in the production/identify bottlenecks
• How do the products fit into the production? W
• What are the lead times in the production?
• How will the production time change in production? How will the capacity change? What are you planning to do? Do you need instant supply of all products or are you prepared to store some of them?
• How do you plan the production?
• What kind of planning system are you using to plan the production and are you satisfied with it? Ex. movex etc.
• What is the current most serious obstacle you are facing in your production planning?
• What is your perspective for your production planning based on order-based production strategy

**Production planning**

• Map the production planning how it works. How do you get the information from marketing, purchasing and fit it into the scheduling in production? How do you plan the production today and what are the capacities used today?
• What do you usually do when there is out of stock?
• How will it affect this procedure when you only schedule direct orders?
• How does this fit with the supply?

**Inventory/forecasting**

• How do calculate your inventory? ABC method? EOQ? How do you measure levels and re-supply? How do you keep track of it?
• What are the smallest quantities of products that you need to purchase each time? For each product.
• Have you ever considered turning to a 3PL firm to handle your inventory?
• What is the capacity of your warehouse?
• What is your usual variety of your inventory?
• Do you think the inventory is the vital or core issue you need optimization?
• What is your perspective for the inventory management?

**Transportation**

• Your suppliers transport the goods. Do you know the cost of this? Is it very expensive? Is it managed well?
Information exchange

- How does your MRP system work
- How will the new system that you are installing work.
- Who has access to the computer system? Is it widely used?

Customers

- What lead-time do you have for the customers?
- How does the order information from customers to ITAB go? How does the information reach purchasing or production planning