

## **Supplier selection in the sourcing process**

**Case company: Costo Ltd.**

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Degree programme

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<p>The purpose of this thesis is to look into the sourcing process of the case company Costo Ltd and especially its supplier selection. Costo Ltd. is a newly founded small Finnish design company that is specialised in designing accessories. The focus in this thesis is the supplier selection process of fabric suppliers; specifying the needs, determining the criteria, finding the potential suppliers, evaluating the suppliers and finally choosing one. It has been stated by multiple theorists that organising the sourcing process will improve the purchasing performance via efficiency and cost savings.</p> <p>The theory part of the thesis starts with the wider context and narrows down toward the end. The theory starts with the purchasing function, moves on to the sourcing process and finally ends with the supplier selection. The theories were collected from multiple academic books, articles and Internet sources. It is important to understand the importance of supplier selection in the purchasing process and the kinds of initial decisions that have to be made in accordance with the company's strategy.</p> <p>The research method was qualitative and the interviews were conducted in spring 2012. The interview format was semi-structured and it included several open-end questions as well as a survey form. The research was highly dependent on the interview of Costo personnel, but a representative of one of Costo's main suppliers, Kvadrat, was also interviewed.</p> <p>The results of this thesis reveal the evaluation criteria behind supplier selection, the different methods through which the suppliers can be obtained and the evaluation of these potential suppliers. The benefitting parties of this thesis are thus the commissioning company, the author and other parties interested in the supplier selection process.</p>	
<p><b>Keywords</b> Supplier selection, sourcing, purchasing, supplier selection criteria</p>	

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# 1 Introduction

These days the hot topic of supply chain management field has been related to the globalization and issues arising from that. Increased competition has made finding the competitive edge even more difficult. Successful purchasing is one factor that can enhance competitiveness of the company. For the manufacturing industry purchasing can total up to 60 % of turnover meaning that well performed purchasing can certainly lead into major cost savings. However, low cost is not the only source of competitive edge; consumers and companies are more and more interested in the ethical and environmental side of the products. (van Weele 2010, 5, 185.)

Awareness of supply management and purchasing as a part of the strategic decision making has increased over the past decades (Quayle & Jones 1999, 2). Selecting the right supplier is more commonly considered as any other risk decision made in the company. The search for new suppliers is needed when the current suppliers are lacking capacity, flexibility, suitable products or when the performance is not adequate. (Östring 2004, 3.) The right supplier can deliver the right products, at right quantities, at the right price and at the right time (Burt, Petcavage & Pinkerton 2010, 247).

This thesis studies the sourcing process of a small Finnish design company Costo Ltd. The author had her specialisation studies in supply chain management and has high interest in the purchasing function. The international aspect was gained through interviewing one of the commissioning company's supplier, and by investigating the overall sourcing process. The author contacted the case company because of a news article, and they showed interest in the thesis project offered. The topic was formed together with the case company, but the author suggested paying attention to the supplier selection as it is a critical phase in the sourcing process. Costo has future plans to expand their business, and finding the best practises helps the company function in the long run. The benefitting parties of this research are first of all the commissioning company Costo, the author and other parties interested in supplier selection process. The commissioning company will get recommendations for sourcing more efficiently by improving supplier selection and reconsidering the initial sourcing decisions. The

thesis also gives suggestions for future research and food for thought how the company could be developed.

This project helped the author develop her professional skills and gave her insights on the actual purchasing process of a small newly founded company. Taking a closer look at the company's purchasing gives practical experience that can be useful in the future working life. Also, getting a closer view to the clothing and design industry has given the author new thoughts about future work opportunities.

## **1.1 Thesis objectives**

The main objective of this thesis is to develop the supplier selection process of Costo. To understand the role and nature of the supplier selection in the case company, the whole sourcing process was analysed. The earlier sourcing has not been very organised as the company is quite new and still small. For the future business it seemed important for Costo's founders to look into the current situation and how the sourcing could be developed. The research problem and the investigative questions are the following:

RP: How to improve the supplier selection of Costo Ltd. in order to find the best fabric suppliers?

1. What kind of sourcing strategy is Costo Ltd. implementing currently?

The aim of the first IQ is to describe the current sourcing done at the case company. The sourcing strategy is analysed through different decisions made in the company: single or multiple sourcing, decentralised or centralised location of the purchasing authority and sourcing either locally, nationally or internationally. Also the business relationship-aspect and the nature of the products purchased are considered.

2. Which supplier selection criteria is Costo Ltd. using?

The aim of the second IQ is to map the selection criteria behind the supplier selection. The question also includes the aspect of evaluating the importance of each selection criterion.

3. How should Costo Ltd. evaluate the potential suppliers in order to find the best ones?

The last question offers recommendations in terms of evaluation of the suppliers. The author considered the evaluation phase crucial for the success of the supplier selection process. The recommended evaluation method is thus based on the author's own professional skills.

The author chose the qualitative research method as she was looking into inner meanings and thought that this method was more appropriate than the quantitative method. The primary data was collected via interviews and a survey form about the importance of the criteria. Additionally, multiple theories in the field of purchasing, articles and Internet sources were studied in order to create a theory base for the research. By using all these sources of information, the knowledge base is more trustworthy and applicable to other businesses as well.

Table 1 shows the connection between the theory and the empirical part. The results and overall discussion are presented in chapters 6 and 7.

Table 1. Overlay matrix

<b>Research Problem (RP)</b>	<b>Investigative Questions (IQs)</b>	<b>Theoretical Framework</b>	<b>Measurement Questions &amp; Measurement</b>	<b>Results</b>
How to improve the supplier selection of Costo Ltd. in order to find the best suppliers?	What kind of sourcing strategy is Costo Ltd. implementing currently?	Purchasing, sourcing, Kraljic matrix, supplier relationships, traditional purchasing, competitive bidding, reverse auction, two-step bidding	Interview with Costo representatives	6.1
	Which supplier selection criteria is Costo Ltd. using?	Supplier selection, evaluation criteria	Interview, Criteria evaluation form	6.2
	How should Costo Ltd. evaluate the potential suppliers in order to find the best ones?	Evaluation criteria, weighted-factor analysis, purchasing professionals, cross-functional teams	Secondary research.	6.3

## 1.2 Key concepts

The key concepts of this thesis are purchasing, sourcing and supplier selection. These key concepts provide the reader with basic knowledge in order to understand the framework of this thesis.

Arjan J. van Weele (2010, 8) characterizes **purchasing** as a process of buying that involves determining the need for purchasing, selecting the supplier, arriving at a proper price, specifying terms and conditions, issuing the order or contract, monitoring the delivery and ensuring the payment. However, in this thesis only the sourcing part of the purchasing process is taken in consideration. **Sourcing** includes the steps of counting the need, determining the specifications of the products or services, supplier selection and contracting (van Weele 2010, 9).

**Supplier selection** is part of the sourcing process, and it is a critical part in the success of the whole purchasing process. Van Weele (2010, 29) defines supplier selection as a set of multiple activities required to select the most potential supplier. The process includes multiple actions such as deciding on the method of subcontracting, creating first drafts of the supplier qualifications, “bidders’ list”-preparation, preparing the request for quotation, analysis of the bids received and then finally choosing one or more suppliers.

## 1.3 Structure

This thesis starts with the introduction and moves on to the theory part. As can be seen in the figure 1 below, the theory first tells about the bigger picture in the background of purchasing, then moves on to sourcing and finally ends up to the supplier selection. It is important to understand how important part supplier selection is of the whole purchasing process. In chapter 4 the case company is introduced in detail and the supply chain is shown in a flow chart. After the company introduction, in chapter 5, the decision to use qualitative research method is justified, and the whole research process is explained in more detail. The actual results of this research are stated in

chapter 6. Finally, in chapter 7, the whole process is discussed, the recommendations are stated and the author's own learning points are presented.

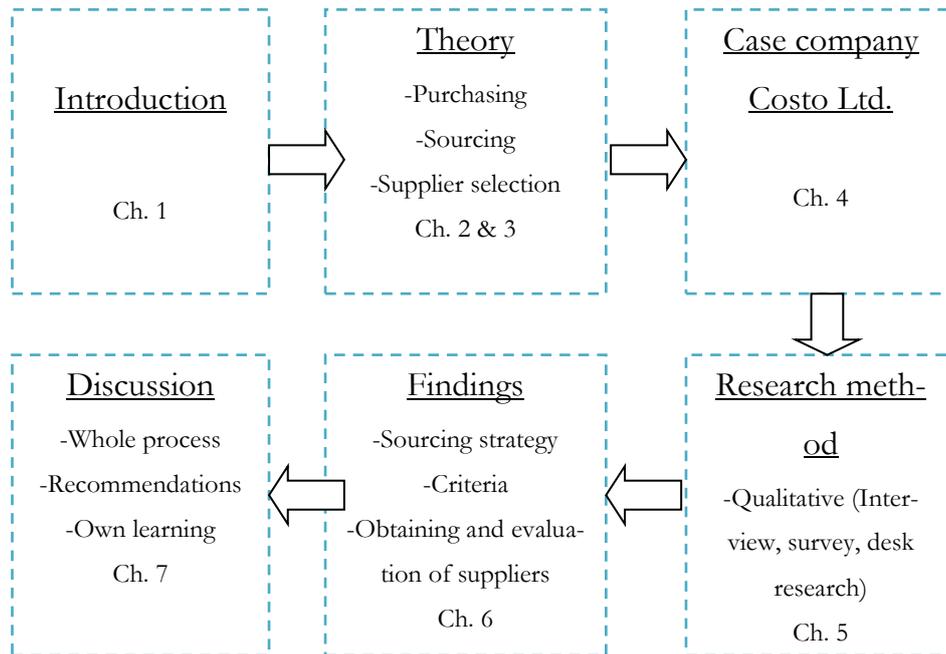


Figure 1. Thesis structure

## 2 Purchasing function

This chapter describes general meaning of purchasing, the importance of purchasing and different types of purchases. In order to understand the importance of supplier selection, the reader has to first understand the purchasing function. The theory part starts with the wider context and narrows down towards the end.

### 2.1 Purchasing

Everybody is familiar with buying goods, but there are differences in the buying-process of a consumer, a company or a public organisation (Koskinen, Lankinen, Sakki, Kivistö & Vepsäläinen 1995, 34). A consumer does the purchasing usually quite straight forward: he goes to buy a product to fulfil a need, he hands over the money or a bankcard and gets to take the product home with him. However, in a company the purchasing process includes many different phases as well as in public organisations where the process is even more time consuming (Koskinen, Lankinen, Sakki, Kivistö, Vepsäläinen 1995, 35). Purchasing can be described simply as buying goods and services for a company but the concept actually includes all activities needed for delivering short- and long-term functions (Cavinato 1984, 3). As can be seen in the figure 2 below, Arjan J. van Weele (2010, 8) characterizes purchasing as a process of buying that involves determining the need for purchasing, selecting the supplier, arriving at a proper price, specifying terms and conditions, issuing the order or contract, monitoring the delivery and ensuring the payment. In this thesis the concentration is on the supplier selection and other factors are left to the side lines.

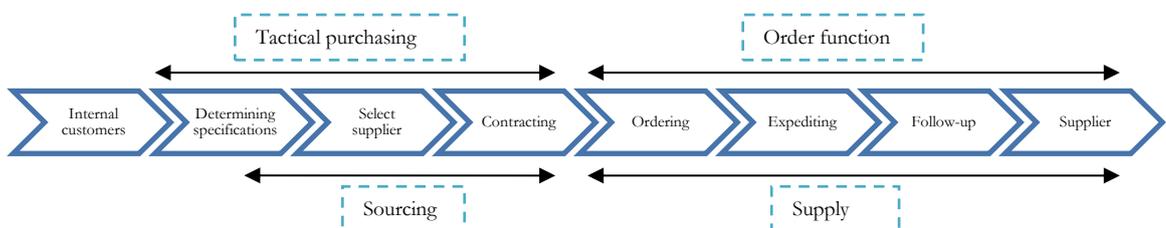


Figure 2. Purchasing process (van Weele 2010, 9)

### 2.1.1 Types of purchases

Companies purchase many kinds of products and services. The nature of the products and services purchased depend on the line of the business and strategy. Gadde and Håkansson (1998, in Jonsson 2004, 81) separate the types of purchases into components, raw materials, major equipment, MROs (maintenance, repair and operations) and services. Handfield, Monczka, Giunipero and Patterson have quite similar distinctions between the types but the differences are more accurate than the one presented by Gadde and Håkansson. Handfield et al. (2009, 70-71) present the types of purchasing as following:

- Raw materials
- Semifinished products and components
- Finished products
- Maintenance and operating items
- Production support items
- Services
- Capital equipment

Raw materials include such items as coal, petroleum, soybeans and metals. The common factor in raw materials is that they have not been processed by the supplier into any product, and the materials are of different quality. More processed items – semi-finished products and components - are purchased to support the production of the final product. For example, in car production the semi-finished products and components include tyres, pedals, gear shift and shafts just to mention few. Finished products are purchased for internal use and for resale directly. Many companies are nowadays doing only the designing of the product and outsource or subcontract the production. Companies that have succeeded with only designing the product include such major players in the markets as Nike, Hewlett-Packard and Cisco. (Handfield et al. 2009, 70.)

The production support items contribute to the firm's production operations as cartons, tapes and bags. The production support items thus are different from mainte-

nance and operating items such as machine spare parts and office supply. The maintenance and operating items have often high dollar value and companies have started to pay attention to these types of purchases more. Also, attention to service purchasing has increased: companies want quality service with low costs. The usual services that companies want to purchase include cleaning, repair, maintenance and consultancy. The long term purchases, that are meant to use over one year, are called capital equipment purchases. These kinds of purchases include e.g. computer systems, machinery and furniture. The capital equipment purchases are sensitive to general condition of the economy; if the economy is in downturn the company might decide to delay the purchase. (Handfield et al. 2009, 70-71.)

### **2.1.2 Green purchasing**

The globe has a limited amount of natural resources, the climate change seems to be inevitable and the environment is roughly restrained. Right choices now in sustainable procurement will improve cost-effectiveness and make it easier for the future generations to handle the future of this planet. (Lehtomäki 2011, 3.) According to International Institute for Sustainable Development (2012) green procurement is seen as purchasing the set of products and services that minimize the impacts on environment. Purchasing's minimal impact on environment includes two points of view: purchasing materials and goods that are recyclable and the "green"-factor throughout the supply chain. In order to assess the sustainability of the supply chain, all links have to be evaluated; raw materials, manufacturing, transportation, warehousing, usage and reverse logistics. All in all, the simpler the supply chain the easier it is to evaluate in terms of sustainability. In production level, green products are usually produced in a way that consumes less resources or more sustainably. (IISD 2012.)

One reason for green procurement becoming more popular is that it can help creating a competitive edge. Also different stakeholders – investors, consumers, shareholders – are demanding that environmental factors are taken in consideration. However, there are many challenges that the green procurement has to win. First one is the assumption of the high price: many people are under the impression that green products are always

more expensive. Sometimes that might be the case, but it is still often cheaper when looking at the life-cycle of the product. The second challenge is to get the company committed to the green procurement. If the company really wants to change their habits, they have to make it clear for everybody that this is the company policy from now on. (IISD 2012.)

Although green purchasing has become more popular, the knowledge level about green procurement is not sufficient in many companies. Hence, proper introduction of green procurement to is needed in many companies. Another challenge is that there simply are no alternatives, but it is expected that the growing demand will improve the availability. If the company has clear specifications about what they are demanding from the purchased product in terms of sustainability, the suppliers really are under the pressure of meeting these requirements. (IISD 2012.)

### **2.1.3 E-purchasing**

Chartered Institute of Purchasing & Supply (2012, 2) defines e-purchasing as the use of information technology to control and carry through purchasing and supply chain management procedures. E-purchasing has increased and improved along with the development of the technology, and nowadays it can involve multiple aspects of buying process: requisition, authorisation, order, receipt and payment (Lysons & Farrington 2012, 185). Although technology made e-procurement possible, the changes in processes, procedures and perspectives have brought the benefits of e-purchasing to life. For example, e-purchasing enables the evaluation of the trading cycles and thus shortening the lead time seems more realistic. Another change is that e-purchasing empowers the end-users to use the service independently; the customers can put the order in by themselves. In terms of supplier selection, e-purchasing has made it possible to utilize on-line bidding and e-purchasing. (CIPS 2012, 1.)

E-purchasing enables the connection to different information sources such as e-marketplaces and portals. The benefits of e-marketplaces vary between the lines and sizes of business. In general level the benefits are the better opportunities to create new business relationships, greater transparency through available information on prices

and stock levels, and overcoming the problems with working on different time zones. (Trkman & McCormack 2010, 338-339.) The e-marketplaces, portals and other websites can provide very important information about the suppliers. The basic information about the suppliers can be used in the initial stage of the supplier selection process. Connection to other supply chains can be also created via e-purchasing; the access can be created to real time information sources such as extranets, electronic data interchange (EDI) and business-to-business websites for specific industries (eHub). (CIPS 2012, 2.)

The control of different internal information, such as catalogues, lists and inventory levels, is easier with the correct systems. The proper utilization of the technology and systems require the right person having access to the right information. When employees are trained to use the technology and systems properly, also the information flow improves. The technical solutions are becoming irreplaceable because of the complex processes. For example, in the manufacturing businesses the connection to the Materials Resource Planning (MRP) system is very important and it would take a lot more resources to do the same things without the system. The systems in use also enhance the reliability of the information available. (CIPS 2012, 2.)

The change for e-purchasing is not simply switching for interactive procedures and automating some of the processes, but fully understanding the current situation and improvement possibilities. The old working habits should be examined carefully before making major changes. The change requires continuous development in order to make the programs fit the company's current business functions. To get the best out of e-purchasing, the solutions available for e-purchasing should be carried through in all functions. The gained results can lead into improved management of information, shorter lead time and lower transaction costs. It should not be forgotten that the benefits of e-purchasing do not only come to the purchasing company, but also to the suppliers. The suppliers can get savings in transaction costs and also shorten the cycle times. The improved information flow between the customer and the supplier enables lower stock levels and consequently reduced warehousing costs. Moreover, the im-

proved information flow helps forecasting the volumes needed in the future, and seeing how the business is developing. (CIPS 2012, 2-3.)

However, many of the benefits have been considered in cases when purchasing and supply chain management strategies are not really thought through. The fact that e-purchasing will lead to enhanced knowledge management is based on the earlier situation when the sourcing was not well organized. Still, e-purchasing might bring some problems with it. Companies implementing e-purchasing have to make sure that the costs are not just reallocated to another department of the company but handled in a sustainable way. In order to manage the systems and interfaces, the firm might have to hire a person with the required skills or outsource the system control to a third party. Also the suppliers might have to hire extra personnel for the system control and for making information available online e.g. catalogues. All in all, the suppliers should not have to suffer from the change to e-purchasing but develop their business along with their business partners. (CIPS 2012, 2-3.)

## **2.2 Importance of purchasing within supply chain**

Competition in the markets has become tougher, and successful purchasing has become even more important. Several companies spend over 50 % of their turnover on purchasing, so it definitely shows on the bottom line. (van Weele 2010, 12.) According to Handfield et al. (2009, 7) the cost savings in successful purchasing are managed through hard bargaining and building up relationships with the suppliers to jointly pull down the expenses.

Arjan van Weele (2010, 3) states that successful purchasing can first of all be seen as lowered quality costs; the right suppliers do not need as explicit quality control done by the purchasing company as do the worse performing suppliers. Additionally, the number of complaints from the end customers reduces. Secondly, successful purchasing can result in product standardisation: the firm can purchase fewer components from fewer suppliers. Product standardization enables lower production expenses and closer business relationships with the few chosen suppliers. The right suppliers confirm the security of the supply and also offer the best value for money (Coulson-Thomas 2012).

Well performed purchasing might also lead into innovations and new design solutions, but more often it can be perceived through close relationship. A good business relationship is beneficial for both parties in the long run. (van Weele 2010, 3-5.)

DuPont analysis reveals how the purchasing affects return on assets (RONA). DuPont is a financial tool that helps calculating the return on investment based on sales margin and turnover level. There are three levels in which the results can be seen; through reduction of all direct material costs, reduction of the net working capital employed by the company and enhancing the revenue gaining potential. (van Weele 2010, 13-14.)

### 3 Sourcing

This chapter focuses first into the sourcing function and then to the supplier selection process. The initial decisions in sourcing function include determining between single and multiple sourcing, sourcing locally, nationally or internationally and how to place purchasing authority. When starting the supplier selection process, the group of suitable suppliers have to be discovered. The initial stage of discovering the suppliers can be conducted by using the information available in trade directories and other public sources. A deeper analysis might require sending requests for information.

#### 3.1 Sourcing strategies

A company should choose the sourcing strategy based on the supply risk and purchasing's impact on the financial results. The supply risk consists of multiple factors such as availability of substitutes, a buyer's share in sales turnover, market structure, branded versus standardised product and detailed logistics requirements. (van Weele 2010, 193.) Jonsson (2004, 89) states that every company uses a different sourcing strategy, and creates a supplier relationship depending on the purchase need.

Peter Kraljic (1984, in van Weele 2010, 197) created The Kraljic matrix that shows the appropriate strategy depending on the type of the product, impact on financial result and supply risk. In figure 3 below there are four different types of products and four different strategies to be carried through depending on the impact on the financial result and supply risk. However, Jonsson (2004, 89) argues that strategic sourcing is unique to each company, and not one sole sourcing strategy can lead to success.

As can be seen in figure 3, performance based partnership is optimal for strategic products as the supply risk is high and purchasing's impact on financial results is high. The backbone of the whole strategy is the successful supplier selection; the suppliers are screened in terms of references, financial situation, research and development (R&D) aspects in the past and in the future, capacity, logistics functions and quality control. (van Weele 2010, 198-199.)

The Kraljic matrix shows that competitive bidding is the best choice for leverage products with low supply risk and purchasing's high impact on the bottom line. Leverage products make up a high percentage of the purchasing company's profit, and there are multiple suppliers in the markets. For bottleneck products with high supply risk and low impact on the bottom line, secure supply and search for alternatives is the right choice. Bottleneck products are supplied only by one supplier or there is another reason for unsecure supply. For routine products, such as office supplies, the systems contracting and e-commerce solutions is the best option. In these cases the supply risk is not significant, and purchasing has low impact on the bottom line. (van Weele 2010, 199.)

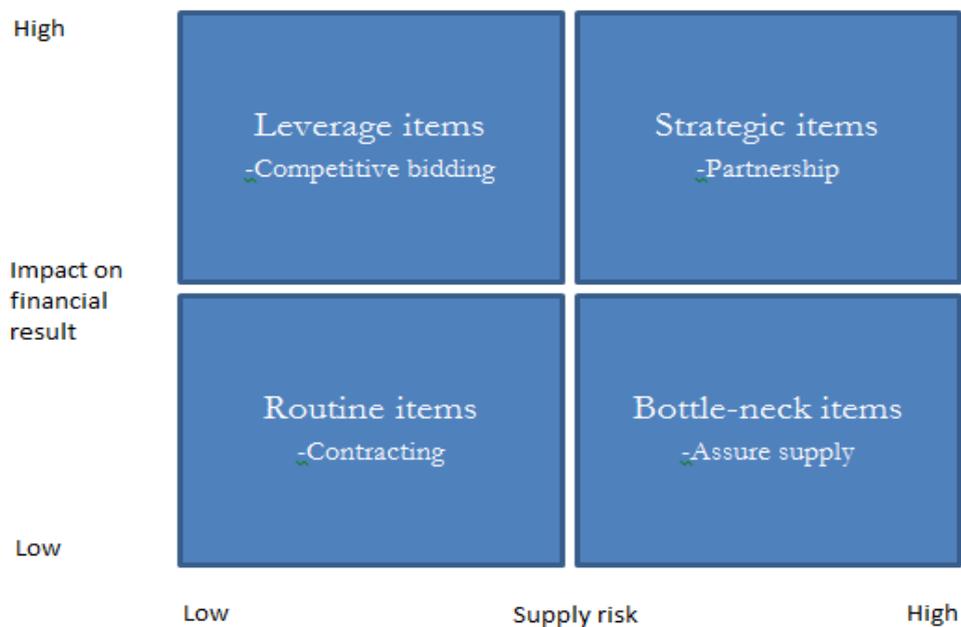


Figure 3. Kraljic matrix (van Weele A. 2010, 197)

As can be seen in figure 3, also Kraljic was well aware of the different kinds of business relationships. Well-managed supply chain relationships can bring major benefits to the company. According to Handfield et al. (2009, 122-123) a close relationship between the buyer and the seller can bring many advantages such as trust and long-term contracts. Mutual trust enables sharing of more sensitive information e.g. cost structure of products and cost-reductions can be thought through in joint effort. Long-term contracts are more likely to be made when the seller-buyer relationship is close; both of

the parties trust each other are able to see the benefits over a long time period. Long-term contracts give an incentive for the supplier to invest in advanced facilities, get involved in the development of technology and more importantly sharing risks. (Handfield et al. 2009, 123.)

Langley, Coyle, Gibson, Novack and Bardi (2008, 110-111) introduce the intensity of the relationship as three alternatives: transactional, collaborative or relational. The transactional relationship means that the company sees the supplier only as a vendor whereas in relational situation the relationship reaches the strategic level. In strategic relationship the company defines the business objectives and practises together with the suppliers. The transactional relationship involves quite little discussion and involvement in each other's businesses; mainly just the money and goods are transferred. The relationship type between of these two is partnership, which brings benefits to both of the parties but is not as involved as strategic relationship. (Langley et al. 2008, 110-111.) Langley et al. (2008, 111) list the variables in the business relationship as following:

- Duration
- Obligations
- Expectations
- Communication
- Cooperation
- Planning
- Goals
- Performance analysis
- Benefits and burdens

Each business relationship consists of these elements, and by affecting these elements also the benefits of the relationship can be increased. However, the benefits should not be just one sided or else the business relationship will not be on a solid base. (Langley et al. 2008, 111.)

### 3.2 Single versus multiple sourcing

Risk management is usually discussed when choosing between single and multiple sourcing; single sourcing increases the company's exposure to risks in uncertain environment. Multiple sourcing is less risky, but the management of many suppliers is often more difficult and more expensive than in single sourcing. (Costantino & Pellegrino 2009, 27.)

Young (2010, 254) says that the most valuable argument for single sourcing is that when there is a shortage, the supplier will take care of your needs because you are an important customer. Although the risks in sourcing from one supplier are bigger, the commitment and trust between the supplier and the company enable the success of this strategy. Other remarkable advantages of single sourcing are lower costs resulting from the economies of scale, easier control over quality, increased influence over the supplier and possible lower freight costs. Single sourcing results in lower costs than in multiple sourcing because of standardised processes, and reduced need to expedite and inspect. (Young 2009, 254-255.) Costantino and Pellegrino (2009, 28) also mentioned the supplier's commitment on the results; in single sourcing the suppliers are more committed to the business relationship, and it can bring many advantages.

Young (2009, 255) introduces the 70-30 approach that combines the benefits of multiple and single sourcing. The 70-30 approach means that the company gets 70 % from one supplier and 30 per cent from the other. With the bigger supplier the company can gain economies of scale, and the smaller one increases the competition. If the supplier with the 70 % does not do proper job, the supplier with 30 % can get a bigger share. Still, Young emphasizes the multiple sourcing approach in cases where there might be shortages, strikes or other such problems to get the needed supply. Multiple sourcing also maintains the competition and pushes them into better performance. Technology companies almost without a question are sourcing from multiple suppliers. They have huge amount of components to purchase, and the price versus quality competition is fierce. To get the latest developments, the technology companies are checking up with the suppliers all the time. In order to choose between multiple or single sourcing, the risks and costs have to be analysed. (Young 2009, 255-256.)

### **3.3 Sourcing locally, nationally and internationally**

Young (2009, 256) defines local sourcing as sourcing in the same region or city where the headquarters and facilities are, whereas national sourcing means sourcing in the same country from multiple locations. The difference between a national and an international sourcing is that the international source has its headquarters in a different country than the purchasing company. (Young 2009, 256.) Handfield et al. (2009, 220) also introduce the term “global sourcing”. Global sourcing can be interpreted as international sourcing and the term is connected to the globalisation phenomenon; the world is not just a market but also a source of supply.

David Ricardo’s (1821, 307) theory about the comparative advantage indicates that global sourcing is more beneficial for all parties. The theory states that each country should specialize in those products or services which it can produce more efficiently than other countries, and purchase the goods and services that it does not have the advantage in. However, the theory does not include all factors such as the environment and security of supply, and cannot be interpreted as such.

Companies use the local suppliers whenever it is beneficial to the company. In a Stanford University research it was witnessed that about 75 % of the purchasing companies are willing to buy locally if there are suitable products available. If the company is implementing just-in-time ideology, the local sourcing can be very beneficial in comparison to other sources of supply. The advantages of local sourcing are: collaborative relationship with the supplier, more reliable deliveries and lower transportation costs. (Young 2010, 256.)

### **3.4 Decentralised versus centralised purchasing**

Handfield et al. (2009, 164) discusses the different placements of purchasing authority: decentralized and centralized. Centralized purchasing means that the company has a certain department or a person who performs the purchasing for the whole company regardless of how many business units there might be. Centralised purchasing handles

the bids, quotes and other relevant issues after the project managers, production planners or the system has informed the need for a purchase (Processor 2012). When the purchasing is done separately in each department, business unit or site, the purchasing is defined as decentralised. (Handfield et al. 2009, 164.)

Constantly changing organisation structures due to mergers, acquisitions, global competition and development of technological solutions has driven companies towards the centralised model since 1990s. However, the combination of both centralized and decentralized models has also gained recognition. The hybrid-model takes advantage of the centralized model in purchasing items common to several businesses, and decentralized in site or unit specific purchases. (Handfield et al. 2009, 165.)

According to McCue and Pitzer, centralised purchasing have the advantages of more efficient inventory control, lower staff costs and reduced amounts of overhead. Centralised purchasing also supports the professional development of the purchasing staff and thus contributes to the supplier relationship management positively. The focus of the know-how usually improves efficiency in the contracting phase, because the purchasing professionals have a clear image of the markets and have the management's support. Also, bulk discounts are achieved more likely via centralized purchasing as the amounts are usually bigger. However, the local discounts might not be gained if the company is multinational. Centralized purchasing is no longer beneficial if the purchasing unit gets too big and complex. In small companies the cost effectiveness is lost with additional staff or technological solutions that eat the profitability. (McCue & Pitzer 2000, 400-420.)

Handfield et al. (2009, 169) present the advantages of decentralised purchasing. Firstly is mentioned the enhanced responsiveness of purchasing. The purchases are approved faster when e.g. the project manager can approve the purchase by himself and there is no need for middle-men. The decentralised approach also makes it easier for the buyer to forecast the future needs more precisely as he is familiar with the processes and practises in this specific business unit. One major disadvantage is the duplication of assets; the systems and know-how have to be divided into multiple locations as pur-

chases are done by multiple people in different places in the organisation. Other issues to consider are the unguaranteed compatibility of technology and the complex management of the total purchases. (Handfield et al. 2009, 169-170.)

### **3.5 Supplier selection**

The sourcing process starts with the specification phase i.e. the company describes what they are looking for in a product and some details about the potential supplier. After the company has decided to buy a product or activity, they have to determine the functional and technical specifications. The information explained in the specification depends on how technical or detailed the product or activity is. The functional and technical specifications are part of the purchase order specification that includes information on quality, logistics, maintenance, legal and environmental requirements and the target budget. (van Weele 2010, 32-33.)

Supplier selection plays a major role in successful purchasing. Mwikali and Kavale (2012, 189) present the supplier selection as a five phase process: 1) realizing the need for a new supplier 2) determining the selection criteria 3) pre-qualification 4) Choosing the supplier and 5) monitoring. Another definition of supplier selection process according to Khaled, Paul, Chakraborty and Ayuby (2011, 3) includes seven steps and is more detailed than the process presented by Mwikali and Kavale. The supplier selection process, shown in figure 4, starts with the identification of key supplier evaluation categories. After that each evaluation category should be weighted according to the importance and the same should be done to the subcategories. Once the weighting has been done, the scoring system should be developed. Usually it is a scale from 1 to 5, but also wider scales can be used. The fifth step is to evaluate the suppliers by scoring the suppliers from 1 to 5 on each category and count the total score per supplier. Based on the evaluation, the purchaser can do the final decision to choose one supplier, but the performance should be monitored continuously. (Khaled et al. 2011, 3.)

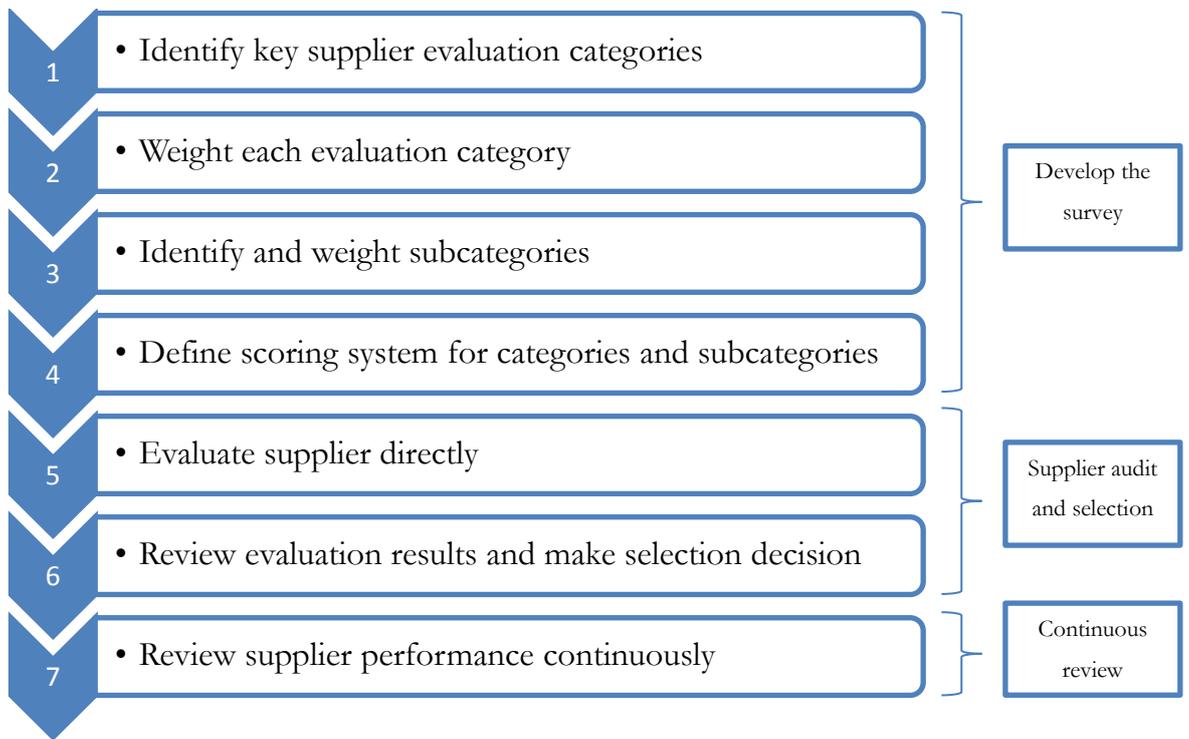


Figure 4. Supplier selection process step by step (Khaled et al. 2011, 2)

### 3.5.1 Determining the criteria

Analytical supplier selection usually requires a lot of time because of evaluating the suppliers in multiple categories. Companies have differences in their supplier selection criteria, but a few criteria are commonly considered as the important ones. Mwikali & Kavale (2012, 190) write that after surveying multiple industries the most important factors affecting the purchasing performance are quality, on-time delivery and costs. The other factors raised up in the article are joint development, trust, level of supply chain management, communication, technical capability and reputation. For the ongoing search for new suppliers they suggest creating a data bank with the information of the potential suppliers. The data bank can help in the supplier selection process also in the long run. (Mwikali & Kavale 2012, 190-191.)

Langley et al. (2008, 518) present an overview of the vendor selection criteria. There are multiple different classifications of these criteria and depending on the nature of the product, the criterion becomes relevant or irrelevant. Langley et al. categorise these criteria under quality, reliability, capability, financial and desirable qualities. Another way to sort the criteria would be e.g. into qualitative and quantitative criteria.



Figure 5. Overview of Vendor Selection Criteria (Langley et al. 2008, 518)

According to Langley et al. (2008, 518), quality is the most important criterion when choosing a supplier. Ability to meet the customers' expectations of a product defines the quality, but also maintenance, the user experience, ease of repair and dependability are part of the product quality. The second most important factors are delivery and earlier performance, which are both considered as part of the reliability factor. The earlier performance of the vendor reflects to the quality of the final product, the warranty issues and sales numbers. In international sourcing the reliability factor has become even more crucial because of the distances and also cultural and political uncertainties. The next criteria category is the capability of the supplier. The capability category includes production and technical capability, level of management, and operating controls. The capability factor should be considered in order to ensure suppliers' ability to deliver the products of right quality and quantity. Bad labor relations can be an obstacle for the supplier's capability. Labor relations can be reflected through the amount of strikes, and personnel turnover rate. If the employees have gone to strike multiple times and they are not content with their employer's decisions, the supplier is more

likely to have more product defects and disruptions in the production. (Langley et al. 2008, 519.)

The fourth criterion group is the financial factors; the stability of the company and the price of the product or service purchased. In traditional purchasing the total cost of ownership (TCO) has become more and more important. Instead of buying the product with the lowest price, the buyer considers the additional factors when calculating the true cost of the product or service (Handfield et al. 2009, 408). The financial figures can include multiple factors, but the overall stability is most commonly evaluated. The remaining criteria are grouped under the fifth category: desirable qualities. The category includes e.g. attitude of the vendor and possible training services. The desirable qualities are not rated very high in the importance of the selection criteria. (Langley et al. 2008, 519.)

### **3.5.2 Finding suppliers**

Various sources of information can be used to find the potential suppliers. The need for information search depends on many variables such as the strategic importance of the purchase and how technically detailed it is. Handfield et al. (2009, 238-240) present the sources of information as 1) current suppliers 2) sales representatives 3) information databases 4) in-house experience 5) trade journals 6) trade directories 7) trade shows 8) second-parties 9) internal sources and 10) internet searches. Young (2010, 242) believes that the easiest way to look for suppliers is through supplier websites. The suppliers are usually registered to the search engines, so the purchasing manager or whoever is performing the supplier search can simply write the key words to the search engine and get the list of potential suppliers. Young also suggests looking through the supplier information files that the supply management department should keep track of. There might have been some suppliers in the past that could fulfil the need of today. As mentioned earlier, the search for new suppliers is needed when the current suppliers are lacking capacity, flexibility, suitable products or when the performance is not adequate (Östring 2004, 3).

Young represents the supplier catalogues that give a view of the offering either in a hardcopy form or in an electronic catalogue. Handfield et al. (2009, 240) are referring to trade directories, but they can be understood quite the same as supplier catalogues. Trade directories are published almost in all industries, and thus function as a good source of information. In the evaluation stage, to get a perspective of the company's financial situation, information can be collected from trade registers. However, the evaluation of the financial situation should not be done too late as it is a crucial factor for securing the supply in the long run. (Young 2009, 242-243.)

More of an interactive way to gain information about suppliers is through sales personnel. Professional sales people have the information of the products that they are selling, but usually also about the competitor's products. The sales presentations should not be neglected because they can provide valuable information about the new products or materials that they are about to bring in to the markets. Handfield et al. (2009, 239) say that the company should collect the information about the suppliers' offerings although it is not what the company needs currently. In future business these earlier supplier connections might prove to be worthwhile. (Young 2009, 242-243.)

Visiting trade shows is a very interactive way to discover new suppliers or keep up with the current ones. The purchaser can connect with many suppliers in a quite short time, but the deeper level of knowledge still requires sending requests for information (RFI). Useful information can also be gained from the company's own personnel; they might have experience from the same field of business in another company or personal connections to some suppliers. In a competitive environment, taking a look at the competitor's suppliers also gives a clue about the potential suppliers you want to start business with. In some industries, it is beneficial for all parties that there is common knowledge about the suppliers and thus the knowledge should be shared openly. (Young 2009, 242-243.)

### **3.5.3 Supplier evaluation method**

After examining the available suppliers and narrowing the list down, the purchaser has to evaluate the ones with the most potential. The evaluation method depends on the

nature of the purchased item and the amount of information available. If there is not enough information available, the purchaser should send a RFI. When purchasing simple low-dollar-value items, the examination of basic information available on the websites is sufficient. In more complicated cases, when the purchasing has a high money value or it is critical for the business strategy, it is necessary to do a thorough evaluation of the suppliers. Young (2009, 244) presents possible evaluation methods as surveys, examining the financial situation, visits to the manufacturing site or an evaluation of a third-party. Usually surveys and examining the financial situation are done first and after that a possible plant visit is conducted. If the purchaser wants a proper evaluation done, the analysis of the potential supplier's management, quality, service level, capacity and information technology is necessary. Supplier survey is conducted to find out the basic information about the company. Supplier survey can be one of the first stages of limiting the suppliers in the selection pool i.e. figuring out if the supplier has any potential (Handfield et al. 2009, 244). The information considered can include e.g. credit references, annual sales and profits, list of other customers, the defect percentage, quality management and manufacturing equipment. (Young 2009, 244.)

Financial condition analysis can be done in co-operation with the financial department or by the qualified purchasing manager. The financial situation can show if the supplier is certainly not capable of performing in a level that the quality is assured and the continuity of supply is secured. (Young 2009, 245.) Although the supplier survey can include the financial basic figures, the financial condition analysis is done on a much deeper level (Handfield et al. 2009, 244). An evaluation conference is a meeting in which the purchaser discusses the purchase with the possible suppliers. If the supplier does not understand the complexities of the purchase or sees that their product is not suitable, they will be cut out. A plant visit gives the purchaser visible information what the production facilities are like. The group visiting the plant is usually cross-functional i.e. there are professionals from many departments such as engineers who know the technology, marketing professionals and sales representatives. (Young 2009, 245.) However, the plant visits are expensive as in most cases it takes a lot of time to travel to the location and to collect all the information needed (Handfield et al. 2009, 246).

The quality capacity analysis is one of the most critical pieces of information to many companies. If the potential supplier's products and processes do not fulfil the purchasing company's quality requirements, the company will be left out of further evaluation. (Young 2009, 245.) When assessing the quality, not only products and processes are analysed, but also safety, training and maintenance are taken in consideration (Handfield et al. 2009, 251). Another analysis to help the decision making is capacity capability analysis that is performed to assure the capability to supply. The delay of required items can turn out to be very expensive, and thus the capacity requirements must be confirmed in the early stage. Also, the organization's management style should be examined. It might take several visits to get a thorough understanding of how the company is managed, but the management style correlates to the employees' motivation to work. All the employees are part of creating the organization culture and also building the company's overall image. A company with encouraging working environment and functional facilities is less likely to have problems resulting from labour's dissatisfaction or continuous cost savings. (Young 2009, 246.) Also Handfield et al. pay attention to the employee capabilities and issues related to that. The employee commitment, workforce turnover, employee morale, individual skills and relations with the management reveal a lot about the inner atmosphere and general capabilities. (Handfield et al. 2009, 249.)

Service capability analysis includes the on-time delivery rate, treatment of special orders, settling of disputes and level of information flow. Analysing the flexibility i.e. capability to adapt to changes, can also be a factor to consider when choosing a supplier. In case the purchasing company is going to implement Just In Time ideology (JIT), the suitability of the supplying company has to be carefully examined. JIT strategy can enhance the flexibility and it can bring the benefits of better quality, shorter lead time, reduced inventory and less scrap and rework. However, JIT ideology requires seamless co-operation between the customer and the supplier. In case there are changes in the customer's schedules, also the supplier's schedules have to be rearranged. (Young 2009, 246-247.) JIT ideology requires also enhanced information technology. Young (2009, 247) states that the level in which the information technology should be examined depends on the purchasing company's capability and their requirements. Hand-

field et al. consider it important not to analyse just the current technological capabilities but also the future plans. The resources planned for research and development in this area are very significant for companies searching for the advantage through technological solutions. (Handfield et al. 2009, 251.)

To analyse the data critically, the company can use a certain tool. Sometimes the selection process can be very difficult, but there are certain multi-criteria decision making tools to use. One multi-criteria decision making tool is weighted-factor analysis that is presented in figure 6. This kind of tool allows the company to include multiple factors in the decision making (Khaled et al. 2011, 3). Weighted-factor analysis requires certain preparation before it can be done. Firstly, the selection criteria have to be decided. The identification of the selection criteria is usually done by the people involved in the purchasing process. The factors can be very different depending on the nature of the product, the importance of the purchase and the strategy of the purchasing company. After the evaluation criteria have been clarified, each criterion has to be weighted. As can be seen in figure 6, each weight is between 0 and 1, and the total sum of the weights is 1. The final scoring of each supplier requires a rating system and it can be e.g. a 5-point scale, number 0 meaning that the supplier is not able to fulfil the criteria and number 5 meaning that the supplier fulfils the criteria perfectly. Then the companies' performance in each criterion has to be rated and after that the final score can be calculated. In figure 6 the weight for price is 0,3, quality 0,4 and delivery 0,3. The scoring of price for the imaginary supplier is 4, for quality the score is 3 and for delivery the score is 2. The final score of the imaginary supplier in figure 6 equals 3. However, the analysis might be very difficult to execute as the people assessing might not have the required information available and getting the additional info takes time. (Young 2010, 250-251.)

$$\text{Score}_x = \sum_{Y=1}^n \text{Performance}_{XY} \times W_Y$$

Criteria Weights:

$W_{\text{price}} : 0,3$

$W_{\text{quality}} : 0,4$

$W_{\text{delivery}} : 0,3$

Scoring:

5= excellent

4= good

3= ok

2= fair

1= poor

E.g. Score=  $0,3 \times 4 + 0,4 \times 3 + 0,3 \times 2 = 3$

Figure 6. Simplified weighted-factor analysis example (Khaled et al. 2011, 3)

### 3.5.4 Choosing the right supplier

After evaluating the potential suppliers the best ones should be contacted for further negotiations. Usually the supply manager or purchaser handles the supplier selection, depending on the level of authority. In more complex purchases it is common to have a cross-functional team involved. The team can include personnel from finance, quality control, design, finance and other relevant departments. In certain purchases, such as the purchasing of similar technical components, also commodity groups are used. The commodity groups usually consist of production planners, engineers and supply managers. The difference between commodity groups and cross-functional teams is that cross-functional team is usually used for only one purchase whereas commodity teams are more of a permanent solution. (Young 2010, 247-252.)

Traditional buying process has alternative ways to get the desired products or services. Burt et al. (2010, 247) define competitive bidding as “transparent procurement method in which bids from competing contractors, suppliers, or vendor are invited by openly advertising the scope, specifications, and terms and conditions of the proposed contract as well as the criteria by which the bids will be evaluated”. The advantage of competitive bidding is the lowest price, but Young (2010, 249) criticizes the best price not bringing the best result in the end. For purchasing critical goods, negotiation is more efficient. By negotiating about the relevant issues, there will be less misunderstandings and the mutual trust can be created. The cost pressure of competitive bidding might

lead into quality problems and other lacks in service capability. In order to get the best out of competitive bidding, there are five things to consider: The value of the purchase should be high enough, the specifications have to be clear and there must be enough sellers in the market. Furthermore, there has to be enough time to pull through the competitive bidding process, and sellers need to have professional attitude towards the bidding process. (Young 2009, 247-248.)

Competitive bidding is not a suitable approach when costs are difficult to estimate, there are very few suppliers in the market and price is not the most important factor. Furthermore, if the specifications are prone to change over time, negotiations help the purchasing company to adjust. When doing competitive bidding in the private industry, the requests for bids are sent to three to eight possible suppliers. The requests are for the suppliers to tell their price for the settled terms and conditions of the purchaser. In ideal situation competitive bidding leads to getting the lowest bid for the contract. However, if the purchasing company still negotiates after the bidding with the group of lowest bidders, it will hurt their future competitive bidding process. Later on the bidders will wait for the negotiations to give their best offer. (Young 2009, 247-248.)

Lysons and Farrington (2012, 198) present the reverse auction method: buying organisation lists and describes the wanted items at a certain price, and the suppliers compete by offering the best price for the deal. Reverse auction is done in real-time, and the only limitation is the timeline set by the purchasing company. Reverse auctions also attract multiple bids and thus the prices go down. However, reverse auctions cannot be carried through if there is no prequalification process for the bidders. For example, if the supplier makes a bid with lower price than the costs, they cannot make it in the long run. There has to be some kind of background information of the supplier before considering approving the bid. It has to be taken in consideration that the suppliers will not have identical products in terms of e.g. quality and durability. (Young 2009, 249.)

Young (2009, 250) introduces the two-step bidding that is often used by technology companies. Two-step bidding is useful in situations where you might not have the clear specifications of the wanted product. The first step is to ask for bids on technical solu-

tions, but the price is not considered yet. After getting multiple suggestions on the technical features and picking the ones that are satisfactory, comes the setting of price. The price is set either based on the lowest bid or the result after negotiating about the lowest price. (Young 2009, 250.)

### 3.6 Theoretical framework for the study

As it was mentioned earlier, the purchasing can total up to over 60 % of the manufacturing company's turnover, and can most certainly be seen in the bottom line. Supplier selection is a critical phase in order to make purchasing successful and gain the competitive edge. In figure 7 the supplier selection's role can be seen in the bigger picture and which factors should be considered during the selection process.

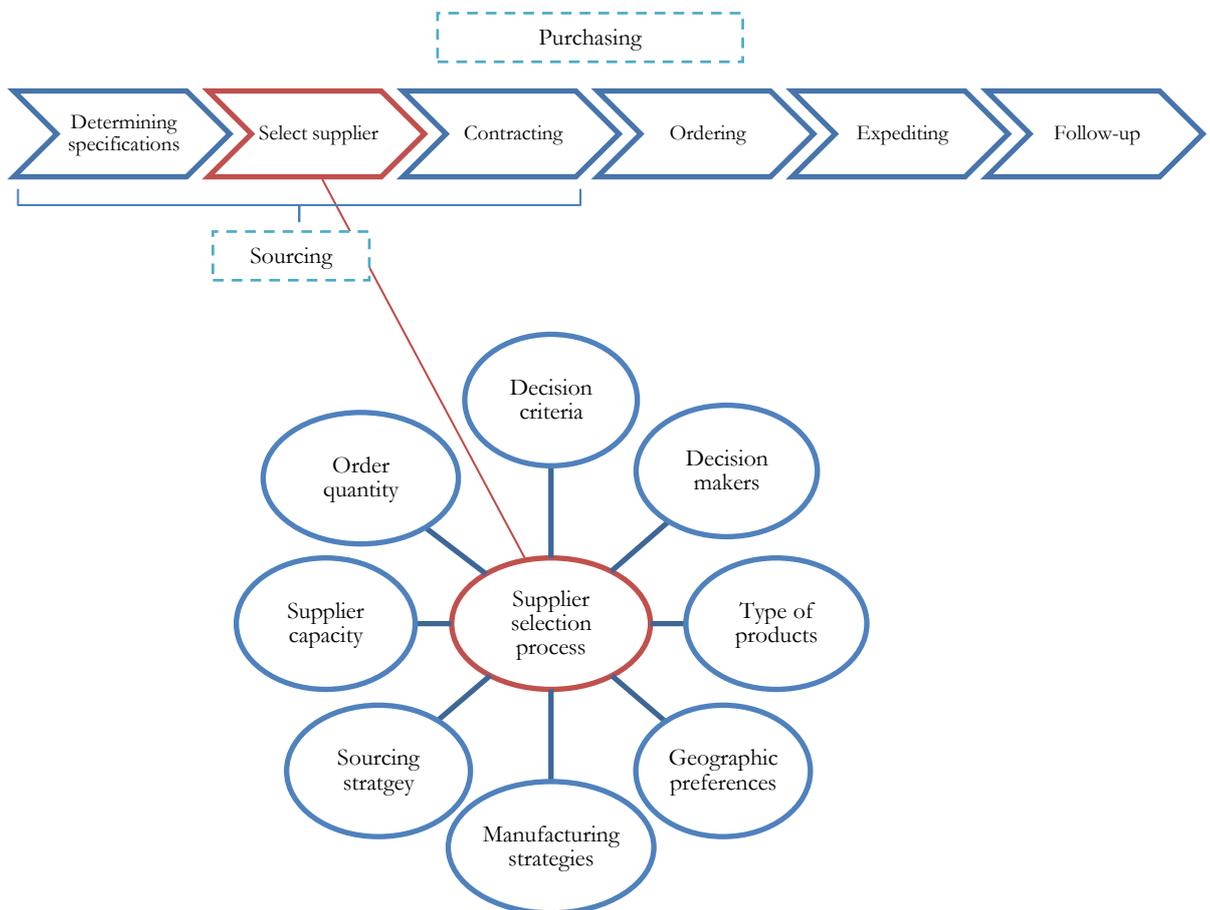


Figure 7. Supplier selection in wider context (van Weele 2012, 9; Khaled et al. 2011, 3) modified by Heinonen

When starting the sourcing process, the specifications of the desired goods have to be defined and multiple strategic decisions have to be made. The nature of the product, impact on financial result and supply risk are factors that have to be analysed in order to make the right decisions. The decisions have to be made between single and multiple sourcing, centralized, decentralized or hybrid placement of purchasing authority and whether to source locally, nationally or internationally. The risks and costs of each of these alternatives have to be balanced, and the decision should be based on the company's overall strategy, vision and mission.

The traditional supplier selection process can be described simply as 1) realizing the need for a new supplier 2) determining the selection criteria 3) pre-qualification 4) choosing the supplier and 5) monitoring. The suppliers can be searched through multiple channels and basic survey can be done with the information available on public sources. For additional information the buying organization can send a request for information (RFI). However, multi-criteria decision making is not always easy and thus certain tools can be used for the scoring. According to Schorr (1998, in Handfield et al. 2009, 268) a good supplier should

- build up the product quality
- ensure on-time delivery
- be responsive to the purchasing company's needs
- strive to shorten the lead time
- provide the information about the capabilities
- look for development ideas
- invest on research and development and
- have a stable financial situation.

## **4 Case company: Costo Ltd.**

To understand the nature of sourcing in this thesis, a brief introduction of the case company is in order. This recently founded company has gained some recognition among environmentally aware fashion brands, but is still rather unknown to the big audience.

### **4.1 Company profile**

Costo is a small Finnish apparel design company that was founded in 2006 (Costo 2012a). Their main product at the moment is hats because of the high demand, but they have also bags and other accessories in their collection. In 2010 the turnover was 0,5 m.€ and the business is expected to expand in near future. The company's slogan "Friend of the planet" tells a lot about Costo's values; the mission is to provide the customers with sustainable products and try to strain the environment as little as possible. Being a small company with few employees the purchasing has been done by one of the company's founders as they have no titles or such hierarchy. However, Costo's high hopes on future expansion will urgently increase the need of new suppliers. The restructuring of the sourcing process will hopefully increase efficiency and result as implementing the best practises. (Bengs, A. 7 Feb 2012.)

### **4.2 Costo's production**

Costo has subcontracted the production to Estonia, Finland (Kustavi), Lithuania and to Italy for sample-versions. Being quite a new company they have only few contracted fabric suppliers: Kvadrat from Denmark and Crespi 1797 from Italy. The main criteria for choosing these suppliers have been the high quality versus price, sustainability and the quality of the business relationship being both ways respectful. The sustainability also affects the geographic location of the desired supplier markets; the potential suppliers should be near the hat production site in Estonia. The main material for the hats is cotton, but they are interested in all kinds of materials that can be applied to a hat. As an example can be mentioned leather and used coffee bean sacks. (Bengs, A. 7 Feb

2012.) In the figure below you can see the design of the most popular hat of Costo's hat collection with the cover material of used coffee bean sacks.



Figure 8: Costo Kombai-hat (Costo 2012b)

### 4.3 Sourcing at Costo Ltd.

Costo has only two contracted suppliers, Kvadrat and Crespi 1797 and the company stated that there is always need for more suppliers. The company has been content with the conditions and terms with the current suppliers but new materials and maybe even better materials might lay there without them knowing. (Bengs, A. 7 Feb 2012.)

The first contracted supplier, Kvadrat, was founded in 1968 in Denmark and is one of the leading suppliers of textiles (Kvadrat 2012a). Kvadrat has been supplying Costo with the excess fabrics from their production since 2006 and the business relationship is expected to last (Bengs, A. 7 Feb 2012). As sustainability is one of the cornerstones of Costo's strategy, it is important to analyse the sustainability of the current suppliers. Kvadrat states on their website that they appreciate the long-term relationships with their suppliers that also have the common goal to maximize the quality and minimize the environmental impact. Company representative of Kvadrat, Louise Jensen (19 Aug 2012), stated that Kvadrat also devotes time for surveying their suppliers in terms of sustainability and quality and always considers the environmentally focused code of conduct in contracts. Also, Kvadrat has the ISO 14001 environmental management

certificate. The Danish company tells their countries of origin for cotton to be Greece, South-America and Africa, and for wool New Zealand, Australia and Norway. In the sourcing of their fibres the sustainability factor is not considered in terms of transportation, but the sustainability is assessed in their suppliers' actions and Kvadrat's own business practises. As it was mentioned earlier in the challenges of green purchasing, the lack of alternative fibre producers drives the companies to less sustainable suppliers. (Kvadrat 2012b, 4-8, 78-84.)

The other contracted supplier of Costo, Crespi 1797 SpA, is an Italian family owned textile company. The company has long traditions as it is the second oldest textile company in the world. The fibres used are originated from France, Holland and Belgium, and the yarn is handled in Asia and Eastern Europe. (Orchad 2011, 16-17.) Crespi 1797 has been delivering fabrics to Costo since 2011; the Italian textile manufacturer was chosen as a supplier because of the fabric's high quality and also the environmentally aware business practises. Mr Bengs (7 Feb 2012) considers the quality being on a superior level as such brands as Armani is getting their fabrics from Crespi1797. The environmental awareness of the company is shown through the certificate of Global Organic Textile Standard (GOTS) (Orchad 2011, 16-17). The GOTS certificate is the top standard for processing organic textiles and it includes environmental criteria throughout the supply chain and also social criteria (Global Organic Textile Standard 2010).

The figure 9 below shows the simplified supply chain of Costo when using Kvadrat as supplier. Kvadrat uses the fabrics mainly for interior design pieces e.g. furnishing and curtains, but Costo finds the fabrics suitable also for apparels. Kvadrat delivers the fabrics from Denmark to the Estonian factory via UPS and inventory levels are updated. The factory purchases the other needed items needed in the manufacturing and adds the expenses to the manufacturing costs. The factory has the production instructions and other policies set by Costo. The hats are made and then sent to Helsinki via Kopra Trans Company. In Helsinki the hats are checked for quality and then either sent to the end customer or retailer. Costo also organises special days when they sell items from their headquarters in Helsinki. (Bengs, A. 7 Feb 2012.)

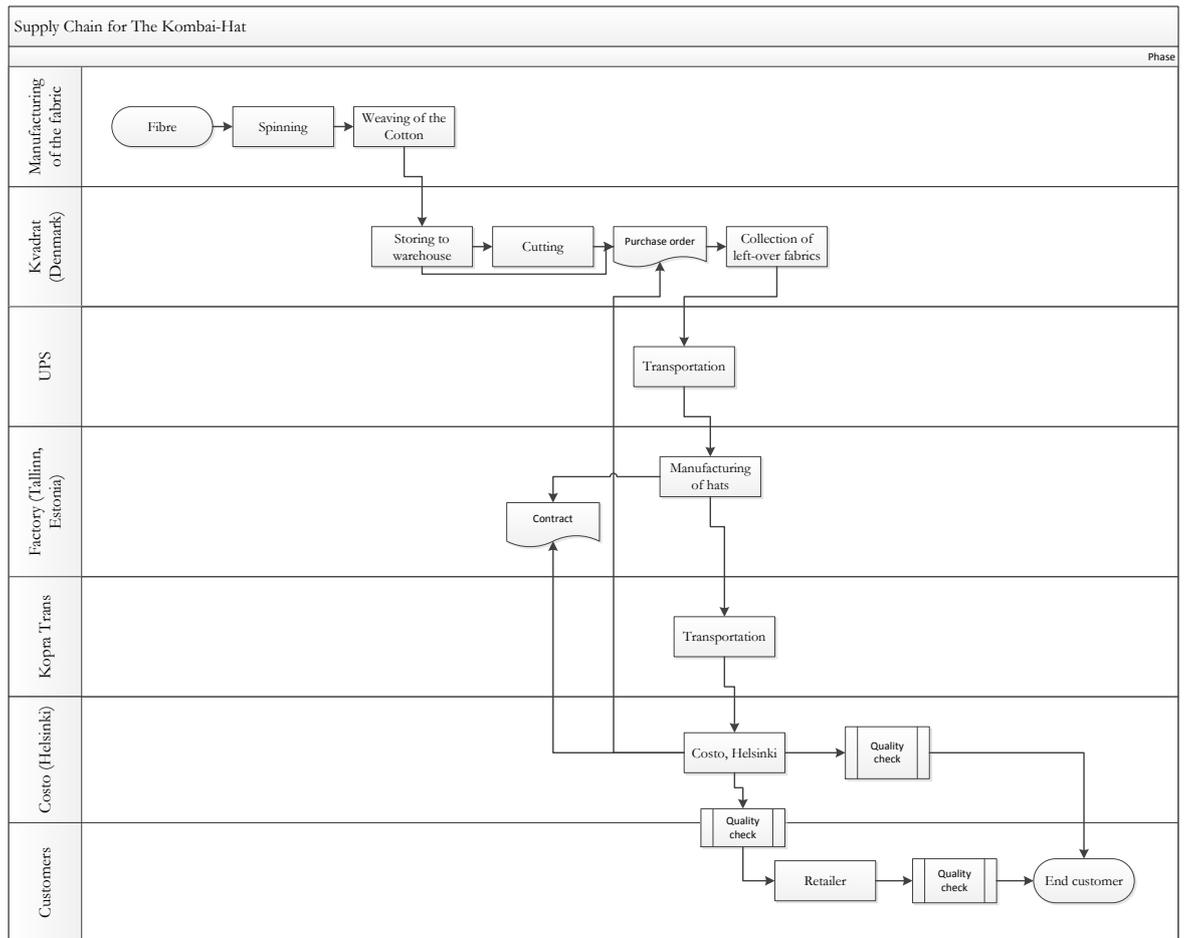


Figure 9: Simplified supply chain example (Bengs, A. & Kögäs, L. 7 Feb 2012)

## 5 Research methods

It is important to reveal the research methods used in this thesis and why these particular methods were used. Also a closer look into the interview, survey and desk research increases the transparency.

### 5.1 Qualitative research

Primary data for the thesis was collected by using a qualitative research method. Qualitative research method is a research type that tackles the research problem by using techniques that lets the researcher describe the current phenomena without numerical measurement. The focus of qualitative research is figuring out inner meanings and new issues. The types of questions that qualitative research answers include such questions as why, how and what kind. (Zikmund, Babin, Carr & Griffin 2010, 133.) According to Saunders, Lewis and Thornhill (2009, 480), the qualitative information can range from brief answers on a survey paper to in-depth interviews or online questionnaires.

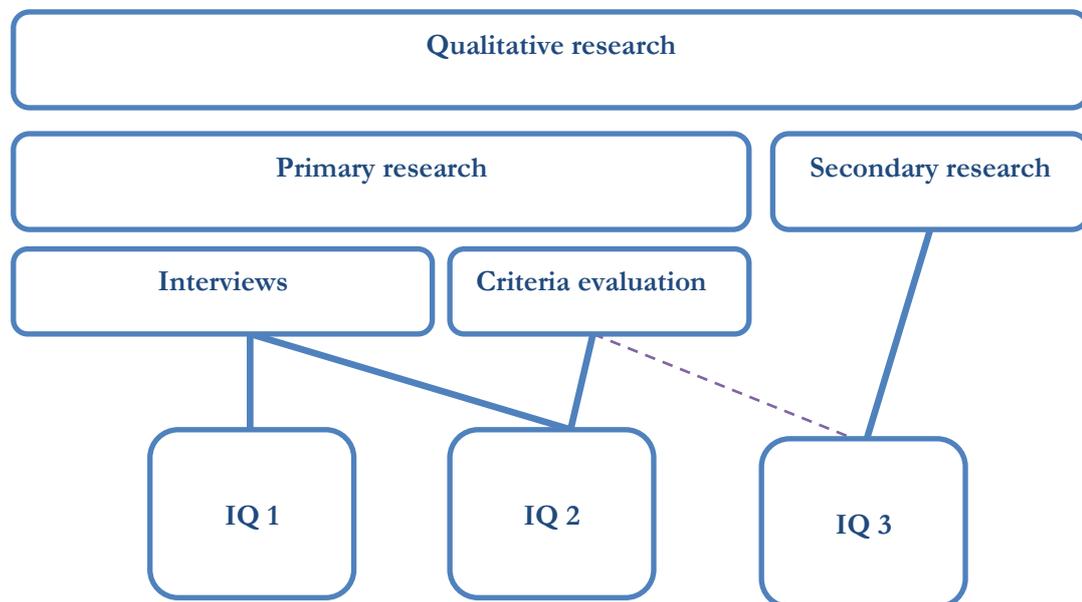


Figure 10. Research process

You can see the overall research process in figure 10 above. Out of the qualitative research methods the interview and survey were chosen to be the most suitable ones. According to Saunders et al. (2009, 318) interviews can offer the researcher reliable and

valid data for answering the research questions. The research for the thesis is highly dependent on the interview done with the Costo founders and also the survey about the importance of each criterion when choosing a vendor. The conducted interviews were semi-structured and had several open-end questions. The purpose of the survey form was to map out the importance of each supplier selection criterion. Also a secondary research had to be made in order to get wider view on the research problem.

The first investigative question, presented in chapter 1.1., was researched by getting an overall picture of the company's sourcing, mapping down the supply chain and asking about the current purchasing process. The second investigative question was asked in the interview and also the literature about the topic was investigated. Based on the interview and literature, the author created a criteria evaluation form to define the importance of each criterion. Additional questions about the criteria added value to the research. The author also wanted to get another view on the selection criteria and so one of Costo's suppliers was interviewed. The answer for the third investigative question should be an evaluation method, as Costo currently is not using any analytical tool. The determination of the supplier selection criteria helps deciding which evaluation method to choose, and thus the second question is highly linked to the third one. The main research method for the third investigative question was going through secondary data, as the interview with Kvadrat did not bring any new insights to this topic.

## **5.2 Interview and survey**

In an interview study the findings are based on researcher-respondent conversations (Silverman 1997, 32). The author thought that interviews will offer the relevant information for the research problem and the objectives of this research. Saunders et al. (2009, 320) are presenting different types of interviews depending on the formality and structure: structured interviews, semi-structured interviews and unstructured interviews. The semi-structured interview has a list of themes and questions, but the researcher may ask additional questions depending on the situation. Furthermore, the semi-structured interview allows the different order of setting the questions so that they come along in a conversational way. (Saunders et al. 2009, 320.)

The author considered the semi-structured interview to be the most suitable one, as there is a set of questions to be asked, but still they can be modified along with the interview. The researcher wanted to have a high level of interaction and thus “face to face” interview was the type chosen. According to Saunders et al. (2009, 324) managers are more willing to participate in an interview than filling out a questionnaire, and semi-structured interviews give the researcher a chance to get a wider answer as the interviewee can build on their answers. The interviews here in Finland for Costo were performed face-to-face, but the interviewees who were in Denmark had to be interviewed via e-mail.

The people interviewed were chosen on the basis of who knows the company best, and who is in charge of the purchasing function. When interviewing Costo, it was quite obvious that the interviewees would be the founders of the company who are also in charge of the business. The limited amount of people with the adequate information about the company’s purchasing thus narrowed down the number of interviewees. One of Costo’s main suppliers, Kvadrat, was chosen to be part of the research in a very late stage, as the supplier market research turned out to be too time consuming. The author thought that by investigating one of Costo’s suppliers with similar values in the textile industry, the research on Costo’s sourcing would have some kind of baseline. When interviewing Kvadrat company representatives by e-mail, they decided the person to whom the e-mail was redirected and the author just had to settle with that.

The interviews for Costo were conducted face to face and there were several open end questions, but also further questions were asked according to the situation. The questions were not sent in advance to the interviewees, as the author did not want to limit the interview only to the listed questions. The researcher paid extra attention to the formulation of the questions to avoid errors and misunderstandings. Still, the interviewees were willing to answer any further questions that might arise later on during the project. Author’s prior experiences in conducting interviews proved to be useful, as the interview seemed to go smoothly. The author was able to suppress personal opinion and avoid making any assumptions beforehand.

The Costo-interview (attachment 2) started with the basic questions about the company overall and then more about the issues concerning the supply chain. The themes of the interview included production, finding the supplier, criteria and evaluation. The purpose was first to get an overall understanding of the whole sourcing process. After that the author wanted to concentrate more on the supplier selection part; methods, criteria and evaluation. The interviewer read the available information prior to doing the interview so as not to ask questions on matters which are already stated somewhere. To understand the purchasing process, and in more specific the supplier selection, it was useful to map the supply chain in a simple way. The second phase of the interview was filling out the supplier selection criteria evaluation form (attachment 1) and that was filled a month later than the initial interview was conducted. The evaluation form was created on the basis of both the earlier interview and also by studying different secondary sources about supplier selection criteria. The criteria were both qualitative and quantitative but some more detailed financial criteria were left out and just summarized as overall financial situation. To include the financial ratios the author would have needed to have some knowledge base on accounting.

Costo interviews and filling the survey form were conducted at the company's office in very laid-back atmosphere. The interviewer was not familiar with the interviewees beforehand, but it did not affect to the situation in any negative way. To make the situation even more relaxed, the interviewees offered some coffee. Silverman (1997, 118) states in his book that ideally interview should be conducted separated from other people, but the author found the interview-situation more conversational in the public area of the company premises. The face-to-face interviews were conducted in February 2012 and the time used for both of the interviews was about 45 minutes.

The e-mail interviews of the Kvadrat personnel turned out to be challenging. It was difficult to get the reply, but the answers were received from one of the company workers in August. The interview questions for Kvadrat (attachment 3), were about the different criteria and how they perceive their performance. There were also questions about their supplier selection to find out the practises they are using. The author

thought that it would also be useful to take a closer look into the supplier's actions and criteria, and see if it complies with the theories.

### **5.3 Validity**

The validity of research means that the researcher is studying the matters that were initially stated to be researched (Silverman 1997, 207). The objective was to analyse and develop the sourcing at Costo and the goal was reached by interviewing the people in charge of the business and conducting a survey about the selection criteria.

Saunders et al. (2009, 373) defines content validity as the adequate coverage of the investigative questions to get the results. The content validity can be enhanced by looking through the theories behind the research and possibly discussing with experts. The author feels that the relevant theory was investigated and also discussed briefly with teachers. (Saunders et al. 2009, 373.)

### **5.4 Reliability**

According to Saunders et al. (2009, 326) in qualitative research the reliability is perceived through the ability of other researchers to find the similar kind of data. To evaluate the reliability of the interviews, the possible biases have to be taken in consideration. Saunders et al. (2009, 326) lists the types of bias as interviewer, interviewee and response related. The author thinks that the interviewer bias in terms of imposing own beliefs and frame of reference were avoided very well. In terms of interviewee and response related bias the reliability of face-to-face interviews is also evaluated to be reliable. The e-mail interview answers were less specific and shorter; they probably did not spend that much time answering. However, as Saunders et al. (2009, 327) states, the research might reflect reality at the current moment in this specific situation, and is prone to change.

The secondary sources for the thesis were assessed each time and the information was confirmed or studied further before deciding the one to use. If the secondary source was quoted in multiple locations, the author considered the source as a reliable one.

Also, the famous theorist in the field of purchasing such as Arjan van Weele and Robert Monczka were considered as experts in the field and thus the theory part relies a lot on them.

## 6 Findings

This chapter explains the results of the done research. Firstly, the current state of the commissioning company's sourcing is explained. Then the supplier selection criteria are mapped, and the importance of each criterion is defined. Lastly the author recommends one supplier evaluation tool for Costo to use in the future. The investigative questions and their relation to the theory can be seen in table 1 in chapter 1.1.

### 6.1 Current sourcing

The current sourcing at Costo is multiple, centralized and it is done internationally. Still, there is room for more suppliers and the sourcing practises can be developed. The decision to do multiple sourcing internationally was due to price versus quality reason, and also the sustainability requirements were met. The sourcing is centralized mainly because of the small size of the company, but in the future the decision has to be re-considered. (Bengs, A. 7 Feb 2012; Köngäs, L. 7 Feb 2012.)

As the current method of finding supplier has been relying a lot on the contact of the suppliers to the Costo representatives, the supplier selection has not been very analytical and has not reached many potential suppliers. Both-ways respectful business relationship came up during the interview as one of the selection criteria. Mr Köngäs (7 Feb 2012) stated that "the other party has to really want to do business with us, not that just we want to". The suppliers have come to discuss with the Costo personnel in fairs and other such events. Thus, the connection has been created face-to-face and already there the business has been talked about. Also the founders' own contacts have become useful in few fabric purchases. Still, meeting new potential suppliers face-to-face is beneficial in some cases. According to Strauss and McGrath (1994, 163) face-to-face communication is more effective than electronic communication when there are issues which require coordination and timing, when you are trying to persuade others, or when the issues are affected by the attitudes and opinions. The type of business relationship in Langley's et al. (2008, 110-111) categories of business relationships for Costo is close to the partnership thinking. The partnership-type of relationship is both ways beneficial and there is deeper commitment than just transaction between the

company and a vendor. According to Kraljic matrix that was presented in chapter 2.4, however, the partnership type of relationship is the most suitable for strategic items which have a high supply risk and high impact on financial results. The semi-finished products that Cost is purchasing do not have high supply risk and the impact on financial result is not high. The most suitable strategy for fabric purchases according to the Kraljic matrix is either competitive bidding or contracting which Costo has been currently doing. However, Young (2010, 249) is arguing that with the best price of competitive bidding, the results are not the best; there is more likely to occur quality problems, lacks in service capability and misunderstandings. The problems arising from competitive bidding can be minimised by arranging negotiations later on. The bigger the financial impact of the purchase is, the bigger the need to have negotiations. .

## **6.2 Criteria**

According to the interview with Bengs (7 Feb 2012) the most relevant criteria were price versus. quality, sustainability and the conditions of the contract. Mr Kõngäs also raised up the issue of respectful business relationship, which can also be interpreted as the supplier's attitude. The attitude factor was presented by Langley et al. (2008, 518) along with the other desirable qualities, but it was not considered very important compared with quality, reliability and price.

The list of selection criteria mentioned in attachment 1 is based on the interviews with the company representatives and multiple sets of criteria that companies generally are using. The financial matters were included in only one point of the criteria list, as the volumes are quite small and at the moment just the overall financial condition matters. In the future as the volumes are bigger, the financial factors can be described more precisely and analysed more. The possible financial factors to be considered in the future include such factors as profitability and debt ratios.

To rate the importance of each selection criteria, the Costo-representatives filled out the survey form. The results of the form shall work as the framework for the selection. The criteria listed in the evaluation form included:

- Punctual delivery
- Price
- Quality of materials
- Quality of the service
- Respectful business relationship
- Long-term business relationship
- Competitiveness of terms and conditions
- Overall financial conditions
- Reputation of the company
- Expertise of the sales staff
- Sustainability
- Corporate social responsibility
- Ability to constantly supply materials
- Flexibility

The factors that got rated as very important ones are punctual delivery, price, quality of the materials and the ability to constantly supply materials. According to Mr Bengs (7 Feb 2012) the price-quality ratio has to be in order; “if the quality is clearly superior to other considered fabrics it is understandable that the price is also higher”. Langley et al. (2008, 518) raised up the three criteria groups: quality, reliability and capability, and they match with the results from the survey. The punctual delivery was considered as part of the reliability, quality factor includes the material quality along with service quality and other factors, and constant supply capability was one of the capability factors along with technological capability and level of management.

The reputation of the company and the level of sustainability was considered to be the next important themes and got the rating 4. The rating four goes along with the company slogan: “Friend of the planet”. The sustainability can be considered as a strategic decision as it has been part of the organization since they started. Mr Bengs and Köngäs both stated that “we try to restrain the environment as little as possible”. The most common criteria in terms of environmental performance includes possible envi-

ronmental offences in the past, recycling practises, ISO 14001 certificate and other certificates.

Somewhat important themes – rated as 3 – were quality of the service, respectful business relationship, long-term business relationship, competitiveness of terms and conditions, overall financial condition, corporate social responsibility and flexibility. Langley et al. (2008, 511) presented the reliability factors, delivery and performance history, as the second to the most important criteria. According to Handfield et al. (2009, 122-123) a close relationship between the buyer and the seller can bring many advantages such as trust and long-term contracts. Mutual trust enables sharing of more sensitive information e.g. cost structure of certain product which can be then in joint effort thought through for cost reductions. Long-term contracts are more likely to be made when the seller-buyer relationship is close; they are relying more on the other party and see the potential benefits over a longer time period. (Handfield et al. 2009, 123.)

The least important factor of the given alternatives was the expertise of the sales staff. In the case of Costo, the sales person has to only know the basic information and send the sample piece of the fabric to see what it is like and whether it is suitable material or not.

One of Costo's main suppliers, Kvadrat, was asked to fill out the criteria evaluation form. The results of their evaluation were similar to Costo's: the most important criteria were quality of the material, price and the punctuality of the delivery. They also said that "environmental awareness is one of our company's principles and we try to consider it in every aspect of business". The high quality of their fabrics' is a feature that they do not want to cut back, and that fits perfectly into Costo's business thinking.

### **6.3 Evaluation method**

According to Mr Bengs (7 Feb 2012), the sourcing process has not involved any use of criteria list or a supplier evaluation form. The comparison with some suppliers has been done between the market price and the quotation. Once the criteria are determined it is possible to evaluate the potential suppliers. Finding potential suppliers

might take a lot of time and resources if there are hundreds of suppliers in the desired markets.

Kvadrat company representative also stated that the supplier selection has not been organized in an analytical way; the suppliers have been investigated in a very general level through company webpages and more deeply by sending requests for information (RFI). Kvadrat company representative, Ms Jensen, mentioned that the financial stability is checked, the product quality is assured and environmental performance is confirmed in terms of ISO 9001 or other certificates.

As you saw in figure 10 in the previous chapter, the secondary research about the possible evaluation methods had to be done. The weighted factor- analysis presented in the theory part was looked through more closely and also other options were considered. The other alternative evaluation methods were Categorical Method, Analytical Hierarchical Process (AHP), Multi-Attribute Utility Technique (MAUT) and Cost-Ratio Model. The author considered the weighted-factor analysis most suitable because it can include both qualitative and quantitative factors, it suits also for small companies and is simple enough. The lacks in other techniques were that they did not all fit for small companies and some of them were emphasizing the cost-factors over the qualitative factors. As the qualitative factors were considered significant by Costo company representatives Bengs and Köngäs, the author wanted to look into a method that fits with their criteria.

## 7 Discussion

This chapter includes the concrete suggestions for the commissioning company in order to improve their supplier selection process. The significance of the results is discussed critically and the overall project performance is assessed. Lastly the author tells about her own learning points.

### 7.1 Significance of the results

The objective of this research was to analyse the sourcing process of the case company and especially find improvement suggestions for the supplier selection process. Understanding the current sourcing of the case company and determining the evaluation criteria was very important part of the research. The qualitative research method with semi-structured interviews and a survey form helped gathering first-hand information about Costo's sourcing and supplier selection. Also secondary sources, such as academic books and articles, were used to support the empirical results. The author wanted to emphasize the importance of supplier selection in the purchasing process, and that was achieved. Although the investigative questions were modified during the process, the done research helped answering the questions quite well.

This research helps the commissioning company to see the current state of their sourcing and supplier selection. Especially the selection criteria list and evaluation method suggestion can enhance the case company's supplier selection. The research plan changed during the project as first the plan was to do a supply market research after finding out the specifications and selection criteria. The author felt that in order to make such a research, the timeline should be longer and the knowledge base over fabrics and their qualities should be better. The supplier market research would have required sending several requests for information, and actually receiving the information would have expanded the time-line even more. However, now that the need for supplier market research has been clearly stated the further research can be conducted.

## 7.2 Conclusions and recommendations

Costo's current sourcing is multiple, centralized and it is done internationally. The strategy for obtaining suppliers is by contracting with the suppliers that are met in trade fairs and other such events. Meeting suppliers face-to-face was considered more beneficial than electronic communication in situations when you are trying to persuade others or when the issues are affected by the attitudes and opinions. Business relations with the current suppliers, Kvadrat and Crespi 1797, were created this way and it has proved to be suitable for Costo. Thus, the author recommends still creating the connections through trade fairs, but also looking through trade directories and Internet catalogues. For certain fabrics, such as leather, the competitive bidding or reverse auctioning could bring the cost advantage compared to the traditional purchasing without letting the quality suffer. Costo also makes unique pieces, which favours the competitive bidding or reverse auctions; the business relationship does not have to be long as the delivery might turn out to be one off. However, if longer business relationships are wanted, competitive bidding or reverse auctions are not the right options. Hence, the main approach should be the traditional purchasing and additional small lots could be purchased via competitive bidding or reverse auctions.

Based on the interviews the most important supplier selection criteria were quality, price and reliability in terms of on time delivery. Both of the companies, Costo and Kvadrat, considered sustainability as an important selection criterion, and Costo representatives also emphasized the intensity of the possible business relationship. The evaluation form (attachment 1) shows the solution of what is the set of criteria behind the selection. The selection criteria were gathered to this form in order to evaluate the importance of each criterion. The results were in accordance with the earlier interview as punctual delivery, price, quality of the materials and the ability to constantly supply materials were evaluated as most important criteria.

The case company is not currently implementing any multi-criteria decision making tool which certainly is needed based on the several criteria presented in chapter 6.2. The author recommends organizing the multi-criteria decision making so that the best suppliers can actually be found. The rating of the selection criteria enables the use of

weighted factor analysis that was mentioned earlier in chapter 3.5.3. Weighted factor analysis is one type of tool for multi-criteria decision making. The weighted attributes are multiplied by the performance score and the sum of these defines the total score per supplier. The supplier evaluation form (attachment 4) can be utilized in the evaluation process. Once the total score of each supplier has been calculated, the top suppliers can be picked up and contacted for further negotiations.

Considering the case company's plans to expand their business, the set of criteria and the recommended tool become more relevant in the near future. The set of criteria can be used also for the selection of sub-contractors, but the weighting of each attribute might differ as the impact on financial result and supply risk is bigger. Furthermore, some financial ratios might have to be included in the criteria list.

The earlier mentioned evaluation form (attachment 4) can also be used in the formation of a databank. The factors chosen on the evaluating form were categorized to five groups as was presented in chapter 3.4.1. The groups are quality, reliability, capability, financial factors and desirable qualities. If the case company decides to purchase via reverse auctioning or competitive bidding, creating a data bank of the suppliers seems sensible. The data bank can include current suppliers, suppliers that were used in one off-situation and suppliers that were turned down for a minor reason. The data bank can support the supplier selection later on when the company is in search for new suppliers again.

The benefits of EDI are presented by multiple modern theorists. However, the author thinks that the transfer for this kind of system should be done later on. With the current volumes, the EDI is not necessary. However, in the future, the electronic transfer of purchase documents between the buyer and the seller makes it easier to handle the purchasing process.

### **7.3 Further research**

Suggestion for further research is firstly to conduct a proper supplier market research. The research could be done in co-operation with higher education institutes e.g. as a

thesis project. The research would offer the commissioning company a wider look into the supplier markets and possibly achieve cost savings due to better deals.

Secondly, as in this thesis the emphasis in the supplier selection was on the qualitative matters, the further research could be conducted on the financial matters. The supplier selection could be analysed through the financial figures. Author also thinks that the purchasing performance should be evaluated and monitored. If the purchasing performance is not monitored and evaluated, it is difficult to improve your company's purchasing performance. Researching different ways of evaluating purchasing performance and finding the suitable method can be beneficial in the development of the purchasing function.

#### **7.4 Project**

After reading a news article about the case company, the author decided to send them an e-mail asking whether they would be willing to give a thesis subject. The fact that the company was started without any loans, and has done hardly any marketing for their products, impressed the author and she wanted to know more. The thesis topic was created together with the company, but also the international aspect needed to be included. Thus, the supplier selection process and finding new suppliers was decided to be the topic. The market area where the planned supplier market research was to be conducted was in Estonia, near the production site in Tallinn. However, the supplier market research turned out to be too much of a work and in a too long time period that the author decided to concentrate more to the supplier selection process and keep the international aspect by looking into the sourcing of one of the vendors.

The interviews done to commissioning company went very well and additional information could be asked via e-mail. However, the Kvadrat interviews were a bit of a disappointment because they had to be done via e-mail. The answers to the questions were not very detailed and the author suspects that interviewees do not have a lot of experience in the field of purchasing. The decision to include Kvadrat as one of the interviewees in this research was made in very late stage and the results were not magnificent to this project. The author considered benchmarking as a method for getting

to know the best practises in sourcing, but also thought that finding a similar small company with similar purchasing needs and strategy is quite challenging. The results gained from benchmarking would not probably have helped defining the selection criteria and the evaluation method.

Reading through many books from different authors helped creating the big picture of the supplier selection and how it really is significant part of the purchasing. The research also revealed the simplicity of a small company's purchasing process, but the future expansion plans gave the author possibility to recommend more analytical purchasing process. As everything did not go as planned, the author just had to cope with the situation and go along with the alternatives left. The author is grateful for the commissioning company to have gotten the opportunity to work with this topic and getting to know great people.

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# Attachments

## Attachment 1. Criteria evaluation form

What is the level of importance of the following criteria when choosing a vendor? (1= not important, 5= very important)

				1	2	3	4	5
<b>Punctual delivery</b>								
<b>Price</b>								
<b>Quality of materials</b>								
<b>Quality of the service</b>								
<b>Respectful business relationship</b>								
<b>Long-term business relationship</b>								
<b>Competitiveness of terms and conditions</b>								
<b>Overall financial condition</b>								
<b>Reputation of the company</b>								
<b>Expertise of sales staff</b>								
<b>Sustainability</b>								
<b>Corporate social responsibility</b>								
<b>Ability to constantly supply materials</b>								
<b>Flexibility i.e. ability to adapt to changes</b>								

Other factors that were not mentioned:

.....

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## **Interview, Costo**

Date and time:

Location:

Interviewee (name and position):

### **Production**

1. Where is the production located?
2. Which materials are you using?
3. Who are your main fabric suppliers?
4. How long have you been working with these suppliers?
5. Which transportation-mode and company do the suppliers use?
6. Could you describe the whole supply chain for your main product?

### **Finding the suppliers**

7. How did you start the business with the current suppliers?
8. Have you had any problems with these suppliers?
9. Who has the main responsibility of the purchasing in your company?

### **Criteria**

10. What has been the criteria behind choosing these suppliers?
11. Have you had any problems with the product-quality?
12. How do you manage the quality?
13. The company slogan "Friend of the planet" gives a certain kind of image of your products, how much do you consider the sustainability-factor in your sourcing?

### **Evaluation methods**

14. Have you used any kind of supplier evaluation techniques? if yes, what kind?

## **Interview, Kvadrat**

Date and location:

Interviewee (name and position):

### **Quality**

1. How would you describe the level of quality of your fabrics?
2. Have you had any quality problems? If yes, what kind?
3. What grade would you give for your quality on scale 0 to 5?
4. How would you describe the quality of your services?

### **Sustainability**

5. Do you consider sustainability and corporate social responsibility in your actions? If yes, in which way?
6. Do you have any future plans of implementing further actions to enhance the level of sustainability?

### **Business relationship**

7. What does business relationship with customer mean to you? What makes a good business relationship?
8. How would you grade your level of business relationships in a general level, on a scale 0 to 5? Do you emphasize good business relationships?

### **Sourcing**

9. How do you select the suppliers? Do you use some kind of method for the supplier selection?
10. What criteria do you use for supplier selection?
11. Could you please fill out the supplier selection criteria evaluation form, Thank you!

Attachment 4. Supplier evaluation form

# Supplier evaluation form

Supplier information:

Company name:		
Company address:		
Number of employees:		
Type of business:		
Contact person:	Phone:	E-mail:
Goods/services offered:		

Supplier evaluation (1= poor, 2=adequate, 3=ok, 4=good, 5=excellent):

	1	2	3	4	5
Quality					
Material quality					
Service quality					
Dependability					
Additional information:					
Reliability					
Timeline of deliveries					
Performance history					
Additional information:					
Capability					
Production capacity					
Technical capability					
Additional information:					
Financial					
Price					

Overall financial condition					
Additional information:					
Desirable qualities					
Company reputation					
Sustainability					
Prospective Business-relationship					
Additional information:					