

Master Degree Project in Logistics and Transport Management

# **Supplier Selection**

Issues facing manufacturing startups and how to deal with them

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## **Abstract**

The phenomenon of manufacturing startups has grown in popularity during recent years. With this increased popularity follows issues that need to be addressed in order for such startups to continue to develop and reach their goals. A critical and resource consuming business activity for any manufacturing company is supplier selection. Therefore, the purpose of this study was to explain and contribute to an increased understanding of the issues small hardware manufacturing companies face when selecting suppliers and how certain factors affects the supplier selection process. In order to fulfil the purpose a qualitative case study was conducted where semistructured interviews with different startups, representing small companies, were the main source of primary data. A theoretical framework regarding supplier selection methods together with empirical findings have lead to interesting results. Initially, the fact that startups lack resources suggests that focus must be on basic core activities such as innovation and product development while important activities such as supplier selection is neglected. The results also show that existing methods for supplier selection is not suitable for startups based on their size and financial strength. However, they would still benefit from the structure that such models provide when making critical business decisions such as selecting suppliers. Upon analysing methods for supplier selection it has become clear that traditional factors such as price have become "order qualifying" while new, soft factors such as trust have become "order winning". In order to select a supplier that is suitable for the needs of a startup, critical factors must be identified to be able to stipulate a framework for what parts of existing models that can be used. Hence, a tailor-made solution have been created where parts of traditional methods have been cherry-picked to obtain structure.

Keywords: Supplier Selection, Supplier Selection Methods, Supplier Selection Factors, Startups

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## 1 Introduction

This thesis will deal with the issues that smaller companies, ventures and growing manufacturing startups are experiencing in relation to developing a supplier network. Startups as a phenomenon is on the rise and with being a small venturing company with limited resources many challenges will follow. The main focus of many manufacturing startups is, naturally, the technical part and the development of products. Other parts of the business such as supply chain management are often overlooked. (Mattisson, Gräff, Eliasson, 2016)

According to Sandén (2016), small companies that are outsourcing production to China, including startups, face many challenges while doing so. Such challenges are connected to both finding suitable suppliers and the risks that can follow in the process of doing that. One province that is popular to foreign hardware manufacturing companies is the Guangdong province, which includes manufacturing ecosystems like Shenzhen. At this point in time, Shenzhen is one of the most popular areas to outsource electronical hardware manufacturing to.

Many large sized companies have the ability to influence their suppliers and the ecosystem they act in because of high volumes and purchasing power. Meanwhile, small and medium sized companies, including startups, have to adapt to the situation and might experience more challenges while outsourcing to other countries. (Sandén, 2016)

With a growing startup community, more and more small companies will be exposed to the challenges connected to outsourcing of production. Different challenges will occur in different stages of a company's growth while in the startup phase many of them will have to focus on building a supplier network. However, many startups do not have the focus on supply chain management that may be needed to successfully develop such a network. (Coleman, 2015)

## 1.1 Problem analysis

As stated above, small venturing companies which we call startups (Oxforddictionaries.com, 2016; Robehmed, 2013) are increasing in number and there are already a lot of companies with limited resources out there that are outsourcing hardware production. Looking at typical approaches and procedures of selecting suppliers, one might get the impression that the needs of these companies are not taken into consideration. The many steps often included in such procedures, like doing extensive research, evaluating an extensive range of potential suppliers and considering a vast range of factors for supplier selection can become overwhelming when lacking resources.

Examples of existing procedures and tools that are often used for purchasing and other strategic choices are Kraljic's matrix (Kraljic, 1983), the rational/normative model, external control and strategic choice (Park and Krishnan, 2001). These models are, just like other models in the industry, advising extensive and standardised work with a long-term focus such as Lean production.

In order to find suitable solutions for actors that identify themselves as small venturing companies, it is important to discuss certain topics. One of the most important aspects is to pinpoint the needs of startup companies and the factors that they find most important when selecting suppliers. Another aspect is to discuss how certain procedures can be adapted to fit those companies better and also how companies with limited resources still are able to act sufficiently in this environment.

## 1.2 Purpose

The purpose of this study is to explain and contribute to an increased understanding of the issues startups face when selecting suppliers and how certain factors affect the supplier selection process.

- How do existing tools for supplier selection fit the needs of a startup and how can issues related to supplier selection be encountered?
- How do various supplier selection factors affect the supplier selection process for a startup?

#### 1.3 Delimitations

The research will be limited to studying only a few startup companies due to time restrictions and lack of access. The focus of the study is mainly on supplier selection and startups which is demonstrated in the purpose and in the research questions.

## 2 Methodology

This section will deal with how the study was conducted and how data was collected.

#### 2.1 Research strategy and design

In order to fulfil the purpose that has been stipulated a qualitative study has been conducted. Qualitative studies are, according to Collis and Hussey (2013), suitable when the aim is to create a deeper understanding of a certain phenomenon. The purpose of this study is to do just that which is why this strategy has been chosen.

According to Collis and Hussey (2013) there are mainly two ways to approach research where an inductive approach is often used in qualitative research and a deductive approach often is used when conducting a quantitative study. An inductive approach suggests that the researcher looks for patterns in their empirical data and then tries to explain the patterns through theorisation, which is the approach that mainly has been used while conducting this study. However, Collis and Hussey (2013) also mention that both approaches may complement each other and that the utilisation of one approach not necessarily out rules the use of the other.

This study has been conducted in such a way that the collected empirical data have been analysed in order to create a deeper understanding of the issues small startups face while outsourcing their production and how their purchasing process is affected by certain external factors. As mentioned earlier, this suggests that an inductive approach is most suitable for this study.

## 2.2 Interpretivist approach

According to Collis and Hussey (2013), an interpretivist approach is important to take while acting in a context of social interaction. Our study has been conducted in a social context where subjectivity and interpretation has been important in order to conduct the study in a correct manner. This has been done in contrast to the positivist approach, which does not take subjectivity into consideration. Not taking the surrounding reality into consideration while conducting the study may have a negative effect on the results which is why this has been taken into consideration both while conducting interviews but also when collecting secondary data.

## 2.3 Methodological limitations

As this research includes several cases and since it has a qualitative approach, some limitations will naturally follow. Qualitative studies come with limitations to validity and reliability since they are hard to replicate in the natural setting in which they occur. Furthermore, case studies limit the alternative to make causal inferences since alternative explanations cannot be ruled out. The behaviour of the small companies studied in this research may or may not reflect behaviour at other small companies. Assumptions can be made whether the behaviours are the same in other similar companies but it cannot be proven without further research, which place limitations to this study. (Simon and Goes, 2013)

When it comes to limitations, some restrictions have been set for the research in order to be able to proceed within a workable scope (Thomas, Silverman and Nelson, 2015). Firstly, the research has been limited to contain empirical results from only small companies and more specifically startups, since they are assumed to represent and define the issues related to small companies. Since startups have been interviewed when collecting empirical data, there is also a focus on entrepreneurial settings with a completely new product or service and where production is in an early phase. Further limitations have been set in

relation to the types of companies, whereas this report focus on Swedish companies with hardware manufacturing in China.

Because of the limitations and delimitations presented to this research, some assumptions have had to be made in the analysis and discussion of the empirics and other findings.

#### 2.4 Data collection

According to Collis & Hussey (2013) there are some basic steps to follow when collecting data in an interpretivist study; Identify sample or cases, choose data collection methods, determine what data will be collected and design any questions, conduct pilot study and modify methods as necessary, collect the research data. When selecting interviewees and performing interviews as well as in collection of secondary data, these steps have been consulted. Under the interpretivist paradigm, the aim has been to explore data on understandings, opinions and attitudes and so on.

#### 2.4.1 Primary data

Primary data have been collected through semi-structured interviews with people representing companies that are relevant to the purpose of this study. Initially, when choosing interviewees, one startup was contacted which later on introduced other members of their business network that could contribute to this study. Because of this, the identification and choice of sample has been through networking or snowball sampling (Collis & Hussey, 2013). Most of the interviews have been performed face to face but in some cases Skype has been used.

The interviews performed have been semi-structured with open questions (Collis & Hussey, 2013). Hence the main content and the context of the interviews have been predefined but the questions have been open-ended so

that the interviewees could give more developed and in-depth answers. The aim with this has been to gain a deeper understanding of why and how some decisions have been made in the outsourcing process. In order to keep the interview questions open-ended, an interview guide has been designed prior to conducting the interviews where as few questions as possible were being asked. However, to accurately collect all the information needed, several follow up questions have been planned in order to be able to catch any information left out in the respondent's answers. As semi-structured interviews are flexible in their nature (Collis & Hussey, 2013) there is no pre-decided order or direct structure to the questions, but instead they are categorized and the few actual questions asked are dealing with various categories of information supporting the research topic.

When designing the interview guide, some potential problems were considered such as the interviewees having biased opinions or understandings. Further, the interviewee can also have certain opinions that what they do at the company is the right way to do it and give answers that they consider being the correct ones based on their biased opinion. (Collis & Hussey, 2013) Because of these potential problems, the design of the interview guide becomes important to catch all the relevant information that may be left out or faulty. As mentioned earlier, several follow up questions were therefore prepared in order to deal with this and to be able to challenge the respondants answers.

In order for the research to gain validity and understanding within context (Collis & Hussey, 2013), primary qualitative data have been collected through interviews with companies that reflect the purpose of the study, which is small companies or startups that are outsourcing hardware production to China. Further, an interview with Business Sweden has been performed prior to interviewing the companies. Because of this, sufficient information about procedures when outsourcing has been collected which have given a more in depth understanding of the process. With this as a background, the interviews

with startups could gain even more validity and contextualisation as it helped to elaborate accurate interview questions.

#### 2.4.2 Secondary data

Previous research and literature within both the field of supplier selection as such, as well as within other relevant fields affecting the research has been reviewed. This has provided a conceptual framework in which the interviews can be related and analysed. The secondary data have primary been retrieved through online databases using the University of Gothenburg library's' function "Supersök" and "Google scholar".

When selecting secondary sources to this research, those that have been cited by many other researchers have been preferred in order to gain validity and reliability since the credibility often are higher if this is the case. (Collis and Hussey, 2013)

#### 2.4.3 Analysing the research data

With the research being of a qualitative nature, accurate non-quantifying methods of analysing the data had to be chosen. The first issue of reaching a dataset able to grasp, is managing the qualitative data and scale down the acquired information to the scope of the research. The approach to analysing the data has been mainly theorizing, which means that the collected data has been confronted with alternative explanations from relevant theory. Mainly, beliefs and values have been identified in the primary research and then linked to theory. By doing so, an inductive approach has been used to construct a theory of how startups and small firm s purchasing functions relates to previous research and existing theory. (Collis & Hussey, 2013)

#### 2.5 Trustworthiness

Validity and Reliability are, according to Collis and Hussey (2013), two important factors to take into consideration when conducting a study. However, Bryman and Bell (2011) mentions that in order to ensure the quality of qualitative study criteria such as "trustworthiness" may be used which incorporates the aspects of validity and reliability. In order to strengthen the trustworthiness of a qualitative study there are, according to Collis and Hussey (2013), four aspects to take into consideration: 1. Credibility - How believable the findings are 2. Transferability - If the findings apply to other contexts 3. Dependability - If the findings are likely to apply at other times 4. Confirmability - If the investigator has allowed his/her values to intrude.

In order to increase the credibility of this study both secondary data and primary data was collected from different sources. Furthermore, every interview was recorded and transcribed as well as analysed by both authors.

One way of increasing the transferability of a study is, according to Bryman and Bell (2011), to describe the context in which the research has been conducted. Both the methodology part and some parts in the empirical findings try to describe this context in order to strengthen the transferability of the study. However, the aspect of transferability is also, according to Bryman and Bell (2011), connected to generalisation of findings, which is hard to do with qualitative findings from a case study.

In order to increase the level of dependability the process of data collection and methodology have been described. This in order to make it possible to repeat the study which according to Bryman and Bell (2011), is one of the most important parts when strengthening the dependability.

Furthermore, during the interview process as well as during secondary data collection personal values have been put aside and objectivity has been a part in increasing the conformability of the study. One way of making sure that

personal values have been left out is the transcription of every interview to clearly reflect what the respondents said without adding personal opinion and belief to the results. (Golafshani, 2003)

## 3 Theoretical Framework

The theoretical framework aims to cover previous and relevant research regarding supplier selection and startups. Sections regarding certain supplier selection methods and factors to consider when selecting a supplier are included in order to provide a foundation for the analysis.

#### 3.1 Startups

There is a clear trend in the creation of new small companies and ventures, which is the rise of startups. These are companies that have started from scratch and are often emerged from a new idea or concept that the entrepreneurs want to pursue. According to the Oxford dictionary, "startup" is a noun meaning "a newly established business" (Oxforddictionaries.com, 2016). These companies have not yet started to make any profit and are still setting up their business. A company can continue to be a startup for an unlimited time but other factors can decide whether it has grown out of the concept or not, such as being bought by a larger company, open more than one office, exceed 80 employees or attain greater revenues (Robehmed, 2013). It is not seldom that these companies encounter high risk and unforeseeable uncertainty, not least for the many managerial implications (Sommer, Loch and Dong, 2009). As an example of this, when making the transition from a personal to a professional management style the so-called "entrepreneurial crisis" occurs and at this stage management systems will play a critical role in a company's' development (Davila, Foster and Jia, 2010) which could exceed resources in a new venture with limited funds. The table below highlights some definitions of a startup.

Oxford Dictionary	•	"The action or process of setting
		something in motion
	•	A newly established business"

Mirriam-Webster	"A new business
	The act or an instance of setting in
	operation or motion
	A fledgling business enterprise"
Business Dictionary	"Early stage in the life cycle of an
	enterprise where the entrepreneur
	moves from the idea stage to
	securing financing, laying down the
	basic structure of the business and
	initiating operations or trading."

Figure 1: Definition of a startup (Oxforddictionaries.com, 2016; Merriam-webster.com, 2016; BusinessDictionary.com, 2016)

#### 3.1.1 Funding

Funding new business can be risky and does not always guarantee return on investments. Therefore, in traditional funding, investors often set many requirements or criteria that the venture has to fulfil in order to get the funds. These criteria are thoroughly evaluated by the investors and can be a demand of certain return on investment, such as ten times the investment in ten years. There can also be other criteria, such as unwillingness to make further investments if further backing is needed or that the investment can easily be liquidated. (Macmillan, Siegel and Narasimha, 1985)

A phenomenon in funding these small companies or ventures is crowd funding. This is an option for funding when the company is lacking regular investors and it turns to the consumers. A small amount of monetary means from many investors can help a startup company to get the funds they need to get going and crowd funding helps to fulfil it. (Ordanini et al., 2011) There are many sites online that organises crowd-funding such as Kickstarter (Kickstarter.com, 2016). By pitching an idea or business concept, the users or consumers can volunteer to sponsor the business with a small amount of money. Often a goal

is set together with the pitch of how much funding is needed to launch the business and when this sum of money is collected they can start their business. A great advantage and something that oftentimes characterises crowd funded projects or a business is that it involves relatively small contributions from many investors. (Kuppuswamy and Bayus, n.d.) With its many advantages for innovative projects, the crowd-funding concept is a typical financing instrument for startups. The capital entering into the project or business can be of various nature, such as donations, sponsoring, pre-ordering or membership-fees (Hener, 2011).

#### 3.1.2 Startup networks

According to (Nann et al., n.d.), networking with other startups has shown to be a success factor. One example of this is that having a larger alliance network highly correlates to the survival of a company and also has a positive effect on economic performance. Having a glance at the climate of startups in southern Sweden, several networks of startups exists such as Malmö startups, Swedish startup space and Øresund startups. Many of these also have collaboration between them. The idea of these networks is mainly to bring together people and startups that share the same challenges and to create and improve the startup ecosystem. (Malmö startups, 2016 & Øresund startups, 2016)

### 3.2 Purchasing

According to Van Weele (2010), the structure of the purchasing function is highly dependent on characteristics of the business and also by the situation. The size of a company is one of the characteristics that influence how the purchasing is being conducted, which also includes the decision making points in deciding on a supplier, products, material and so on. Purchasing decisions are also made on various levels. The strategic level covers the more long-term decisions that could affect the market position of the companies and top management often makes these decisions. Furthermore, the tactical level and the operational level are made by employees in the purchasing function and

include decisions like framework agreements, contracting and ordering as well as expediting processes. The strategic level of purchasing have four different factors which can affect the outcome, status of the purchasing function, purchasing knowledge and skills, purchasing's willingness to take risks and purchasing resources (Carr and Smeltzer, 1997). Further, Hong, Lee and Nie states that all of these factors can, to some extent, require a quite well developed purchasing function and expertise. It has to be both proactive and reactive as globalisation can make supply unreliable, which for many companies means to have a diversified supplier base in order to be prepared for changes in lead times or prices. With risks like these occurring when outsourcing manufacturing, supply chain structures becomes more complex, hence the need of effective supply chain management rises.

In industrial manufacturing, the purchasing process and decision strategies related to it, has a great impact on the price of the end product. Because of this, purchasing as a process becomes important as an effective process can help a company lower the price of the end product. By making the right decisions along the way, a company can thereby lower prices on material and manufacturing processes. It is the purchaser's task to unveil the cost structures of the suppliers as much as possible in order to be able to negotiate and also to be able to make production techniques more effective. Determining the purchase prices with suppliers is crucial to attain a competitive price on the end product and there are several ways a price can be set. As examples, there can be cost-based pricing, perceived value pricing, auction type pricing etcetera and it is among the purchasers tasks to find the most suitable one. (Van Weele, 2010)

As the purchasing function includes a lot of decision-making and since the price of the end product will be affected by the decisions made, a lot of factors must be looked into in order to make the right decisions. These factors can be both internal such as making the most possible of the company's strengths and reduce its weaknesses, as well as external such as in the right way include

factors from stakeholders and attend to risks. These factors and many more can imply on costs, hence also on the company's competitive position. Because of this and in order to make the correct decisions, purchasing must become supply management. (Kraljic, 1983)

#### 3.2.1 Purchasing and supplier selection methods

As stated by Gelderman and Semejin (2006), increased globalisation and competition in manufacturing industries have increased the need for flexibility in the supply chain, including control over the purchasing function and other sourcing operations. A critical stage in decision making for companies that want to compete on a global market is global sourcing, whether to do it and how to do it. Further, supply management must include a strong supply strategy, which in a simplified way according to Kraljic (1983) means, classification of materials to be purchased, market analysis, strategic positioning and action plans. One example of doing this can be to use the purchasing portfolio matrix.

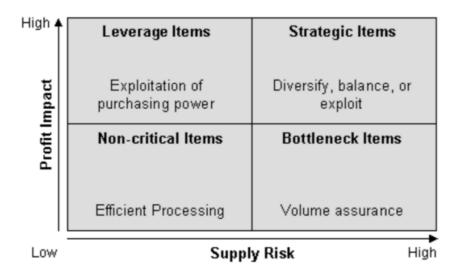


Figure 2: The purchasing portfolio matrix (Kraljic, 1983)

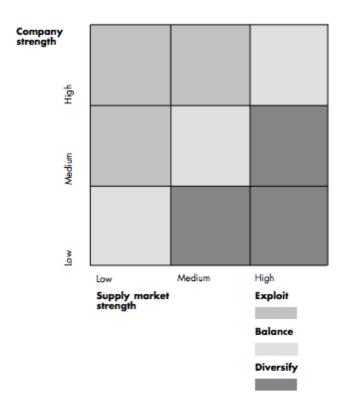


Figure 3: Assessing strength in the purchasing portfolio matrix (Kraljic, 1983)

The purchasing portfolio matrix is of particular good use for strategy decision making in large companies as it distinguishes whether to exploit, balance or diversify supply management based on the strengths of the company and the supply market. With help from the portfolio matrix, a company can shape their supply strategy in four steps. In the first step, supply items are classified in terms of volume, percentage of total purchase cost, impact on product quality and business growth. Further, supply risk is being assessed looking at available suppliers, demand and other opportunities. After classification of supply items and risk assessment, the items can be put into the categories strategic, bottleneck, leverage or non-critical items. Step two is a market analysis where the suppliers bargaining power is weighed against the company's' own power. In step three, the supply items are put into the matrix (Figure 1), which will give them a strategic value. In step four the work is concluded by making action plans for each item, meaning that proper actions are being selected in order to exploit, balance or diversify. Examples are to form partnerships for strategic products, assure supply for bottleneck products, exploit power for leverage

products and ensure efficient processing for non-critical products. (Kraljic, 1983)

Caniëls & Gelderman (2005) have extended the use of the purchasing portfolio matrix with a focus towards power and dependency perspective. Several researchers have concluded that companies make differences between strategies within each quadrant of the matrix, hence selecting strategy is not as simple as Kraljic (1983) implies but instead many factors take part in the decision making. The matrix clearly defines to exploit, balance or diversify power but it does not reveal anything about the dependence that the buyer and the supplier have in relation to each other and how to strategically move from one quadrant to another. It has been proven that if one party in the purchasing relationship has power over the other, that party will most likely be tempted to exploit that power. (Caniëls & Gelderman, 2005)

Bensaou (1999) have developed a slightly different purchasing portfolio where business relations are central. Investments made by the buyer and the supplier are looked at which can put the relationship in four different types, market exchange (low buyer and supplier investments), captive buyer (high buyer and low supplier investments), captive supplier (low buyer and high supplier investments) and strategic partnership (high buyer and supplier investments). This portfolio can also show the buyer supplier dependency and pinpoint what a buyer might need to do in order to gain more power, e.g. make higher investments which can be to scale up production or be more involved in product development at the manufacturing site.

According to Knight, Tu and Preston (2014) in strategic management, development of the purchasing function can be included. One way of developing the purchasing function can be to build purchasing capability and possibly to move from one quadrant to another in the purchasing portfolio matrix. Depending on how an organisation is structured, the skills and knowledge of it will vary. Therefore, part of the strategic management must be

to develop purchasing skills and knowledge in order to have the possibility to gain more power over suppliers. Skills can be of a technical nature but also more generic and strategic. Knight, Tu and Preston (2014) support the portfolio approach and add a context of knowledge and skills to it that suggests that companies also needs to address those factors when working with it.

#### 3.2.2 Strategy decision-making methods

Apart from purchasing portfolio matrices, there are several other methods of selecting and assessing the supplier base. Previous research on SME's (small and medium sized enterprises) mainly focuses on methods that are of a more simple nature. Park and Krishnan (2001) brings three different models to the table; the rational/normative model, external control and strategic choice. Further, Mayer-Haug et al (2013) measures performance in entrepreneurial talent and venturing, also with a focus on SME's. Their results pinpoint the diversity of outcomes that may come from newly started business and venturing, showing that it might be an issue of surviving, growing, employment or profit. All outcomes can be influenced by the focus that a firm has on supply chain processes, including supply management and sourcing.

The rational/normative model, external control and strategic choice are basic models used for making strategic decisions within an organisation. The first one of these three models focuses on the examination of internal and external environment and conditions. Following this examination, objective criteria can be set which subsequently leads to building the firm's strategy. The external control model sets focus merely to the external environment when deciding on a strategy while the strategic choice model emphasizes the internal conditions and the effects that executives can have on strategic decisions. (Hitt and Tyler, 1991)

These models are typically very differently used when comparing managers in large organisations and entrepreneurs. Busenitz and Barney (1997) argues that

venturing entrepreneurs and people typically involved in startups more often fall into biases and heuristics than those in larger organisations. There might be several reasons for this but mainly comprehensive decision-making is often not possible in smaller organisations that are lacking resources. However, using a heuristic approach in decision-making might in some cases be the most efficient way and it is often associated with innovation. Further, Busenitz and Barney (1997) speculates that biases and heuristics are crucial for decisions to be made at all in some entrepreneurial settings and one must be aware of the difference in visions and goals between smaller and larger firms.

#### 3.3 Purchasing risks

In any supply chain, risks can be found and the supply of goods and material is a substantial one. Shortage of goods can mean failure to meet customer demand, hence losing income, which will have a great impact on the success of a firm. Other risks that are connected to supply are wrong quality, failing to meet customer needs or even be harmful to the user. These risks can be divided into five dimensions of sourcing or supply risks; disruption of supply risk, price risk, stock and schedule risk, technology risk and quality risk. (Hallikas and Lintukangas, 2016) With the many risks of outsourcing, the need of an effective risk management is highlighted. Strategies for monitoring and mitigating the risks are of great importance, but also to implement a process for the risk management. The success of a company will in the end be affected by how well risks are handled and that the greatest risks are avoided or taken care of. A successful risk management process within a company will include assessment of the suppliers with monitoring and mitigation for trouble suppliers. Further, all employees should be aware of the risk management process and the process itself should on a regular basis be evaluated and improved. (Hoffmann, Schiele and Krabbendam, 2013)

## 3.4 Purchasing in small companies

Quite recently, the trend to purchase internationally has significantly increased and continues to do so. In this development, companies turning to production in other parts of the world will meet a set of challenges in adapting to foreign cultures and ways of doing business. This is a part of the supply chain management and can often demand much attention and a significant amount of work in order to be proficient. When speaking of this matter, large and multinational companies are often mentioned and those are also the ones who mainly drive the development. On the other hand small firms and startups may often meet more challenges and risks substantial to the survival of a company as their resources are naturally smaller. There are also less literature and framework for small companies to follow. However, small firms engaging in internationalisation of their supply chain and international purchasing are mentioned to be an emerging trend and they follow unplanned rather than planned paths. This will affect the strategy making, as decisions often tend to be "ad-hoc" and long-term goals and activities forgotten. Issues that are of great importance in a company are according to a study performed by Quayle (2016), leadership, strategy, financial management among other. Purchasing however, were shown to be much less important to smaller firms. (Agndal, 2006; Quayle, 2016)

Following the issue of size of the companies and their lesser resources, small companies often have to depend on external resources such as agents or other middle-hands to gain knowledge and expertise in finding new business opportunities. Agndal (2006) conclude that three factors lack in research about when small companies look to source internationally; what purchasing markets to enter, why these markets are entered and how the purchasing market entry can be characterised. (Agndal, 2006)

Following the above described situation, Agndal (2006) have contributed by looking at ten small Swedish companies sourcing abroad. The conducted research shows a phenomenon that is increasing and becomes more

important. The findings include that the purchasing market entry can be need-driven, opportunity driven or external-pressure driven with pressure coming from customers and other stakeholders. One fact that have appeared through Agndal's research is that there are often little or no thought on long-term strategies or collaborations when small companies venture into international purchasing.

### 3.5 Cooperative purchasing

As the complexity of the supply chain increases in an international and global business (Hong, Lee and Nie, 2013), one must find a way to overcome or mitigate risks. Cooperative purchasing is a method of working together with other companies that have the same challenges and small and medium sized enterprises can benefit from cooperating when outsourcing their production or when purchasing material from other countries. In cooperative purchasing a group can be created where the risks and challenges are faced together and where the small purchasers can get stronger in an alliance. (Wantao, 2013) Another name for merely the same method is pooled purchasing or horizontal collaboration to jointly perform purchasing together with other companies. The method can help minimize the costs of purchasing as well as maximizing the gains for the members. By collaborating in purchasing, costs can be decreased when it comes to the purchasing function as such but also for shipping and inventory etc. (Dewi, Baihagi and Widodo, 2015)

## 3.6 Supplier selection

The purchasing process in general and supplier selection in particular are critical aspects that companies have to take into consideration when conducting business, which is stressed by both Kahraman et al. (2003) and Krause et al. (2001). Criteria or factors that have affected buying companies and their supplier selection process have been discussed since the 1960s. According to Weber et al. (1991), in 1966 Dickson stipulated 23 criteria that vendors at that time found relevant. The most important criteria at that time were product

quality, on-time delivery and price and according to Benyoucef et al. (2003) those criteria are still relevant 40 years later. A list of the most important factors or criteria that Dickson stipulated is presented below.

Factor	Percentage Of Systems Using The Factor
Quality	96.6
Price	93.9
Delivery	93.9
Service	81.8
Technical Capability	63.6
Financial Strength	51.5
Geographical Location	42.4
Reputation	42.4
Reciprocal Arrangements	15.1
Other Factors	12.1

Figure 4: (Dickson, 1966)

Even though some factors presented by Dickson may still be relevant today, Cheraghi et al. (2004) claims that the importance of certain factors have changed between the period of 1966-1990 and 1991-2001. The reasons for this change are, according to the authors, due to technological advancements as well as globalisation and increased competition. In addition to the more traditional factors such as price, quality and delivery time the authors mention that communication, supply chain management and just-in-time were factors that gained in popularity and relevance.

Furthermore, in a study regarding companies in Brazil, Jabbour and Jabbour (2009) investigated whether environmental factors is an important part of the supplier selection process. The results shows that traditional criteria such as cost and quality are still highly regarded and most widely used and that environmental requirements are not used in the same widespread manner. However, the study also shows that even though traditional factors still may be

the most widely used selection criteria some larger corporations have incorporated an environmental approach into their selection process.

Furthermore, a study by Dabhilkar et al. (2009) shows that there are both positive and negative aspects connected to outsourcing of manufacturing. The research paper shows that by outsourcing manufacturing, certain factors such as economies of scale may have a positive impact on, as an example, product cost but a negative impact on volume flexibility. Therefore, the authors mention that when making a buy or a decision it is important to be aware of the fact that certain performance objectives have to be sacrificed in order to do better in regards of another performance objective. The paper also claims that outsourcing performance is more affected by factors connected to supplier selection than factors connected to supplier collaboration. This is exemplified by showing that supplier operating capabilities better predicts outsourcing capabilities in comparison to supplier relationship strategies.

#### 3.6.1 Order qualifiers and order winners

According to Hill (2000), the concept of order qualifiers and order winners are important to take into consideration when two companies are deciding whether to conduct business with each other or not. The authors also mention that the concept could be used to assess the factors that are important in making a supplier decision. He also mentions that it is important for a company to identify these factors in order to be competitive. An offer that fulfil the most basic standard requirements for a buying company is order qualifying and an offer that differentiates from competitors and are overachieving in a certain factor that is important for a buying company is an order winner.

#### 3.6.2 Supplier Relationships and Power Structure

One of the five forces, which were stipulated by Porter (1979) is the bargaining power of suppliers, which focuses on power structures between a buyer and

supplier. The bargaining power of a supplier is concerned with how much power a supplier has when it comes to negotiations of terms and conditions. If the buying company is relatively small, this power increases and vice versa.

Cooper and Ellram (1993) also states that SME's does not have the same negotiating power over suppliers because of lower volume orders than larger organisations. Furthermore, Towers and Burnes (2008) states that many SME's tend to have short-term trading agreements with their suppliers because of limited resources and a need of cash flow.

## 4 Empirical Findings

This part aims to present the empirical findings that have been compiled through the gathering of primary data. Firstly, the findings from an interview with Business Sweden are presented and thereafter the findings from each interview with the participating companies are presented. The aim of this chapter is to get a view of how the companies conduct their supplier selection process today aswell as issues they have encountered during that process.

#### 4.1 Business Sweden

The role of Business Sweden is mainly to assist Swedish companies in exporting to foreign markets, to buy from foreign markets or to establish themselves in foreign markets. The purpose is to strengthen relations both commercially and diplomatically. The first issue that small companies face when trying to find a supplier in another country, in this case China, is the production volume. Many smaller companies have a belief that by just going to China, potential manufacturers will "stand in line" in order to receive an order. This is not the case and if the product is characterised by high level of customisation and low volumes it will be quite hard to find a suitable supplier for a small company. (Sandén, 2016)

There are also other barriers to take into consideration when searching for a supplier. As a small company, you do not have a particularly strong position when it comes to negotiating. It is also hard to find the perfect supplier, which is where Business Sweden may be of service. For larger companies compliance is a main issue that could be crucial in deciding whether to cooperate with a certain supplier or not. This is not the case with smaller companies where price and quality often are of greater importance together with delivery times. Other issues that may arise when a supplier has been chosen is that the quality of the finished product does not fit the specifications that have been made and that they might differ from a previous prototype. Cultural differences may also play a part and as a small company you have to

decide whether to have a person that is dedicated to be on sight at the suppliers or not. Furthermore, piracy is a well known risk that has to be taken into consideration. If a company has a sensitive product more focus has to be put into selecting the supplier but it is very hard to protect yourself from piracy. (Sandén, 2016)

China in general and Shenzen in particular is still a popular market for small companies because of the accessibility but larger companies are starting to look into other areas such as inland China and Vietnam when searching for suppliers. One of the main reasons for this is that the wages in China and Shenzen have gone up by 10-12% each year for over 10 years. Smaller companies still mainly focus on areas such as Shenzen but as larger companies establish in other areas small companies may follow. From the point of view of a startup Eastern Europe, Turkey or even Portugal may be interesting supplier markets. Other supplier markets such as Indonesia and Mexico may also become increasingly attractive for both larger companies as well as startups. (Sandén, 2016)

In order to summarise the issues and challenges that smaller companies have to take into consideration when selecting a supplier in a foreign country one could state that production volume is of great importance. Poor product quality and stops in production together with being naive are also aspects that all must be taken into consideration as a company searching for suppliers in other countries. (Sandén, 2016)

## 4.2 Company 1 - Minut

#### 4.2.1 General information about the company

Company Minut AB
Founded 2014
Product Point (Home security)
No of employees 5-9

Interviewee Nils Mattisson
Position in the company Founder & CEO

Minut is a Malmö-based startup company that was founded in 2014. Their first product "Point" was launched through Kickstarter with great success as it raised about five times the initially targeted funds in only 30 days. Further, investments have been received from numerous well-positioned investors with backgrounds in companies like Huawei, Samsung, Apple and many more. Point, their first product is a "soft security" solution, which with the help from an app can monitor happenings in your home or other facilities. The difference from traditional surveillance is that there are no cameras but instead it can measure heat, pressure and other conditions in the room in order to detect differences in the inside environment. In 2014, Minut started production of Point in Shenzhen, China. A well-developed ecosystem that holds a majority of the world's hardware production. (Minut.com, 2016)

#### 4.2.2 Structure of purchasing function

When selecting supplier for the production of Point, no specific tools for supplier selection were used and there is no decided structure for the purchasing function as such. Instead, thorough works was done by looking at a few different suppliers and together with them discuss the potential for the product. Minut wants to work with a manufacturer that believes in the product and the manufacturer will not venture into a production process that they do not believe in. Hence, there must be a mutual belief in the product for a cooperation to

happen. Outside the basic scope of prices and volumes, it was also taken into consideration that the production facility had good access to sub-suppliers and that they could solve problems. Further, personal contacts are of great importance at this level of deciding on what manufacturers to choose. Evaluating a factory takes long time and it is a great amount of work, why limited resources has only allowed evaluation of about 4-5 factories. After selecting a manufacturer for the product, a great amount of work has been done in cooperation where Minut has spent several months on site while setting up the production. (Mattisson, 2016)

Some things that the company want to emphasize but don't have the resources to do are sustainability and CSR-issues. Though, they do have brief follow-up on some things, e.g. making sure that the supplier follows certain regulations for use of chemical substances. Further, the relationship with the suppliers are rather short-term since the company is still very young and it is hard to set relationships too far ahead. (Mattisson, 2016)

### 4.2.3 Biggest challenges of outsourcing manufacturing

When it comes to outsourcing the manufacturing function, Minut is eager to not see it as a challenge as such. Since there is no other option, they want to instead focus on what opportunities it may come with to let someone else take care of the manufacturing. Also, they have belief in Chinese handicraft and that they are among the best manufacturers in the world when it comes to plastic and electronic products. As described by Mattisson (2016), many places including Europe might in fact have worse quality than China.

Even though there is a huge belief in Chinese production, there are off course many challenges related to outsourcing in general. One of those is that you have to learn everything from scratch when you are doing a completely new product. Other than this there is also the fact that Minut is a small company and

they are not in a position to negotiate in the same terms as larger corporations might be. (Mattisson, 2016)

#### 4.2.4 Most relevant factors when selecting a supplier

When it came to select a manufacturer to produce Point, the product that Minut have developed, several factors were regarded. The most classical ones like price, communication and engineering resources are mentioned but also the belief in the supplier and "that it is a good place". With this Mattisson (2016) highlights that one of the most important factors when selecting supplier was that they actually believed in the product and also that Minut believed in them. Believing in your supplier includes many things but one highly important thing is that the factory seems to be a good work place and that the turnover of staff is not too high. China has large turnover of staff in general and a low turnover of staff can therefore be a good measure that the employees are comfortable in their workplace.

## 4.3 Company 2 - Bitcraze

#### 4.3.1 General information about the company

Company Bitcraze AB
Founded 2011
Product Crazyflie 2.0 (Quadcopter)
No of employees 5

Interviewee Marcus Eliasson

Position in the company Developer & Co-founder

Bitcraze was founded in 2011 and is a relatively small company with five employees including three founders. The person interviewed was one of those founders. At first, the company was considered a side project for the founders as all of them had different careers on the side but after a period of product development and marketing the founders could switch to focusing on Bitcraze

full time. The main product that Bitcraze has developed is a quadcopter, the Crazyflie that is manufactured in Shenzen, China. Other than the quadcopter, the company also focuses on developing a platform that is open source to make sure anyone is allowed to modify the quadcopter. (Eliasson, 2016)

The company is self-financed, as initiatives such as Kickstarter had not revolutionised the market at that point in time. Such initiatives existed but did not have the same impact as of now. The vision of the company is not mainly to grow and gain market shares but instead to allow people to take part of what the company has developed and make it available to everybody. Increased revenue is a part of it but the main driver for the company is to reach out to as many people as possible and allow them to be a part of the development of their products. The main markets for the Crazyflie is USA and Germany and the retail price is 180 USD + VAT. The product could, according to Bitcraze, be characterised as a low volume and high margin product. (Eliasson, 2016)

## 4.3.2 Structure of purchasing function

Bitcraze has a relatively long-term relationship with one specific supplier. This relationship has been going on since the foundation of Bitcraze and includes a set of interesting points. The manufacturer also acts as a seller of the product. Bitcraze focuses on product development and customer contact whereas the company in Shenzen handles production, logistics and sales. Bitcraze initiated this relationship since they had previous knowledge about the specific company and no other actor (such as business Sweden) acted as an intermediary in this process. (Eliasson, 2016)

#### 4.3.3 Most relevant factors when selecting a supplier

For Bitcraze, the fact that the company that would manufacture the Crazyflie also could handle sales and logistics was the major factor that led to a point of decision. Another factor that was important was short lead times. This in order

to make sure that the process goes smooth and that the product reaches the customers relatively quickly. Factors such as price and quality are, according to Bitcraze, of relative importance. The reason for this is that all relevant manufacturers in Shenzen provide a cheap option, which has the correspondent quality. However, they mention that it is up to the buying company to make sure that they specify what they want. Quality and price are, according to Bitcraze, important factors but not as important as the previously mentioned ones. Factors such as environmental and social factors are, according to Bitcraze, hard to focus on as a small actor with little financial strength. However, if customers were to show an increased interest in those factors more focus would be put into them. Other factors such as proximity to the port of Hong Kong is important which also could be linked to the factor of short lead times. The most important factors for Bitcraze when selecting a supplier could therefore be summarised as high level of collaboration and short lead times. (Eliasson, 2016)

#### 4.3.4 Biggest challenges of outsourcing manufacturing

One of the main challenges, according to Bitcraze, is the fact that now when they are a relatively large customer for a small supplier they have an acceptable level of influence regarding price and other factors. However, if they were to switch to a larger supplier they would be a small actor and lose much of this influence and power. This is something that Bitcraze is considering at the moment. Another aspect to take into consideration is cultural differences. An example of this that was mentioned during the interview is that the buying company has to specify everything, even how the product should be packaged in order to be transported. If this is not done the product may be packaged in a bad way, which in one case was a plastic bag. Therefore, it is very important to be specific regarding everything from colour to packaging. (Eliasson, 2016)

## 4.4 Company 3 - Ewa Home

#### 4.4.1 General information about the company

Company Ewa Home (Ewa Solutions AB)
Founded 2013
Product Smartplug (Home assistance)
No of employees 1-10

Interviewee Magdalena Gräff
Position in the company Co-founder

Ewa Home is based in Vellinge, in southern Sweden and the company have been running for a few years. Their product is a Smartplug developed for home assistance with an app that controls it and it can be suitable for elderly care so that relatives can follow their dependants' every day. The hardware manufacturing partner is based in Taiwan but the production is mainly being done in Shenzhen, China. (Gräff, 2016)

#### 4.4.2 Structure of purchasing function

Ewa Home differentiates from many of the other companies in this study in how they work with purchasing. They seem to have a bit more structure and also they have appointed one person that works full time with purchasing and logistics. This person has a lot of experience and contacts with manufacturers. Having a structure and a plan with the purchasing function has led to that a more thorough work has been made in regards to supplier selection. The production started off with a supplier which they were familiar with through previous experiences but it has then shifted slightly as a new supplier have been introduced. The reason for this was that the first supplier relationship wasn't fully satisfying and extensive work have been done to find a new one. (Gräff, 2016)

When selecting suppliers, a lot of networking has been done and this is something that representatives at Ewa Home want to promote. Contacting third parties like trade centres or other organisations that helps companies with contacts such as e.g. Hardware Club is recommended. With the help from these outsider parties, lists were assembled over potential suppliers which then were visited and assessed on site before selecting the supplier that were most suitable for the needs of the companies. No models or specific tools from the theory of purchasing/sourcing have been used but instead the company have had trust in the experience in their staff. Further, the company wants to have long-term relationships with their suppliers, but sometimes you have to change because of various reasons. They have already changed supplier once and there are no guarantees they don't have to do it again. (Gräff, 2016)

### 4.4.3 Challenges of outsourcing manufacturing

When it comes to challenges, there are several different ones mentioned by Magdalena Gräff (2016). One of the biggest challenges is communication, including barriers in language and culture. Several misunderstandings have occurred because of this and even though the company are in contact with the supplier every single day some things are missed out in the communication. Other than communication issues, there have also been some challenges regarding different working methods such as the manufacturer having old colour schemes, leading to the products being of wrong colour and having to be reworked.

Other than those practical challenges, there are also challenges occurring on another level. This includes the power distance between Ewa Home and their suppliers where Ewa Home is a small company, hence not being a prioritised customer and having a harder time negotiating prices because of the rather low volumes. (Gräff, 2016)

### 4.4.4 Most relevant factors when selecting a supplier

In the supplier selection process, several factors were considered before choosing a supplier. Price, quality and service level are important factors, which are affected by what kind of relationship the supplier have to their sub-suppliers. Therefore, one of the most important factors for Ewa Home when selecting suppliers, are these supplier relationships and also their ability to deliver what is asked for. Further, Ewa Home wants to trust their suppliers as there are no written contracts and the relationship highly depends on the parties being professional. Because of this, the company never choose a supplier without proper references, which can be other customers or networks of varying sort that can recommend them.

## 5 Analysis

This chapter consists of an analysis that takes both previous research from the theoretical framework and the empirical findings into consideration. The aim is to provide an understanding of issues startups currently deal with regarding supplier selection and the potential of encountering those issues.

### 5.1 Structure of the supplier selection process

Just by looking at the few companies interviewed and reviewed in this study gives a clear picture of how different the needs can look for various firms. The interviews also clearly shows the difference in ambition and aims between the companies where some of them have the ambition to grow as large as possible and some don't have that ambition. As an example of this two of the companies want to grow larger and have a more traditional approach to making business while another have the main intention to reach out to as many people as possible to take part in the development, including using an open source etcetera in their software (Eliasson, 2016). With this in mind, it is obvious that there are diverse needs for various companies and those of small companies can vary much from the typical large corporations who focus more on revenues and effective production etcetera. Hence, one must have an understanding for this when creating frames for structures or deciding upon tools to use in decision making such as selecting suppliers.

As earlier mentioned a lot of the methods described by Bensaou, 1999, Caniëls & Gelderman, 2005, Kraljic, 1983 are connected to purchasing and supplier selection are made with a portfolio approach. Kraljic's matrix is one example of this. These portfolios are often adapted to larger companies that have several products and parts ordered from several suppliers. They also tend to diversify the purchasing portfolios and divide parts so that strategic decisions can be made accordingly. When it comes to small companies using such models, many of the benefits will be lost since they often have fewer products and parts

as well as fewer suppliers. The structure that comes with the use of existing models may also not be suitable because of lower volumes and using them might even cause more harm and consume whatever resources there are instead of supporting the purchasing function and ease the supplier selection process. Summed up, a startup or other small company would benefit of not adapting to follow those narrow structures of existing tools as there would be a risk of losing the possibility to innovate and also since it would consume a majority of the resources that the company possess.

As described earlier, purchasing portfolio matrices is extensive work and often more suitable for larger corporations while smaller firms and entrepreneurial settings such as startups often fall into biased and heuristic methods in their decision making (Busenitz and Barney, 1997). Surely, smaller firms have other focus areas and want to make the supplier selection process as easy as possible but it must be known that this is a strategic choice and might have long-term effects on a the success of the company. Therefore, some kind of model that is more easily operated should be used in order to get the structure but that still allows the entrepreneur or startup to keep their focus on innovating and refining their product. The idea of adapting and solely use one of the many tools or portfolio approaches would therefore be pushing back the possibility to innovate. Assuming that being a small innovative startup is the modern way to do it, this means that existing tools and models are inadequate. However, there is nothing stating that they cannot be adapted to fit the needs of small companies instead of the other way around.

Looking at the dependency perspective by Caniëls & Gelderman (2005) or to centralise business relations as described by Bensaou (1999) as examples, these models could be cherry picked for the parts most suitable. A way to do this would perhaps be to locate the position where the company stands in the power balance described by Caniëls & Gelderman (2005) just to be aware of what demands and requests you are able to make and leave it there. Perhaps it is not an absolute must to move inside the power dependency quadrant right

away but this gives the possibility to make the right decisions. After finding a position in the quadrant, one can move on to pick the best part of another model like that of Bensaou (1999) and work with the relationship accordingly. As an example, if you as a company have less power, then work on creating a good relationship where the supplier can benefit from your success. A real example of this can be found by looking at Bitcraze. They do not feel the need to grow and move in the power dependency quadrant and further they have included their supplier in the sales process why the supplier can benefit and get more control while Bitcraze can fully rely on them (Eliasson, 2016).

Park and Krishnan (2001) are mentioning the rational/normative model, external control and strategic choice. These are more simple models that can be used by companies that have lesser resources and where decisions can be made in a more heuristic way. However, these models are not specifically designed for purchasing even though they can be used when making decisions such as selecting a supplier. According to Hitt and Tyler (1991), these simple models can be used to build the firm's strategy using objective criteria or to find relevant factors in the internal or external environment. With the use of these more heuristic models, the small companies are allowed to work with limited resources but are still able to pinpoint relevant factors upon decision making. From this setting, there are possibilities to structure the purchasing function without restricting oneself to complicated purchasing portfolios. As an example, a rather basic research could be made regarding internal and external environment, leading to setting the firm's objective criteria for selecting suppliers. Using these criteria as a tool or guideline would institute a basic structure based on the firm's needs and potential beliefs. From this point the structure could then be developed and improved continually as the company grows or when the needs change, which they most likely will do with the company becomes larger and the knowledge and expertise advances within the company. This would also contribute to the company being able to set both long-term and short-term goals which can be the foundation of their strategy.

The companies interviewed in this study, all mention that there is no specific method used in their purchasing process but instead focus is on gut feeling and that they select suppliers that "feel good". Only one of the companies has an employee who is fully dedicated to logistics and purchasing, the others sort these things out as they come. This indicates that entrepreneurial settings and startups are less dedicated to making basic company functions work correctly and are more focused on developing the product, which also relates to Mayer-Haug et al., (2013) statement that these companies often have this kind of approach. This is fully understandable, looking at the lack of resources but it can also be an issue if and when the company starts growing. A middle-way between a fully developed purchasing portfolio approach and a heuristic approach should be able to find. If this could be managed, the companies could get the structure without the implications and restrictions that comes with it. Once again relating the issue to the findings of Hitt and Tyler (1991), this middle-way could be to be satisfied with doing a quite simple groundwork based on finding internal and external forces that sets criteria for supplier selection. Doing this will most likely decrease the risk of making bad decisions only based on a gut feeling or selecting suppliers that "feel good".

Looking into the supplier selection process and the relationships that the interviewees in this study have with their suppliers, challenges are quite easy to spot. When asked about the relationships, they are primarily short-term based and without clear contracts. As an example, according to Magdalena Gräff (2016), Ewa Home only have verbal contracts and the supplier relationships are based mainly on a feeling of trust between the parties. An experienced employee have the main responsibility and turn to his or hers experience in the field of purchasing, hence the entire supplier relationship depend on this person. The initial selection of suppliers also tends to be quite unstructured in many of the cases. According to Nils Mattisson (2016) at Minut, a few suppliers were contacted about the opportunity to manufacture their first batch and the selection was based on mutual belief, meaning that Minut believed in the abilities of the supplier and that the supplier believed in the product. This is once again an example of a company turning to gut feeling and

using a mainly heuristic approach without basic structural work being done. According to Mayer-Haug et al. (2013), this is typical for small companies and also good for entrepreneurial settings.

To further look into supplier relationships and how the relationships look like after the selection have been made, startups continue to lack structure (Gräff, Mattisson, 2016). Above presented cases where only one person takes care of the supplier relationships and where written contracts don't exist are both examples of very risky situations. These situations can lead to supply chain risks, which according to Hallikas and Lintukangas (2016) can be shortage of material or other supply and sourcing risks, which can heavily affect quality of the product as well as timeliness towards the end customer. As these risks belong to factors that startups are not as often highlighting, there is a substantial risk that they can come forth and create problems that you do not want to have as a newly established business as they could then potentially put the entire company at stake. With the many risks that could potentially harm the company in mind, one can easily see that the issue has to be properly addressed. The combination of the risk situation and lacking structure means that if for any reason the responsible person, such as the one handling supplier relationships at Ewa Home, leaves the company all knowledge can be lost. Decisions that have been based on personal relations and gut feeling can then no longer be explained and the contracts cannot be verified. If only there was a simple structured groundwork as to handle risks somewhere in the company, they could be mitigated or evaded. Other co-workers can also easily take over and find the needed information in a situation like that. The idea is supported by Hoffmann, Schiele and Krabbendam (2013) who argues that all employees should be aware of the risk management process. In the same way all employees should be aware of other processes that could potentially put the company in a bad position, such as how to secure supply and manage supplier relationships.

Another aspect of being a small company is as many times mentioned earlier, the lack of resources, which might imply difficulties to do a proper groundwork. A possibility here is to turn to other organisations where help can be found. Examples of this can be to cooperate with other companies dealing with the same kind of matters and also to turn to organisations specialised in certain fields such as Hardware club or Business Sweden. These external companies and/or organisations can be found when working with strategy decision making such as external control.

Looking at outsourcing of production and manufacturing abroad, especially when it comes to electronic products, the Guangdong province in China and cities such as Shenzhen are the most common (Sandén, 2016; Mattisson, 2016). According to Mattisson (2016), one of the main reasons and a factor for selecting a supplier in Shenzhen is that there are practically no other choices, Shenzhen holds a majority of the type of production in which they work, following this fact, the factories there also have the best connections with the correct sub-suppliers. Along with the many opportunities this comes with, there are also significant challenges such as being far from the production. Continuing on the issues presented above, this makes it even more important to have a basic structure that is easy to follow and that there are distinct contracts with the suppliers. All of the respondents in this study have somehow stated that suppliers have been selected which "feel good", "can be trusted" or upon similar grounds. Being a small company with limited resources, this is off course important since it is close to impossible to be on site and control everything they do, hence trust becomes rather crucial. Though, without basic structure and with no follow-up you can never know if the mutual trust or good relationship that you based the supplier selection on is for real or not. This is yet another example of why some kind of simpler model or tool that is easier to work with is needed even in the smallest of organisations.

### 5.2 Factors to consider when selecting suppliers

As presented in the theoretical framework there are several criteria that are of interest for buying companies when deciding on which supplier to use. This process is critical to the success of a firm, which makes the results from the interviews quite interesting. A majority of the companies that participated in this study stated that they did not have any specific focus on supply chain management or a specific role dedicated to purchasing and supplier selection. As mentioned earlier, most of the companies claimed that their supplier selection decision was based on recommendations and knowledge about a certain supplier rather than extensive supplier evaluation. According to Coleman (2015), small companies often have a lack of focus on supply chain management, which may have a negative effect on their growth potential. This corresponds well to the companies that participated in this study and could suggest that an increased focus on supply chain management, and thereby also on the supplier selection process, could have a positive impact on their business at large. Instead of viewing the supplier selection process and supplier evaluation as something costly and unnecessary it perhaps should be seen as an investment for future growth. Even though the companies in this study may not have the immediate resources needed to make such an investment and other areas may be of greater concern it could be argued that supplier selection and supplier evaluation are of such great importance that it may be prioritised in favour of other areas.

As stated earlier, previous research shows that the process of selecting a supplier is of critical importance and it could therefore be discussed that it should be treated equally with other critical success factors. On the other hand, small companies do not have the same financial strength as larger corporations that may undermine the possibilities of having an extensive supplier selection process. With this said, if supplier selection is a critical factor that may have a big impact on the financial performance of the company one could argue that more focus should be put into this process than what the companies in this study is doing at this point in time.

Furthermore, a majority of the companies stated that the level of communication and collaboration and just-in-time were the most important factors when making a supplier selection decision. This corresponds well to what Cheragi et al (2004) stated in regards of the change from traditional supplier selection criteria such as price. With that said, the factor of price was not a factor that was considered as equally important as level of collaboration and just-in-time. This fact is interesting since, as previously stated, small companies do not have the same financial strength as larger corporations which would suggest that price would be one of the most important factors to take into consideration. However, this is also connected to what was discussed earlier that has been stated by Sandén (2016) that small companies do not have the same leverage and ability to choose a supplier. Shenzen is basically, at this point in time, the only choice for small hardware manufacturing companies that seeks to outsource their production, which leaves smaller companies no choice, but to outsource their production to this region. With this said, price should be an important factor for a small start-up company when selecting a supplier but may not be that important because of lack of bargaining power and choices.

Furthermore, environmental requirements that, according to Jabbour and Jabbour (2009), have had an increased focus are not something that the small companies of this study take into consideration to any greater extent. The reason for this is that they neither have the financial strength nor the external pressure from customers to focus on this issue. However, when asked about working conditions at the factories, a majority of the interviewees stated that it is something that is important to take into consideration when selecting a supplier. This would suggest that social issues are more highly regarded than environmental issues but would, most likely, be hard to monitor and follow up on with the sparse resources these companies have.

Both Minut and Bitcraze emphasise the importance of time to market, short lead times and high level of collaboration. Price is a factor that is not emphasised

that much that may be because of the lack of bargaining power or just because of the price level in Shenzen is pretty similar between suppliers. With all this in mind, one could argue that the traditional factors could be considered "order qualifying" factors for the companies in this study whereas newer factors such as level of collaboration, communication and just-in-time could be considered order "winning factors". This suggests that both traditional factors and newer factors play an important role in the supplier selection process for the small companies that participated in this study but in different ways. None of the companies stated price as a key factor for choosing a supplier but all of them mentioned collaboration and communication. The interviews also shows that price is not completely of the radar as a factor in the supplier selection process but instead a supplier that would be totally out of line with other suppliers in the area would not even be considered. This further strengthens the argument that price is an order qualifying factor for the small companies in this study.

The size of the company and the production clearly has an effect on which factors are considered most relevant when selecting a supplier, as stated by Cooper and Ellram (1993). The companies that participated in this study does not have the bargaining power that larger corporations have and can't negotiate prices and put pressure on the suppliers in the same way. This may also be one of the reasons why factors such as collaboration and communication have become more of order winning factors. Instead of viewing the position of a small company as a hurdle it could instead be viewed as a way of strengthening the relationships with suppliers by communication and collaboration instead of putting pressure on the suppliers due to the size and financial strength of the company. However, this is still an issue that is hard to ignore.

### 5.3 Structure and relevant factors

Upon questioning the startups that has taken part in this research, some factors that are not mentioned by Dickson (1966) has been brought up. The table below presents these factors that can be said to be non-traditional and more reflect

what a modern startup company think are among the most important when selecting suppliers. Summarising these factors, they are more soft factors that highlight the importance of cooperation and supplier relationships. Some of the factors that the interviewees found highly relevant when selecting a supplier corresponds to what Cheragi et al (2004) presented as complementary factors to the factors stated by Dickson. These factors include just-in-time and, to a certain degree, communication which could be related to "high level of collaboration". However, the interviews shows that softer factors such as trust and high level of collaboration are of greater importance to the small startup companies participating in this study than more traditional factors, as mentioned earlier.

New factors	Expressed by
Mutual belief in the product	2 out of 3
Trust	3 out of 3
Working conditions in the factory	1 out of 3
High level of collaboration	3 out of 3
Lead times (just-in-time)	2 out of 3
References	1 out of 3

Figure 5: New factors for supplier selection and the number of respondents mentioning them.

It has previously been stated that none of the current models regarding purchasing or supplier selection are particularly suited for small, entrepreneurial ventures and that a combination of certain elements from different models may be preferable. However, it is also important for these companies to keep the innovative spirit and not get caught up in a too high level of structural administration when selecting suppliers. One way of doing this, as a small startup company, is to identify the most important factors to consider when selecting a supplier. The table above exemplifies such factors but will, naturally, differ based on the needs of each company. The factors that have been

identified as most important could then act as framework for what parts of preexisting models that could be used in order to gain some level of structure in the supplier selection process. This solution would both take the individuality and innovative spirit of each company into consideration without burdening them with the high level of administration, structure and costs that come with other models.

### 6 Conclusion

This chapter aims to provide an answer to the purpose and the research questions through what has been presented in the theoretical framework, the empirical findings and the analysis. The chapter also includes a section regarding suggestions for further research.

### 6.1 Concluding remarks

The purpose of this study deals with the issues small startups face in the supplier selection process and what supplier selection factors to consider that are of great importance to such companies. After conducting research in the field of supplier selection and the issues connected to that process some interesting results have emerged.

The first research question deals with how well existing tools for supplier selection fit the needs of a startup and how issues such companies face when selecting a supplier can be dealt with. One of the most distinct findings is that existing models for supplier selection and decision making are not suitable for venturing startups. The reasons for this include lack of resources, highly varying needs and the need to keep the innovative spirit. The fact that existing models do not suit this kind of business has contributed to the rise of an unstructured process where decisions have been made based on "gut feeling". This is not the optimal way of making crucial business decisions such as selecting suppliers as it is connected to supply risk. Even though it is not the optimal way, it is still important for a startup to keep the innovative spirit which may be hard if a too high level of structure is implemented. However, it is highly possible to pick the best parts out of existing models and create a framework that suit the needs of each individual company. By doing this both structure and innovation can be achieved without compromising the focus on core activities.

The second research question deals with the factors that are important to take into consideration when selecting a supplier and how these factors affect the supplier selection process. As supplier selection is a crucial activity for any business it is important to identify supplier selection factors that are synchronised with the needs and expectations of each company. The startups that participated in this study highlight that new "soft" factors such as trust and a high level of collaboration have become increasingly important when compared to traditional factors such as price and quality. Traditional factors could be considered "order qualifying" factors and the new ones "order winning". Startup companies are in need of suppliers that comply with the new factors since they themselves are lacking resources and thereby need a supplier that can handle production independently in a trustworthy manner.

The issues that startups face when selecting a supplier are mainly connected to lack of structure in the supplier selection process and lack of resources which could be exemplified by basing a decision on "gut feeling". In order to select a supplier that is suitable for the needs of a company, critical factors must be identified to be able to stipulate a framework for what parts of existing models that can be used. By doing this it is possible to obtain a level of structure in the supplier selection process that is tailor-made for each specific company without sacrificing the innovative spirit and totally submit to a level of structure that may not be necessary.

### 6.2 Suggestions for further research

The empirical findings in this study mainly derives from three respondents, hence it is hard to generalise about how startups are working with supplier selection. In order to obtain a deeper understanding of the various needs that startups have and to validate the results regarding supplier selection methods and order winning factors, further research needs to be conducted that include a larger amount of startups.

Further research may also focus on creating a template for supplier selection in small companies that is based on other relevant methods. By doing so, companies using this template could, as an example, locate internal or external factors and thereafter utilise the template. Naturally, the exact method is something that has to be developed through further research.

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# Appendix 1

Interview	auide:	<b>Business</b>	Sweden
	gaiac.	Bacilloco	O II O GOII

What is Business Sweden's role?	
<ul> <li>Are there many swedish companies selecting suppliers in China?</li> <li>- small, big etc?</li> </ul>	
Generally what to think about?	
Small:	
Large:	
How to do it (procedure)?	
Small:	
• Large:	
Risks and challenges?	
Small:	
Large:	
Should they use agents or other intermediaries?	
<ul><li>- if yes, who/how/why?</li></ul>	

# Appendix 2

### **Interview guide: Startups**

- Information about the company.
- Size, employees, customer segments, strategy, vision, product quality, volumes.
- How is your purchasing function structured?
- Where is your production located and why?
- Did you have a lot of possible options?
- What steps have you followed in your purchasing process?
- What have been the points of decision?
- What have been your selection criteria?
- What have been the main issues when it comes to the outsourcing of your production?
- Have you considered risks/challenges and how?
- Any challenge with being a small company?
- What have been the biggest challenges?
- Understanding between you and suppliers?
- Are they taking your requests seriously?
- How do you cooperate with your suppliers?
- Do you have plans for a long-term relationship with the suppliers?
- How have you been able to negotiate price and other terms?
- How are you experiencing that the cooperation works?
- Are there a lot of issues during production?

- How close do you work with the manufacturer?
- How much are you involved in the production process?
- How does the follow-up work? (PPAP, audits etc.)
- Anything further to add?
- Would you do anything differently the next time?
- CSR?
- How do you work with sustainability?
- Suggestions for other startups sourcing globally?
- Is it ok to mention the company name in the report?