Purchasing and Supply Strategies for SMEs in the Construction Industry

A MASTER THESIS PRESENTED

BY

CHRISTOFFER C. V. NILSSON AND CHARLIE M. K. SUNDBLAD

FOR

THE DEPARTMENT OF INDUSTRIAL MANAGEMENT AND LOGISTICS

ADVISED BY

LOUISE BILDSTEN, FACULTY OF ENGINEERING, LUND UNIVERSITY AND

CARL MATTSSON, SAVE BY SOLAR

AND EXAMINED BY

ANDREAS NORRMAN, FACULTY OF ENGINEERING, LUND UNIVERSITY

IN PARTIAL FULFILLMENT OF THE REQUIREMENTS

FOR THE DEGREE OF MASTER OF SCIENCE

IN THE SUBJECT OF MECHANICAL ENGINEERING

LUND UNIVERSITY

LUND, SWEDEN

JUNE 2018

Purchasing and Supply Strategies for SMEs in the Construction Industry

Abstract

Since the purchasing expenditure of many companies is such a large part of the total cost and 99,8 % of companies are classified as Small and Medium Sized Enterprises (SME), one might expect that theories on purchasing strategy would not only be conducted for large companies but also SMEs. In order to fill this gap in theory, this thesis aims to create a purchasing strategy framework for SMEs in the construction and specialist contractor industry built on current purchasing theories of large companies and theories of SME behaviour and actions. The study has been conducted with replication logic through a literature review with the briefsearch and pearl growing method to come up with a framework for SME purchasing. The framework was later tested empirically with four case studies through interviews to find key success factors of SME purchasing strategy. The study resulted in a framework called the *"SME Purchasing Cloud"* which looks at four elements of SME purchasing: environment, resources, dynamic capabilities and purchasing strategy. The fourth element; purchasing strategy is summarized in a sub framework called the *"SME Strategic Purchasing Framework"* with seven steps of purchasing actions for SMEs and a core of overall corporate strategy and management priority. To complete the framework, four key success factors for SME purchasing strategies have been identified: relationship, trust, communication and risk mitigation. The framework will help SMEs in the construction industry to structure their purchasing function and actions. The results could possibly be generalizable for other industries but have in this thesis been specified for the construction industry.

Keywords: SME, Purchasing, Strategic purchasing, Construction, Specialist Contractors

Contents

1 Introduction 1
- 1.1 Background . . . 2
- 1.2 The Company Save by Solar . . . 3
- 1.3 Construction and Specialist Contractors . . . 4
- 1.4 Problem Formulation . . . 4
- 1.5 Purpose, Research Question and Goals . . . 5
  - 1.5.1 Purpose . . . 5
  - 1.5.2 Research Question . . . 5
  - 1.5.3 Goals . . . 5
- 1.6 Focus and Delimitations . . . 5
- 1.7 Definitions . . . 6
- 1.8 Report Structure . . . 7

2 Methodology 9
- 2.1 Research Philosophy . . . 10
- 2.2 Approach . . . 11
- 2.3 Research Strategy . . . 11
  - 2.3.1 Quantitative vs. Qualitative Method and Case Studies . . . 12
  - 2.3.2 Single vs. Multiple-Case Studies . . . 13
  - 2.3.3 Generalizability and Replicability . . . 13
- 2.4 Research Choice . . . 14
- 2.5 Time Horizons . . . 14
- 2.6 Techniques and Procedures . . . 15
  - 2.6.1 Theory Development . . . 16
  - 2.6.2 Case Selection . . . 17
  - 2.6.3 Design of Data Collection Protocol . . . 17
  - 2.6.4 Data Collection . . . 18
  - 2.6.5 Analysing qualitative data . . . 18
- 2.7 Credibility . . . 19
  - 2.7.1 Construct Validity . . . 20
  - 2.7.2 Internal Validity . . . 20

2.7.3 External Validity . . . 20
2.7.4 Reliability . . . 21

3 Theory 22
3.1 Introduction . . . 23
3.2 Size Effects and SME Characteristics . . . 24
3.3 Environment . . . 25
3.4 Dynamic Capabilities . . . 27
3.5 Resources . . . 29
3.5.1 Valuable Resources . . . 31
3.5.2 Rare Resources . . . 31
3.5.3 Imperfectly Imitable Resources . . . 31
3.5.4 Non-Substitutability . . . 32
3.6 Purchasing Strategy . . . 32
3.6.1 Company Corporate Strategy . . . 32
3.6.2 Management Priority . . . 34
3.6.3 Need Assessment . . . 34
3.6.4 In-sourcing/Outsourcing . . . 36
3.6.5 Supply Chain Mapping . . . 37
3.6.6 Supply Market analysis . . . 38
3.6.7 Category Strategy . . . 40
3.6.8 Develop, Manage and Evaluate Suppliers . . . 46
3.6.9 Supply Chain Integration and Total Cost of Ownership . . . 47

4 Empirical Study 49
4.1 Case Company Data . . . 50
4.2 Torpheimergruppen AB . . . 51
4.2.1 Environment . . . 51
4.2.2 Dynamic Capabilities . . . 51
4.2.3 Resources . . . 52
4.2.4 Purchasing Strategy . . . 52
4.2.5 Key success factors . . . 55
4.3 TEAM Skåne Bygg AB . . . 56
4.3.1 Environment . . . 56
4.3.2 Dynamic Capabilities . . . 56
4.3.3 Resources . . . 57
4.3.4 Purchasing Strategy . . . 58
4.3.5 Key success factors . . . 61
4.4 Rörläggaren AB . . . 62
4.4.1 Environment . . . 62
4.4.2 Dynamic Capabilities . . . 62

4.4.3 Resources . . . 63
4.4.4 Purchasing Strategy . . . 63
4.4.5 Key success factors . . . 65
4.5 Knut Edstrand Byggnads AB . . . 67
4.5.1 Environment . . . 67
4.5.2 Dynamic Capabilities . . . 67
4.5.3 Resources . . . 67
4.5.4 Purchasing Strategy . . . 68
4.5.5 Key success factors . . . 70
4.6 Cross-Case Findings . . . 70

5 Analysis 72
5.1 SME Characteristics . . . 73
5.2 Environment . . . 73
5.3 Dynamic capabilities . . . 75
5.4 Resources . . . 76
5.5 Purchasing strategy . . . 77
5.6 Key Success Factors . . . 84

6 Conclusion 85
6.1 RQ: How should SMEs in the construction and specialist contractor industry work with purchasing and supply strategies? . . . 86
6.1.1 SUB RQ 1: Which aspects from current research of purchasing strategies developed for large companies are relevant for SMEs in the construction and specialist contractor industry? . . . 87
6.1.2 SUB RQ 2: What have been the critical success factors for SMEs in the construction and specialist contractor industry to succeed with purchasing and supply strategies? . . . 89
6.2 Future Research . . . 90
6.3 Theoretical Contributions . . . 90

References 92

Appendix A Data Collection Protocol

Appendix B Number of publications of SME purchasing

List of Figures

1.1 An illustration of number of publications per year with phrases including SME and purchasing or similar, see Appendix B for data and search options. 2

2.1 The Research Onion (Mark et al., 2009) 10
2.2 The Multiple-Case Study Procedure adopted from Yin (2017) 15

3.1 The SME Purchasing Cloud inspired by Bildsten (2013) 23
3.2 PESTEL framework 27
3.3 SME Strategic Purchasing Framework inspired by Ellegaard (2006), Ozmen et al. (2013), van Weele (2014, p. 158) 33
3.4 The Outsourcing Matrix (van Weele, 2014, p. 179) 37
3.5 Kraljic's Purchasing Portfolio (van Weele, 2014) 42
3.6 Supplier Relationship (Bensaou, 1999) 44

4.1 Company turnover (Business Retreiver, 2018) 50
4.2 Number of employees (Business Retreiver, 2018) 50

5.1 The Outsourcing Matrix (van Weele, 2014, p. 179) 79

6.1 The SME Purchasing Cloud and the SME Strategic Purchasing Framework 86

Acknowledgments

This Master Thesis was written during the spring of 2018 and is the final part of our Master of Science in Mechanical Engineering. The thesis was written under the supervision of the Department of Industrial management & Logistics at the Faculty of Engineering at Lund University. We would like to take the opportunity to thank our supervisor Louise Bildsten at Lund University for the frequent visits, all the valuable feedback and her enthusiasm towards the thesis. Furthermore, we would like to thank the company Save By Solar and especially our company specific supervisor, Carl Mattsson for his support. Finally, we would also like to thank the examined case companies and their representatives for all their time and effort, Lars-Göran Torpheimer at Torpheimergruppen AB, Jörgen Standborg at Team Skåne Bygg AB, Patrik Persson at Rörläggaren AB and Jonas Edstrand at Knut Edstrand bygg AB.

Lund, June 2018
Charlie Sundblad and Christoffer Nilsson

1

Introduction

This chapter describes the background of the study with a short description of the company Save by Solar followed by the problem formulation, the purpose of the study, the research question, goals, focus and delimitations, some important definitions and finally a short presentation of the report structure.

1.1 Background

Most companies spend more than half of their sales turnover on purchasing and therefore purchasing has been identified to have a large impact on both cost and profit margin (van Weele, 2014, p. 3). Due to the high purchasing spend, supplier relationships are imperative to short term financial goals as well as future competitiveness (van Weele, 2014, p. 3). Most current literature focus on larger companies and the amount of research applicable to small and medium sized enterprises (SMEs) is limited. Due to its smaller size, SMEs are especially dependent upon external resources (Ellegaard, 2006). Researchers such as Carr and Pearson (1999) argue that strategic purchasing might be unsuitable for SMEs due to more restricted financial flexibility, cash flow and order sizes. On the other hand, Carr and Pearson (1999) also emphasizes that SMEs require a dynamic change in type of suppliers and their capabilities which highlights the need of a strategic purchasing plan. Within the EU non-financial business sector, SMEs account for 99,8 % of the enterprises and 2/3 of the total employment. SMEs are the economic backbone as well as the source of much of the business innovation within Europe and they account for the majority of the value as well as employment growth (European-Commission, 2017). In light of this gap between theory and economic importance is where this thesis aims to add value.

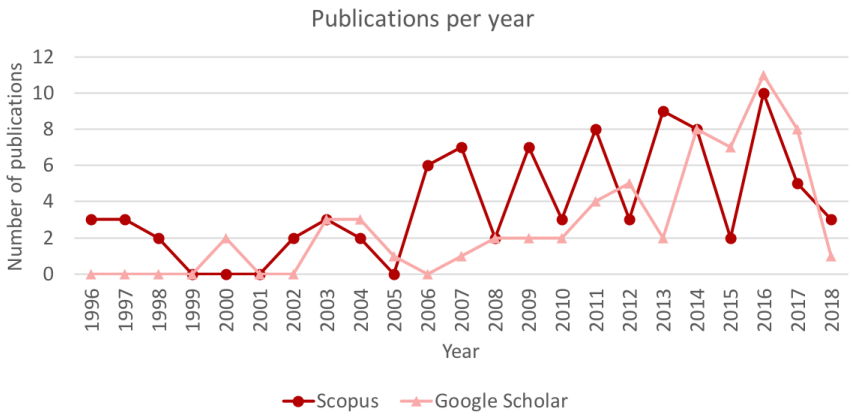

Figure 1.1: An illustration of number of publications per year with phrases including SME and purchasing or similar, see Appendix B for data and search options.

As illustrated in Figure 1.1 there is not much literature being published in the field of SME purchasing. However, it seems possible that the interest in the field is expanding partially in recent years.

1.2 The Company Save by Solar

Save by Solar (SBS) was founded in 2014 by the praised entrepreneurs (Alliance, 2017) Linus Werner and Hugo Larsson, two previous students from Uppsala University. Werner has a master's degree in engineering and a bachelor's degree in business and Larsson has been studying economics with a focus on sustainable development. Werner came up with the business idea when he was writing his master thesis at the company GodEl where he found out that solar power is especially useful for some commercial buildings and contacted Larsson, a former colleague with experience in marketing. Their common interest of renewable energy brought them together and they decided to create the best opportunities for companies to produce their own solar power. A couple of months later, SBS was founded (SavebySolar, 2018a).

As of today, SBS works towards *"pushing for the transition to a renewable world by changing corporate ways of using energy"* (SavebySolar, 2018a). The goal is to create the best conditions for companies in order for them to be able to control their own power supply by producing their own electricity from solar cell systems and in some cases store them in different types of energy storing systems.

The business idea is to make it as simple as possible for the clients so that they can focus on their core activities. That is why SBS offer their clients a simple overall solution where they do all preparatory administrative work towards authorities and other actors, project and install the solar plant, monitor and operates the plant when it is up and running (SavebySolar, 2018b). The pros for clients are lowered power costs together with making a positive impact on the environment by producing their own green electricity. SBS takes full responsibility for the solar cell plant and the production of electricity and can therefore guarantee a yearly production towards the client. If the plant is not producing as much electricity as promised, SBS will pay the difference of missing kilowatt hours which makes them different from their competitors (SavebySolar, 2018b).

The company is experiencing large growth and has apart from the head office in Uppsala opened an office in Stockholm in 2017 as well as in Lund 2018. The company is currently employing 41 people with a turnover of 20 MSEK compared to the previous year of ten employees and a turnover of 8 MSEK. The ambitions are to become one of the biggest actors on the Swedish market for solar system installations. The energy market is heading towards a great revolution and the interest for solar cells from companies has grown tremendously as the price of electricity is increasing and the need for a green company profile is growing. SBS is considered a specialist contractor, working towards the construction industry and is the reason why the construction and specialist contractor industry

has been chosen as base of investigation in this thesis.

SBS has a large percent of their turnover in purchased material and are experiencing a large growth as a company. Currently SBS is facing unreliable deliveries from their suppliers which incurs large costs across the organisation. Being a relatively small but rapidly growing specialist constructor on the solar panel market makes them face many opportunities as well as difficulties. Therefore, SBS want to investigate theories and practices for their strategic supply and purchasing and how this should change during growth.

1.3 Construction and Specialist Contractors

The Construction and specialist contractor industry is characterized as lagging behind other industries when it comes to adopting new IT solutions (Love and Irani, 2004) and also has a reputation of being slow-adapters to change at a specialist contractor level (Mason, 2007).

Specialist contractors refers to companies working with installation towards the construction industry. The construction industry incorporates companies that work towards building and installing components in properties where much of it is project based with several specialist contractors. Specialist contractors are though considered as vulnerable in the competitive environment since main contractors make the biggest cost savings within sub-contracting (Mason, 2007).

1.4 Problem Formulation

SBS has been growing fast during the last year and has come to the point where strategies and organizational actions has become more important for them to grow healthy. Their business is heavily reliant on suppliers delivering installation material on time for each project of installed solar cell systems. If something happens with the supplier or the supplier's supplier and they cannot deliver the material on time, SBS will face problems affecting their processes and in the end their relationship with their clients. Furthermore, it is of great importance for SBS that there are clear and accurate strategies to limit those problems. Current research on supply and purchasing strategies are focused on large companies and research on how SMEs should act in the same area is very limited, making it hard for them to grow healthy when competition is high. SBS is therefore interested in how other companies in the construction and specialist contractor industry work with supply and purchasing strategies.

1.5 Purpose, Research Question and Goals

1.5.1 Purpose

The purpose of the thesis is to create a framework for how SMEs in the construction and specialist contractor industry should work with purchasing and supply strategies.

1.5.2 Research Question

Overall research question:

- How should SMEs in the construction and specialist contractor industry work with purchasing and supply strategies?

To be able to answer the overall research question, we have broken it down into two sub questions:

- SUB RQ 1: Which aspects from current research of purchasing strategies developed for large companies are relevant for SMEs in the construction and specialist contractor industry?
- SUB RQ 2: What have been the critical success factors for SMEs in the construction and specialist contractor industry to succeed with purchasing and supply strategies?

1.5.3 Goals

The goals are to:

- ...create a framework for how SMEs in the construction and specialist contractor industry should work with purchasing and supply strategies.
- ...identify key success factors for purchasing and supply strategies for SMEs in the construction and specialist contractor industry.

1.6 Focus and Delimitations

Since this study is a master thesis at Lund University, time constraints of 20 weeks forced us to make some delimitations and sharpen our focus of the study. In order for SBS to get as much out of this study as possible, focus and delimitations are mostly decided in regard to them and their preferences

being the identification of which aspects that are important in SME purchasing and what other companies in the same industries have determined as critical success factors and how they have gone about with their purchasing strategies.

In order to make the model of supply and purchasing strategies as accurate as possible for SBS, we have decided to only focus on companies working i the construction and specialist contractor industry. Within that industry, we are focusing on companies with similar products as SBS in terms of how they are delivered and on what preferences. Mainly just-in-time products that need to be shipped directly to a construction site without the possibility of long-term storing at site.

The study is delimited geographically to only include cases of companies with offices in Sweden since the time constraint prevents us from going abroad.

1.7 Definitions

Definitions of common words are presented to keep the reader on track and understand what we are referring to throughout the thesis.

Enterprise

An enterprise is considered to be any entity engaged in an economic activity, irrespective of its legal form. This includes, in particular, self-employed persons and family businesses engaged in craft or other activities, and partnerships or associations regularly engaged in an economic activity (The Commission of the European Communities, 2003).

SME

The category of micro, small and medium-sized enterprises (SMEs) is made up of enterprises which employ fewer than 250 persons and which have an annual turnover not exceeding EUR 50 million, and/or an annual balance sheet total not exceeding EUR 43 million (The Commission of the European Communities, 2003).

Purchasing

The management of the company's external resources in such a way that the supply of all goods, services, capabilities and knowledge which are necessary for running, maintaining and managing

the company's primary and support activities is secured under the most favourable conditions (van Weele, 2014, p. 426).

Supply

Supply includes at least purchasing, materials management, incoming inspection and receiving. Supply is used when relating to buying based upon total cost of ownership in a manufacturing environment (van Weele, 2014, p. 429).

Strategy

A plan of action designed to achieve a long-term or overall aim (Oxford Dictionaries, 2018)

Dynamic Capabilities

The firm's processes that use resources - specially the processes to integrate, reconfigure, gain and release resources - to match and even create market change. Dynamic capabilities thus are the organizational and strategic routines by which firms achieve new resource configurations as market emerge, collide, split, evolve, and die (Eisenhardt and Martin, 2000, p. 1107).

Total Cost of Ownership

Total cost of ownership (TCO) is an estimate of all indirect and direct costs involved in acquiring and operating a product or service over its lifetime (Oxford Dictionaries, 2018).

1.8 Report Structure

The thesis is built upon six chapters:

- Chapter 1 – Introduction
- Chapter 2 – Methodology
- Chapter 3 – Theory
- Chapter 4 – Empirical Study
- Chapter 5 – Analysis

- Chapter 6 – Conclusion

Chapter 2 – Methodology. The chapter starts off with a description of how the chapter and the methodology in general is structured for the thesis. Secondly, we move into the first step of the procedure by looking at research philosophy and research approach. After that, the research strategy is presented as an overall description and explained in more detail under relevant subsections. Further, research choice and time horizons are presented followed by the techniques and procedures of the thesis. The techniques and procedures are explained in more detail since they cover a significant part of the thesis. Finally, credibility of the thesis is discussed.

Chapter 3 – Theory. The theory chapter begins with a short introduction, presenting our main model, the *SME Purchasing Cloud*, which also works as structure for the chapter but before going into detail of the model, size effects and SME characteristics are presented followed by an explanation of construction and specialist contractors. After, environment, dynamic capabilities and resources are discussed as parts of the *SME Purchasing Cloud*. Further on, the fourth element; purchasing strategy is presented together with our model of the area, the *SME Strategic Purchasing Framework*. The following sub chapters are structured after each step of the model and takes into account relevant theories and models for each part.

Chapter 4 – Empirical Study. The empirical study shows the findings from the four case companies. The chapter starts off with a visualization of the four companies' growth over time. Furthermore, each case is presented in individual case reports, structured after the *SME Purchasing Cloud*.

Chapter 5 – Analysis. The analysis is structured in the same way as the theory chapter and contains the analysis of the models and relevant theories conducted from theory together with the results from the empirical findings of the case companies.

Chapter 6 – Conclusion. The conclusion answers the main research question with the two models conducted. Secondly, the two sub research questions are answered as an explanation of how the main research question could be answered. Finally, future research and theoretical contributions are discussed.

2

Methodology

The methodology of the study is described in detail in this chapter, describing how the research has been conducted.

Within all scientific research it is important to take into account what philosophies, approaches, strategies, choices, time horizons as well as techniques and procedure that are used. These decisions have implications on the collection of data, analysis and the result (Mark et al., 2009). Figure 2.1 presents *"The Research Onion"* that illustrates the layers of scientific research that can be used for structuring a report and acts as the base for the study and the structure of the methodology chapter. The circled elements of each layer are those being used in this thesis.

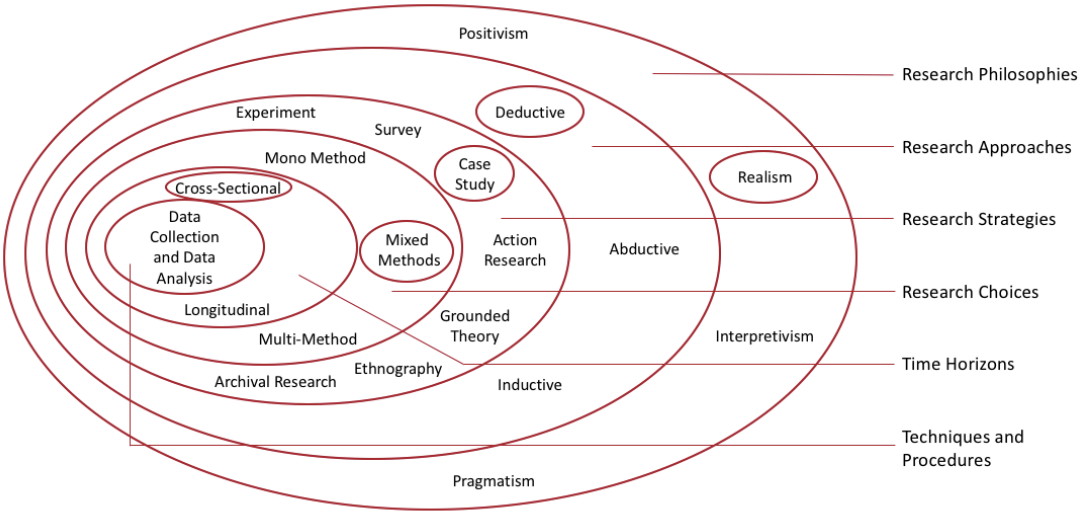

Figure 2.1: The Research Onion (Mark et al., 2009)

2.1 Research Philosophy

The outer layer of the research onion is that of research philosophy. It relates to what the concept of knowledge is and how it is gathered. Research philosophy is important in order to understand how one builds and justifies new knowledge. There are three major schools of research philosophy; positivism, interpretivism and realism. Positivism is the typical stance of natural science where phenomenons can be objectively measured and derived to universal-like laws. Results gathered using the positivistic philosophy are very structured and should be able to be recreated to confirm or discard the findings. The interpretative philosophy states that reality can not be measured objectively since it is taken from a social context created by individuals (Mark et al., 2009).

Realism can be thought of as a mix of positivism and interpretivism. According to Mark et al. (2009): *"...realism states that reality exists independent of the mind and that what a researcher's senses show her or him is the truth, although the researcher is influenced by world views and their own experiences."* Realism can be further broken down into direct- and critical realism. Direct realism being that the observed is an accurate representation of reality while the critical realist think it is subjectified by the individual mind. There are advocates and users of both positivism, interpretivism and realism in supply chain management research (Sachan and Datta, 2005).

Business and management can be seen as a highly social context and according to the critical realist it is only possible to understand what is transpiring in reality by firstly understanding the social structure where it is taking place (Mark et al., 2009). We find it hard to see purchasing- and supplier strategy as solely objective or subjective and therefore choose to adopt a critical realist philosophy.

2.2 Approach

The second layer of the onion is the approach. There are primarily three possible approaches in scientific research; deductive, inductive or abductive approach. The deductive approach is based on the creation of theory that is then tested in reality. The deductive approach is characterized by rigorous methodology, hypotheses and predictions derived from laws and finally the result can lead to generalisation. An inductive approach is quite the opposite where data is generated first, and theory building comes after. An abductive approach can be regarded as a mix where the researcher jumps back and forth between deductive and inductive approaches (Kovács and Spens, 2005).

For this study we have chosen to take on a deductive approach. We look for published theories in a literature review and develop a framework. The obtained theoretical model is then applied and investigated by empirical data collected from multiple case studies (see 2.3 Research Strategy) (Kovács and Spens, 2005).

2.3 Research Strategy

The third layer of the Research onion is that of strategy. There are several possible strategies capable of answering the same research question. One can even use multiple strategies (Mark et al., 2009) but for this thesis the case study method is chosen and discussed below. Yin (2017) and Ellram (1996) claims that the case-study method is one of the least understood and most criticized research methods but that there is an increasing interest in it for business research. Ellram's study showing that

the case-study method can be used for research in logistics and purchasing is heavily referred to Yin's framework, originally from 1994. She argues that there are several misconceptions considering the case-study method that are not really deserved, which made the method quite unpopular earlier. Some of the misconceptions are that case studies are only suitable as a tool for the exploration part of the investigation, that case studies do not use a rigorous design methodology, and that the findings based on the case study method are not generalizable (Ellram, 1996).

Case studies are great tools for answering research questions as "How" and "Why", when the researcher has little control over the events and when the focus is on a contemporary phenomenon within some real-life context (Ellram, 1996, Yin, 2017). Yin (2017) argues that the case study method gives the researcher the possibility to keep the holistic and meaningful characteristics from real-life events as e.g. the matureness of industries. Furthermore, Ellram (1996) argues that the most common approaches for the case study method are inductive or abductive approaches where the researcher search to build theory that can be tested with further case studies, surveys or other relevant methods. With that being said, the above does not mean that a researcher necessarily has to stick to one strategy but can use multiple strategies as e.g. using a survey within a case study.

Another very important component of research design according to Yin (2017) is the "case" or also called the "unit of analysis". To identify this component one should look at two steps: "Defining the case" and "Bounding the case". The case should describe what is being studied and is usually an individual person in form of e.g. clinical patients, exemplary students, leaders, etc., just to mention a few. While doing multiple-case studies, a researcher has many "cases" or as described here; individual persons to collect information or data from. The "case" can also be an event or entity as small groups for example. These can take form as families, communities, schools, but also disaster recovery efforts and social movements. These examples are harder to study than individual persons since it is usually hard to define the start and end of the "case".

The unit of analysis for this study is the development process of purchasing and supply strategies for SMEs.

2.3.1 Quantitative vs. Qualitative Method and Case Studies

Quantitative methods have earlier been the most common in research of logistics and purchasing but qualitative methods has lately become more popular (Ellram, 1996). Quantitative methods are more suitable for research questions beginning with "How much..." or "How many..." which usually gives better statistical predictability than qualitative methods and can handle big data from pre-

vious known events, activities and patterns. On the other hand, Ellram (1996) argues that qualitative case studies can create explanations and predictions on a smaller scale where single-case or multiple-case studies can be used to explain a phenomenon or predict results from previous events in similar cases, which is what we will do in this study with a multiple-case study. Da Mota Pedrosa et al. (2012) also argues for case-study based research and says that it is a useful method when researching the broad field of logistics and supply chain management. Eisenhardt and Graebner (2007) says that case studies are one of the best methods to create mainstream deductive research from qualitative evidence. In this study, for above reasons, we have chosen to follow a qualitative method with case studies.

2.3.2 Single vs. Multiple-Case Studies

When doing a case study method, one must decide whether aiming to do a single-case study or a multiple-case study. The single-case study design is preferable if the case is a critical test of existing theory, a common case, an extreme or unusual circumstance, or has a revelatory or longitudinal purpose (Yin, 2017). In this study, we have chosen to use a multiple-case study design since the evidence provided from multiple-case studies often are more compelling and more robust than single-case studies (Yin, 2017). Single-case studies are also hard to do since they need heavy work behind the choice of case to answer the research question (Yin, 2017). Important to understand is that a single case does not represent the same thing as a single observation, single-case and multiple-case studies have different objectives which makes them different. Multiple-case studies lets the researcher develop an existing theoretical framework but should be used to acquire conclusions where one expects similar results as existing theory or contradictory results with explainable reasons (Ellram, 1996).

2.3.3 Generalizability and Replicability

When deciding to do a multiple-case study, one must identify how many cases are needed to make the results generalizable and replicable. Yin (2017) and Ellram (1996) argues that six to ten cases would provide compelling support, if all chosen cases turn out as predicted, for the initial set of propositions.

Results from research aims to be generalizable but case studies have been criticized for not being just that (Ellram, 1996). Da Mota Pedrosa et al. (2012) explains that statistical generalization of research findings is the standard ideal in scientific research but it is not of main concern for case study-

based research. Yin (2017, p. 21-22) argues that: *"...case studies, like experiments, are generalizable to theoretical propositions and not to populations or universes. In this sense, neither the "case" nor the case study, like the experiment, represents "samples." Rather, in doing case study research, your goal will be to expand and generalize theories (analytical generalizations) and not to extrapolate probabilities (statistical generalization)."* Therefore, we aim to expand and generalize theories by making the study as analytically generalized as possible within our delimitations.

The use of a multiple-case study should follow a replication logic (Eisenhardt and Graebner, 2007, Yin, 2017) and is the reason why a replication logic is used in this study. The design of the replication logic is simple; all cases must be picked carefully in order to either predict similar results (literal replication) or predict contrasting results for anticipatable reasons (theoretical replication) (Yin, 2017). In order to know how many cases would be sufficient for a multiple-case study, one must look at the number of literal and theoretical case replications that is needed in the study (Yin, 2017). Since this study contains more exquisite theory and demands a higher level of certainty, we aimed to do four literal replications, but is reserved to more if the result turns out to differ from what is expected from the beginning.

2.4 Research Choice

The fourth layer of the research onion covers the choice of methods. For this thesis a mixed method has been chosen. A literature review along with primary data gathering from multiple case studies. Using a mixed method can enforce validity as it enables the use of triangulation (Mark et al., 2009). More methods could possibly be used but seeing to the time constraint of the thesis we have chosen to only look at two.

2.5 Time Horizons

The fifth layer of the research onion covers the time horizons. It reflects whether the research question will address a snapshot or a time period. The cross-sectional in the research onion being a snapshot and the longitudinal being that of a time period (Mark et al., 2009).

This research will be cross-sectional as the companies will be interviewed during a small time window. However, as the research question aims to capture success over time the questions in the case study could be thought of as longitudinal.

2.6 Techniques and Procedures

The final layer of the Research Onion is that of techniques and procedures. The choices and conclusions in previous layers of the onion has lead us to argue for using *Multiple-Case Study Procedure* by Yin (2017) for structuring the process of the thesis. The following sub-chapter is therefore also structured in line with the stages in the procedure. The procedure is illustrated in Figure 2.2 and follows a couple of simple steps, each step will be presented in more detail under each subsection. It starts by collecting and developing relevant theory and continues with the selection of cases and how they should be studied to answer the research question by designing the data collection protocol. Furthermore, the cases are conducted, analysed and presented in individual case reports to make cross-case analysing easier for drawing cross-case conclusions. When conclusions have been made, modification of theory starts followed by the development of policy implications and concluded in a cross-case report (Yin, 2017). An important part of the procedure is the dotted line which symbolize the feedback loop in the event of one case does not fall out in line with the research question. If that happens, one should redesign either the choice of cases or the data collection protocol. In multiple-case studies, the theoretical framework lies the base for generalization for new cases but if that is not possible and the outcomes does not turn out as expected, one must modify current theory (Yin, 2017). This section will go into detail on how the literature review, interviews and qualitative data were conducted.

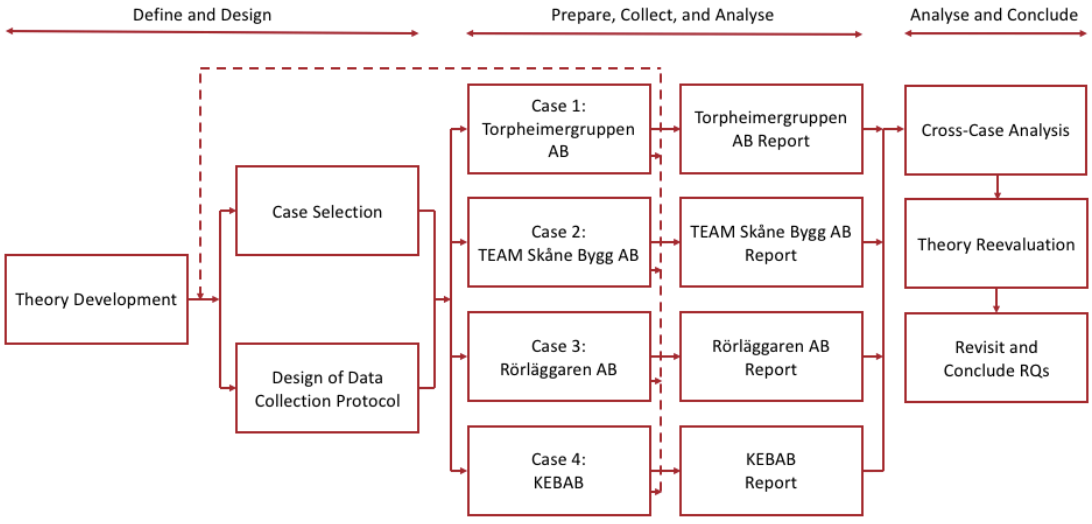

Figure 2.2: The Multiple-Case Study Procedure adopted from Yin (2017)

2.6.1 Theory Development

Literature Review

A literature review is the very back bone of any academic research and it is imperative that it is done systematically and rigorously. The literature review is the tool we use to do the first segment of the Multiple-Case Study Procedure; "Theory Development". Rowley and Slack (2004) argues that a literature review helps to:

- ...identify and support the research question
- ...identify relevant literature and to contextualize the research question
- ...propose a suiting research design
- ...analysing the problem to write the master thesis

In order to evaluate identified sources, we have followed Rowley and Slack (2004) and examined the authors' credibility and validity within the field by checking for articles with a high amount of citations, if they are written by respected publishers and of course always looked for relevant and updated editions of literature.

As for method of data gathering we have used briefsearch and citation pearl growing. Briefsearch is well described by its name and is used to quickly get a hint of what relevant information is available and where to look. Citation pearl growing also known as the snowball method is then used to do a more thorough search. The steps of the pearl growing method are as follows (Rowley and Slack, 2004):

1. Identify a preliminary source
2. Backwards rolling by searching through the referenced sources in the preliminary source
3. Forwards rolling by searching for sources that use the preliminary source as one of their sources
4. Upon reaching a new source its content is analysed for inclusion or rejection
5. After that the steps 2-4 are iterated to identify more sources until no new relevant sources can be found

6. Finally the result is complied

We have started with previous course literature and online databases such as ISI Web of science, Ebsco host, Google scholar and Lub Search. Using the keywords SME, purchasing, supply, strategy and synonyms we found our preliminary sources. We found many articles relating to purchasing strategies for large enterprises but also some relating to SMEs. The most important findings of articles and literature for this thesis have been van Weele (2014), Ellegaard (2006), Ozmen et al. (2013), Paik (2011), Pressey et al. (2009), Quayle (2000, 2002) to mention a few.

2.6.2 Case Selection

The cases has been chosen carefully to fulfil three criteria:

- Having between 50 and 250 employees
- Have an employee that has worked within purchasing for a long time
- Must be a specialist contractor or contractor in the construction industry

The motivation for the choice of each case is presented in theory in each individual case report. The case companies are:

- Torpheimergruppen AB
- TEAM Skåne Bygg AB
- Rörläggaren AB
- Knut Edstrand Byggnads AB

2.6.3 Design of Data Collection Protocol

When doing a multiple-case study, it is essential having a case study protocol (Yin, 2017). A data collection protocol differs from a survey questionnaire since it contains the procedures and rules to follow when using it. According to Yin (2017) the data collection protocol should contain four sections; an overview of the study with objectives, issues, relevant readings, etc. The procedures of data collection, the protocol questions and a tentative outline for the report. The data collection protocol used in this study is found in Appendix A.

2.6.4 Data Collection

The data collection has been implemented through four two-hour interviews, one with each case company.

Interviews

Yin (2017) says that interviews are of high importance for case study research as a source of information and that they are commonly found in the same. There are three different types of interviews that are common while conducting data in case study research according to Yin (2017): Prolonged case study interviews, shorter case study interviews and survey interviews in a case study. For this study, the approach of shorter case study interviews is used. Shorter case study interviews are usually around one hour long and differently from the prolonged case study interviews approach, they are more focused. Notable though is that shorter case study interviews are still open-ended and should have a conversational approach towards the interviewee even though it is more tightened to the case study protocol. The approach is a good choice if the interviewer seeks to verify findings from previous literature and therefore ask quite precise questions (Yin, 2017).

In this study, we have focused on following a semi-structured interview method in order to align with the shorter case study interview approach. A semi-structured interview is built on questions that are mixed in the way the interviewee is able to answer. The questionnaire should be well-structured from the beginning but is made so that the interviewee and interviewer are free to take turns in the interview if that is considered necessary. Questions should always follow the same structure in every interview with the exact same words in order to not affect the answer of the interviewee (Höst et al., 2006).

2.6.5 Analysing qualitative data

Primary data is gathered from recorded and manually summarized interviews after each event in order to capture the unique context of each conversation. The process of analysing data is iterative and occurs simultaneously as the gathering process (Ellram, 1996). Patterns in the generated data is analysed as this is intuitive and also productive when analysing large amounts of qualitative data (Miles et al., 2014). Clustering of data has also been done to categorize findings as this can be applied to many levels of qualitative data. Furthermore, Miles et al. (2014) recommend noting the relationship between variables by illustrations.

According to Miles et al. (2014, p. 294) one must be mindful of analytical biases when doing qualitative research as biases may weaken or invalidate research findings. Some of the most common biases are the holistic fallacy, elite bias, personal bias and going native(Miles et al., 2014, p. 294).

- The holistic fallacy or also known as sloppy research is when a researcher is seeing patterns and drawing conclusion based on unsaturated data.
- Elite bias occurs when data collected by articulate and high status subjects are given a stronger representation in the conclusion.
- Personal bias occurs when the researcher is knowingly or unknowingly portraying and analysing data with personal opinions or prejudice. It could be that of personal agenda or the researchers' previous experience that drives the conclusion more in line with their own view.
- Going native means loosing the objectivity as the researcher and only seeing things in the view of the object or their surrounding (Miles et al., 2014, p. 294).

Since biases can discredit any research it is important to keep them in mind and to stay objective. In order to avoid biases it is important that interviews are recorded and summarized correctly and that the researcher often goes back to see what was actual being said.

For this thesis, we have recorded all interviews and written down notes both under and after the interviews. By structuring a data collection protocol with an interview guide for semi-structured interviews, we had a basis for making the analysis easier. After each interview each case was presented in a case report as found under *Chapter 4 Empirical Study*. Together with the theory found and concluded in the models and frameworks, the findings from the interviews were analysed cross-case to be able to find similarities and differences between the cases and to validate the relevance of the models. The analysis is the critical part of a qualitative report and should be done properly.

2.7 Credibility

To increase credibility and validity, data triangulation is performed by doing both interviews and reviewing existing literature. In order to check the quality of the chosen research design, four tests have been developed and frequently used in empirical social research. These four tests are also relevant for case study research according to Yin (2017) and he presents the tests with tactics on how to do them which are described in further detail together with how they are applied on this study under the sections *Construct Validity, Internal Validity, External Validity and Reliability*.

2.7.1 Construct Validity

Construct Validity is about determining the right operational measures for the concepts being studied (Ellram, 1996, Yin, 2017). To do that, we focused on having multiple sources of evidence by using four literal replications in the study. Two of the cases are construction companies while two are specialist contractors, making the construct validity high since they follow the same pattern. In this thesis, the model that is being tested through empirical investigation is straight forward which makes it easy to test and measure the different elements of it. The choice of doing interviews has been considered being the best way to test relevant theory in order to come up with the final model. Furthermore, a pilot interview of the data collection protocol was conducted with Carl Mattsson at Save by Solar to validate that the questions were accurate and to construct validity.

2.7.2 Internal Validity

Internal Validity is about seeking to establish a causal relationship, whereby certain conditions are believed to lead to other conditions, as distinguished from spurious relationships (Yin, 2017). To fulfil these criteria, we have reduced the amount of possible external factors that might affect our final result by aiming to interview objects that do not overlap with each other or are biased. The data collection protocol is designed in such a way so that the questions are clear and straight forward to minimize the risk of misreading answers. To further increase the internal validity, we have chosen to focus on pattern matching in the data analysis phase.

2.7.3 External Validity

External Validity is about showing whether and how a case study's findings can be generalized - how well the results reflects the phenomenon studied (Ellram, 1996, Yin, 2017). We chose to make our research design in order to increase the external validity and analytical generalization by using replication logic in our multiple-case study. The choice of using a research question starting with a "How" also leads us in a certain direction of research design choices which helps us increase the external validity. The conclusions are considered to be generalizable for SMEs in the construction or specialist contractor industry.

2.7.4 Reliability

Reliability is about showing that the operations of a study, for example the data collection procedures can be repeated with the same results (Ellram, 1996, Yin, 2017). To fulfil the quality criteria of reliability, we have designed a well structured data collection protocol and have maintained a chain of evidence throughout the multiple-case study. The interview guide is structured with clear straight forward questions without too much room for alternative answers. The findings in the different cases are very similar while they vary in highlighting key success factors.

3

Theory

The theory chapter starts of by presenting our own model for purchasing in SMEs: *The SME Purchasing Cloud*. Further on, each part of the model is presented in depth, starting with environment, continuing with dynamic capabilities and resources, and finishing off with purchasing strategy.

3.1 Introduction

There is limited research in the field of SME purchasing compared to larger enterprises. Furthermore, it is difficult to obtain objective data on SMEs since most are privately owned, with limited financial data being available to the public (Paik, 2011). In order to express what current theory say about SMEs and their purchasing behaviour we have conducted a model: *The SME Purchasing Cloud*, presented in Figure 3.1. The model is heavily influenced by a framework for strategy in industrialized house-building by Bildsten (2013) which includes four elements: Environment, resources, dynamic capabilities and restructuring strategy, focusing more on overall corporate strategy than purchasing strategy. Each part of *The SME Purchasing Cloud* is dependent on each other and presented separately in depth within the coming theory chapter. The elements are time dependent variables where we look into suggestions or ideas on how SMEs should work with purchasing strategies. These ideas are based on current theory and the purchasing strategy element is suggested to always look back to an SME's resources and dynamic capabilities for improved purchasing and overall company performance. The three elements are always dependent on the ever changing internal and external environment, symbolised as a cloud surrounding the three connecting elements.

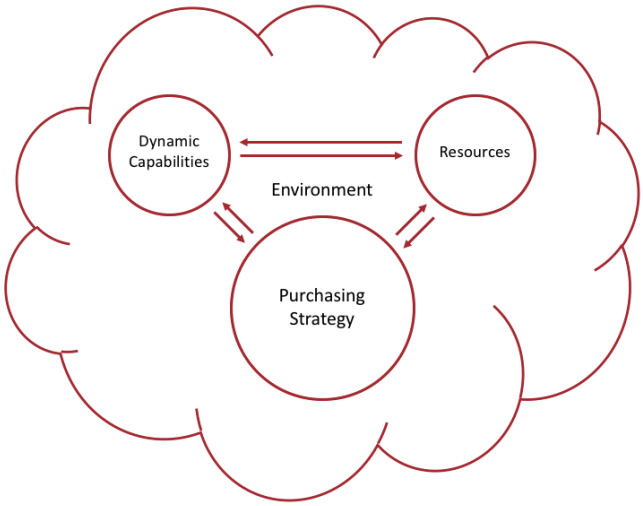

Figure 3.1: The SME Purchasing Cloud inspired by Bildsten (2013)

3.2 Size Effects and SME Characteristics

Before diving in to *The SME Purchasing Cloud* some SME characteristics is presented. The category SME incorporate a wide variety of enterprises. The micro, small and medium enterprises containing up to 10, 50 and 250 employees respectively (The Commission of the European Communities, 2003). This categorization poses a difficulty as there is a big difference between a micro-enterprise employing five and a medium sized enterprise employing 200 when it comes to organizational structure, available resources and possible degree of specialization among employees. Although the broad categorization of SMEs, there are some characteristics related to purchasing that are shared among them:

- They value communication, cooperation and trust more than larger firms (Ozmen et al., 2013, Paik, 2011)
- They have more limited resources (Pressey et al., 2009)
- Strong influence of owner, manager or management (Ozmen et al., 2013)
- Financially vulnerable and dependent on a few key clients (Björnfot and Torjussen, 2012)
- Closer relationships and shared values (Ozmen et al., 2013)
- Tend to keep not satisfactory suppliers longer due to their limited resources (Paik, 2011)
- SMEs can conduct less influence on external business environment (Paik, 2011).
- SMEs have less specialized knowledge in procurement and information systems (Paik, 2011)
- Purchasing is more of short term orientation and ”firefighting” in SMEs compared to large enterprises (Paik, 2011)

Generally, SMEs also lack the ability of economy of scale compared to larger enterprises which is a disadvantage in negotiation with suppliers. Although current supplier relationships are inadequate, SMEs often endure due to their lack of resources to monitor and enforce contracts (Paik, 2011). However, Carr and Pearson (1999) concludes that strategic purchasing had a significant positive impact on supplier evaluation systems for SMEs.

Paik (2011) argues that there is a significant difference between how small enterprises (SE) and medium sized enterprises (ME) manage their purchasing practise. Within an SE, purchasing usually falls on the individual as compared to an ME where purchasing is often done more centralized,

with assigned responsibilities and purchasing working as a separate department. This means that as the company increases in size so does the idea of specialization (Paik, 2011). Paik (2011) noted that purchasing respondents of both SE and ME purchasing focused on strengthening the company's competitive advantages as opposed to only cutting cost. Paik (2011) also noted that purchasing development for SMEs lead to an increase in purchasing performance, which could further strengthen the importance for SMEs of working strategically with purchasing. For SEs, it is especially beneficial to implement total cost of ownership (TCO) techniques and improve purchasing skills. As for MEs however, the research emphasized the need to have more cross functional skills and to work even more on their supplier relationships as key elements (Paik, 2011).

3.3 Environment

The first element of the *SME Purchasing Cloud* (Figure 3.1) is the *environment*. It is commonly known that environmental changes will affect companies acting in a market (Haveman, 1992, Luffman, 1996, Smith and Grimm, 1987). SMEs have little influence on changes in the external environment due to their size but have an advantage towards larger companies in being fast and responsive towards these type of changes (Paik, 2011). Fast and decisive actions to the ever changing environment can lead to potential competitive advantage over other companies, therefore qualifying the environment to be a natural and important part of the *SME Purchasing Cloud*.

Walsh (2005) argues that when a company is facing a change connected to the environment it inhabits in, the company must define how the processes of change will impact the company's strategic choices, the related resource deployment and the nature of the competitive advantage within that new environment. Walsh (2005, p. 113) specifies three areas that needs to be addressed by a company:

- What the key market variables that emerge as a result of environmental change in that market are
- What the effect of these market variables on a firm's strategies is
- What changes firms will have to make to their resource and competency base in order to create new strategies

New opportunities developed by environmental change will force companies to create or rephrase corporate strategies that most probably will need certain alterations within the organization. These are made in order to satisfy the critical success factors that are implied to reach competitive advantage (Walsh, 2005).

The PESTEL framework has become a very popular technique in order to investigate and understand the environment of a company's market (Luffman, 1996, Lynch, 1997). The PESTEL framework focus on the political, economic, social, technological, ecological and legal factors that affects the environment in which a company operates (Day, 1990, Gay, 2002, Sanchez and Heene, 1997). The environment is considered being the back bone of the *SME Purchasing Cloud* since it is key for companies to understand the surrounding macro-environment they work in and how it changes over time in order to adapt to it and not be left behind. The factors of the PESTEL framework shows that the environment is not only about economic factors but also non-market environmental factors (Johnson et al., 2009).

Political factors focus on political forces and the role of the state a company operates in. The factor is important in many ways, as influences from campaign groups, political movements or concerned media but also as a direct economic factor such as potential suppliers, clients or owners of businesses (Johnson et al., 2009).

Economical factors are related to macro-economic factors as business cycles, exchange rates and economic growth rates. Managers need to understand how these factors affect their company in e.g. export markets and vulnerability to imports (Johnson et al., 2009).

Social factors refers to cultural change and demographical change. These kind of changes as e.g. ageing populations in Western countries create threats and opportunities for public and private sectors and increase strategic challenges for a company (Johnson et al., 2009).

Technological factors create opportunities while challenging others with the quick development of applications and refers to things as e.g. Nano technology, the internet or the development of new high tech materials (Johnson et al., 2009).

Ecological factors refers to the so called "green" environmental problems we are facing as e.g. climate change, pollution and waste. This factor creates business opportunities for some but could also impose additional costs for others (Johnson et al., 2009).

Legal factors are regulatory and legislative constraints and changes. Examples are tax laws, employment regulations and copyright and patent laws (Johnson et al., 2009).

The PESTEL framework is illustrated in Figure 3.2, with recommendations of investigation areas for each factor.

P	E	S	T	E	L
- Government policy - Political stability - Corruption - Foreign trade policy - Tax policy - Labour law - Trade restrictions	- Economic growth - Exchange rates - Interest rates - Inflation rates - Disposable income - Unemployment rates	- Population growth rate - Age distribution - Career attitudes - Safety emphasis - Health consciousness - Lifestyle attitudes - Cultural barriers	- Technology incentives - Level of innovation - Automation - R&D activity - Technological change - Technological awareness	- Weather - Climate - Environmental policies - Climate change - Pressure from NGO's	- Discrimination laws - Antitrust laws - Employment laws - Consumer protection laws - Copyright and patent laws - Health and safety laws

Figure 3.2: PESTEL framework

Digitalization

Digitalization, being a technological factor in the PESTEL framework, makes no exception when it comes to purchasing. It is of strategic importance to any company as it enables much efficiency and new business opportunities. Using information systems, routine products can be ordered automatically and the payment delivered without draining resources from the purchasing department (van Weele, 2014, p. 254). However, many SMEs work without extensive IT systems but can still use modern technology to reach out to more suppliers when requesting information and also monitor the changes in the environment Paik (2011).

A more digital supply chains has enabled new ways of contact and transformed the roles of intermediaries and agencies. Purchasers or consumers can more easily bypass the traditional supply route and purchase goods and services directly at the source (Mogre et al., 2017).

The construction industry is far behind that of other industries such as retail and manufacturing when it comes to information and communication technology (ICT) (Al Yahya et al., 2018). Placing many construction SMEs even further behind in ICT given their more limited resources.

3.4 Dynamic Capabilities

Teece (2007) argues that to create sustainable competitive advantage over time, a company requires more than just the ownership of knowledge assets. To succeed, one must own unique and difficult-to-replicate dynamic capabilities. Dynamic capabilities are also related to the innovativeness of a

company and the lack of dynamic capabilities will make it hard for a company to be innovative and will have an impact on the company's ability to learn (Lockett and Thompson, 2001). All companies must stay competitive and dynamic capabilities enables a company to gain competitive advantage, therefore it is a natural element of our framework: the *SME Purchasing Cloud*.

Dynamic capabilities can be described as the capacity to sense and shape opportunities and threats, seize opportunities, and maintain competitiveness by combining, protecting, enhancing, and reconfigure the business enterprise's tangible and intangible assets. These capabilities include those difficult-to-replicate capabilities that companies need in order to adapt to changes in the external environment of the industry but also internal as product development and business models (Teece, 2007).

Dynamic capabilities are especially relevant to business environments that are characterized in four ways: First, the environment should be open to international commerce and exposed completely to threats and opportunities that are associated with rapid technology change. Second, technical change in itself should be systemic in the way that multiple inventions must be combined to enable service and/or products that answers to client needs. Third, there should be well-developed global markets for the exchange of goods and services. Finally, the business environment should be characterized as an environment with poorly developed markets where technological and managerial know-how is being exchanged (Teece, 2007).

The construction industry can be characterized as systemic where multiple interventions can be combined. Furthermore, there is a global market of construction materials and workforce and technological and managerial know how is important to projects.

Teece (2007) argues that dynamic capabilities have without doubt been important in order to achieve competitive advantage and that those dynamic capabilities assist in achieving evolutionary fitness which describes to what extent the capability enables the firm to make a living. Teece (2007) also refers back to Eisenhardt and Martin (2000) who identified important elements of dynamic capabilities from existing literature. These are performance measurement systems, technology transfer and/or knowledge transfer routines, quality control routines, new product development routines, and cross-functional R&D teams. In order to sustain dynamic capabilities, top management skills are required in form of achieving semi-continuous asset orchestration and corporate renewal which includes the redesign of routines (Teece, 2007).

Teece (2007) has created a framework for the foundations of dynamic capabilities and business performance. The framework shows that a company is shaped by but does not have to be trapped by its past and includes some key capabilities for companies to maintain competitive advantage.

Those are sensing, seizing, and transformational/reconfiguring capabilities (Teece, 2007). The purpose of the framework is to capture key variables and relationships that need to be changed in order to create, protect, and leverage intangible assets to achieve non-imitable enterprise performance and not get stuck in the zero-profit trap (Teece, 2007).

Teece (2007) argues that the industries have changed and improvements such as quality improvements, controlling costs, lowering inventories, and adopting best practices will no longer be enough to keep competitive success in the long run, scale and scope advantages are also no longer enough. To gain success, Teece (2007) says that companies need entrepreneurial management with constant understanding and control of the evolutionary and entrepreneurial fitness of a company. These entrepreneurial managers are able to sense the future and so on also shape it by using knowledge assets, protected by intellectual property rights, and transforming organizational, institutional and regulatory structures. Teece (2007) argues that entrepreneurship is about understanding the opportunities and finding new and developed ways of putting things together. He says: *"Entrepreneurial management has little to do with analysing and optimizing. It is more about sensing and seizing — figuring out the next big opportunity and how to address it"* (Teece, 2007, p. 1326). The entrepreneurial management function in those dynamic capabilities is a hybrid of recognizing problems and trends, directing resources, and reshaping organizational systems and structures (Teece, 2007).

Eisenhardt and Martin (2000) mentions strategy as dynamic capabilities and more precisely strategic decision making where managers put their personal, functional, and business expertise in order to make decisions about the major strategic moves of the company. Eisenhardt and Martin (2000) also connects dynamic capabilities to resources as capabilities that focuses on reconfiguring resources in the company which includes replication and brokering used by managers. Like Teece (2007), Eisenhardt and Martin (2000) mentions capabilities as copying, transferring, and recombining resources and especially knowledge-based resources with the goal to make value-creating strategies. Eisenhardt and Martin (2000) argue that competitive advantage in a long-term perspective does not lie in the dynamic capabilities of the company but in the resource configurations.

3.5 Resources

The well cited work of Barney (1991) about sustained competitive advantage and the link to companies' resources build on assumptions that strategic resources are stable over time and heterogeneously distributed across firms. A company's resources are argued by Peteraf (1993) to be scarce with different levels of efficiency but Andrews (1971) argues that resources also are something that

can be thought of as strengths or weaknesses in a company. In this thesis, we use the definition of Barney (1991, p. 206) for "firm resources" to define resources as: *"Firm resources include all assets, capabilities, organizational processes, firm attributes, information, knowledge, etc. controlled by a firm that enable the firm to conceive of and implement strategies that improve its efficiency and effectiveness. In the language of traditional strategic analysis, firm resources are strengths that firms can use to conceive of and implement their strategies."* The resource-based view has been discussed by many but the modern view of it argues to originate from Edith Penrose's book from 1959: *"The Theory of the Growth of the Firm"* (Kor and Mahoney, 2004).

According to Ellegaard (2006), small companies are very often characterized as having limited resources which leads to lack of attention for strategic purchasing. Small company owners do not develop their skills in purchasing and procedures of that kind as a result of just performing operational acquisition of components. A consequence of having limited resources is that the vulnerability of the company increases. While the supply risk increase, limited resources causes the lack of focus on strategic purchasing which leads to increasing vulnerability further (Ellegaard, 2006). In order to break the bad cycle it is important to address and analyse a firms resources, therefore it is included in the model.

The firm resources can be divided into different categories to get a better grip of what firm resources mean and can be: physical capital resources, human capital resources and organizational capital resources (Barney, 1991). The physical capital resources refer to geographic location, the access to raw materials and overall, the physical technology used in the company. Human capital resources refer to relationships, intelligence, judgement, experience, training and the insights of individual workers and managers in a company. Organizational capital resources look to a company's formal reporting structure, their formal and informal coordinating, controlling and planning systems but also the relationships within the company between groups and outside between the company and the environment (Barney, 1991).

In order to create sustained competitive advantage, Barney (1991) argues that a company's resources must be characterized by four attributes, they must be:

1. Valuable, exploits opportunities and/or neutralizes threats in the environment
2. Rare, towards current and potential competition
3. Imperfectly imitable
4. Non-substitutable, substitutes that are valuable but not rare or imperfectly imitable can exist

3.5.1 Valuable Resources

Resources are considered being valuable when they improve efficiency and effectiveness through enabling a company to conceive of or implement strategies (Barney, 1991). To even be considered a resource, the company attributes must be valuable. Even though an attribute qualify through the other three characteristics above as being sources of competitive advantage, the attribute will not be considered a resource since they will not neutralize threats or exploit opportunities in a company's environment, which defines a valuable resource (Barney, 1991).

3.5.2 Rare Resources

To create competitive advantage, a company must implement a value-creating strategy that a large number of other firms simultaneously does not do. When a large number of companies possess the same resource in the same way, none of the companies will gain competitive advantage, therefore, a good resource should be rare (Barney, 1991). If a resource is completely rare it will at least create a competitive advantage but also have the potential of becoming a sustained competitive advantage. Even though a resource is not fully unique but maybe shared between a few companies, it might create a competitive advantage. One could argue that as long as the amount of companies possessing a specific resource are less than the amount of companies needed to create perfect competition dynamics in a market or industry, the resource has the ability to generate a competitive advantage (Barney, 1991).

3.5.3 Imperfectly Imitable Resources

Imperfectly imitable resources are resources that other companies do not possess and cannot obtain which means that valuable and rare organizational resources are only able to be sources of sustained competitive advantage if they have those qualities (Barney, 1991). Resources have the potential of being imperfectly imitable for one or a combination of three reasons (Barney, 1991, p. 212-213):

1. The ability of a firm to obtain a resource is dependent upon unique historical conditions
2. The link between the resources possessed by a firm and a firm's sustained competitive advantage is casually ambiguous
3. The resource generating firm's advantage is socially complex

3.5.4 Non-Substitutability

To create sustained competitive advantage a resource must have all the four attributes with the final being that there is no strategic equivalent resource itself that is imitable or not rare (Barney, 1991). Resources are strategically equivalent when they can be used independently on each other to implement the same strategies, meaning that if two different resources can be used to create the same thing, the resource is substitutable. These resources can either be similar or different to current resources but still fulfil the same purpose (Barney, 1991). Similar in the way that the resource is hard to imitate but can get very close and different in actions and handling but reach the same results.

3.6 Purchasing Strategy

A key activity for strategic purchasing in SME is having a formally written long term purchasing plan that is systematically reviewed and revised in accordance to changing company strategy and environment (Pressey et al., 2009). Having a formalized long term plan is however large enterprise biased as most activities in an SME are not as structured. When looking into the purchasing strategy element of the *SME Purchasing Cloud*, based on reviewed literature and in order to create competitive advantage, we have designed a sub-framework for SME purchasing strategies. The framework is originally inspired by van Weele (2014) and his framework of a strategic management process for larger companies (van Weele, 2014, p. 158), which in turn is inspired by Monczka et al. (2015). Together with ideas and thoughts from e.g. Ellegaard (2006) and Ozmen et al. (2013) to name a few, we have created the *SME Strategic Purchasing Framework* for SMEs to more easily work with purchasing strategies and understand the importance of it.

Each step of the framework is presented in Figure 3.3 and lead to an informal or formal strategic purchasing plan.

3.6.1 Company Corporate Strategy

In all steps of the framework for developing a purchasing strategy (Figure 3.3) it is imperative that purchasing strategy is integrated and consistent with overall company strategy (Watts et al., 1995). By doing so, the purchasing function avoids becoming a sub-optimized silo (Näslund, 2013). Since the majority of companies today have services and purchased parts accounting for more than half of their sales turnover, it is important that it is also aligned with company's overall strategy (Watts et al., 1995).

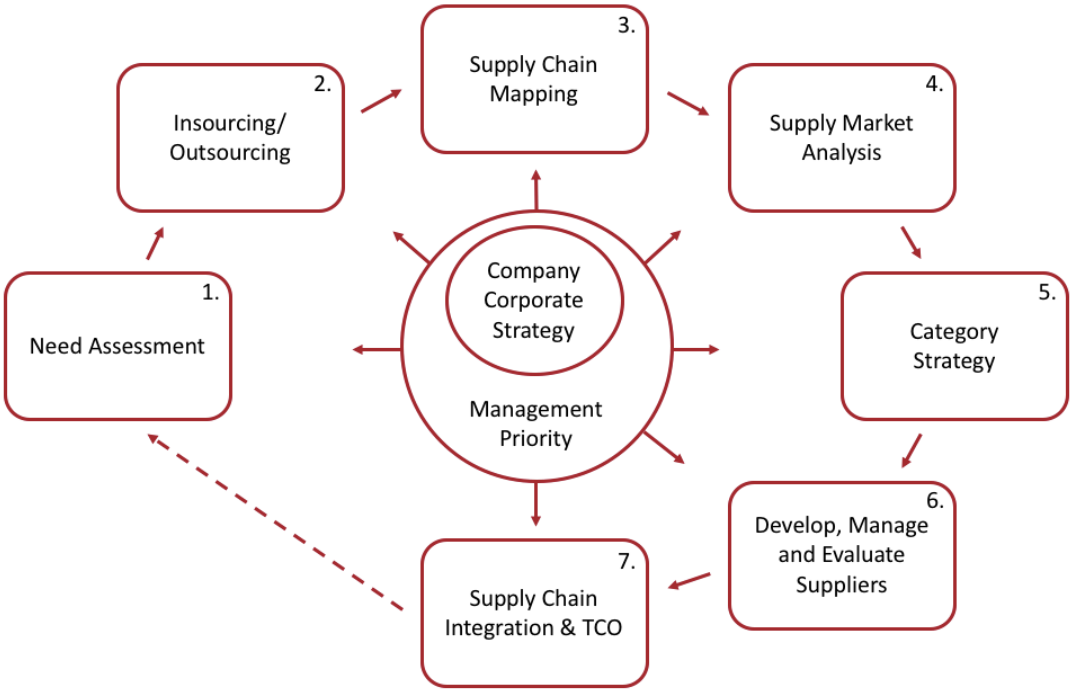

Figure 3.3: SME Strategic Purchasing Framework inspired by Ellegaard (2006), Ozmen et al. (2013), van Weele (2014, p. 158)

The company strategy defines both the ambitions of the company as well as the means for competing in the market place and should be the ultimate precept in business decisions (Watts et al., 1995). Just as purchasing strategy must be based upon company strategy the opposite should also be true. If purchasing is not successful in procuring the company needs, the company strategy might need to be revised in order to adopt to the current supply situation. When formulating a company strategy, it is important to assess both internal and external resources that governs the company's success in the marketplace. The internal factors determine how well a company performs its activities and the external being how efficient and effective the purchasing function is in relation to its competitors. Purchasing must link external supplier capabilities with internal demand and the expressed company strategy. As purchasing and supplier competence and commitment evolves and becomes successful, it is important to not only focus on price and quality alone but also to look towards supplier capabilities (Watts et al., 1995). Watts et al. (1995) argue that companies place too much emphasis on current cost and quality competition on the supplier level and should rather focus more on strengthening supplier capabilities which will in turn contribute to the competitiveness

of the buying organization.

3.6.2 Management Priority

As described under *Size Effects and SME Characteristics* chapter 3.2, purchasing within SMEs is often handled by the owner or in larger SMEs, an employee working part/full time as a purchaser (Pressey et al., 2009, Quayle, 2002). The management or the managing owner of SMEs often becomes a mother/father figure to the organisation, inspiring respect and shaping the company culture (Ozmen et al., 2013). Given the important role of the manager in SMEs regarding his or her experience and involvement in purchasing, it becomes important to include management priority in the framework. The manager also plays an important role in the framework as it is designed for a large target group and the manager has to decide the depth of each step based on the company's current and aspired future purchasing goals. Management support and organizational culture are also identified as critical success factors to any change project (Näslund, 2013) making it all the more important to involve management in strategic purchasing. There is always a trade-off between resources devoted to the framework and the potential to overlook important aspects.

3.6.3 Need Assessment

The purpose of purchasing is to fulfil a need that someone and/or an organization has (Ozmen et al., 2013) which makes *need assessment* an appropriate first step in the model. Without knowing the need behind a purchase, it is very hard to make an appropriate purchasing decision (Ozmen et al., 2013). It is important to understand what the actual need is instead of directly looking at what product/service that might fill a potential need. To exemplify: A company is making knives and needs to make holes through 1000 metal blades in order to attach wooden handlebars to them. The need for the company is then not a drill, the need is holes. In order to fulfil the need of holes one could purchase a drill but one could also buy a laser-cutting machine that could make the same holes, that may be a cheaper or more precise solution than purchasing a drill, but they will both fill the need of making holes.

Another way of looking at the need is understanding the clients' needs and their need drivers. What is of importance for them while using the final product or service? By knowing what the clients need and consider being important will help identifying the needs the purchasing company has to create the demanded product or service (Ozmen et al., 2013). The correlation between consumer approaches has been found to be remarkable (Wilson, 2000).

When the need and the relevance of it is identified, one should evaluate what characteristics of the need that are of importance to fulfil the need. Quayle (2002) identified that the traditional elements of purchasing are of most importance to SMEs namely; quality, price, product reliability, service reliability, and capability to support. Different needs have different levels of these elements and it is of high importance to understand what the most important elements are for each need before continuing to the next step. As for the example of holes; one must identify if the quality of the holes is of high importance, and if so, is it acceptable to pay a higher price for higher quality or are both elements equally important? Is it important that the holes are treated so that they will not start to rust after some time? The elements of the needs have to be identified but trade-offs between different elements does not have to be made yet but could be kept in mind (Quayle, 2002).

Every purchase does not have to go through the same purchasing process every time it is being purchased. These situations when all steps has to be done are relatively few (van Weele, 2014, p. 30). The needs might be similar for every purchase of the same product or service but might differ in some ways. Robinson et al. (1967) have distinguished three types of purchasing situations; ”The new-task situation”, ”The modified rebuy” and ”The straight rebuy”.

The New-task Situation

This situation occurs when the company has never purchased the product or service before and has therefore never investigated possible suppliers. These situations are usually characterized by high risk and a high degree of uncertainty (van Weele, 2014, p. 31). The needs have never been identified or mapped and should therefore go through the whole purchasing process established by the purchasing company.

The Modified Rebuy

The modified rebuy is the situation where the company wants to buy a new product from a previous known and evaluated supplier, or a known product from a new, unknown supplier. These situations arise when problems or dissatisfaction occurs with the known current suppliers or when better products have become available on the market (van Weele, 2014, p. 31). The steps of the purchasing process could therefore vary depending on the situation in order to understand the need of the new product or the new supplier and be decided through *management priority*.

The Straight Rebuy

This situation occurs when a known product is bought from a previous known supplier. Uncertainty and risk is low since already established contracts with the supplier are developed and known (van Weele, 2014, p. 31). These types of purchases do not have to be evaluated as often as the other situations in terms of need assessment but should be updated once in a while to make sure that the needs are still accurate for the client and buyer.

3.6.4 In-sourcing/Outsourcing

The second step of the *SME Strategic Purchasing Framework* is determining which activities that are to be made in-house and which that are to be outsourced. It is an important element to consider in purchasing as there is always a tradeoff between making or buying. In-sourcing can improve a company's resources or dynamic capabilities which in turn can lead to a competitive advantage while outsourcing can reduce cost and make sure that company resources are focused closer to their core competence (Quinn and Hilmer, 1994). Figure 3.4 shows the *Outsourcing Matrix* by van Weele (2014, p. 179) which helps to classify what activities that are to be in-sourced/outsourced. Each segment of the *Outsourcing Matrix* should be handled differently. An activity that is of low strategic importance that is also performed in a non competitive way should be outsourced and activities of high strategic importance that is performed competitively should not only be kept in-house but should also be invested in to be sustained and developed (van Weele, 2014, p. 179).

The level of outsourcing should also be considered, one can use partial outsourcing or turnkey outsourcing. Partial outsourcing being that only a part of a process is outsourced and the buyer still have to coordinate the function and activities. Turnkey outsourcing is when the activity along with the responsibilities of coordination is put on the external provider. Turnkey outsourcing generally makes the activity smoother as responsibility is transferred to the external provider at the cost of losing control and a larger price tag. Partial outsourcing on the other hand gives more control at the cost of organizational capacity to communicate and coordinate the service (van Weele, 2014, p. 176).

In the specialist contractor and construction industry outsourcing is very common with some companies having as much as 90 % of their total cost of a project being outsourced. Some construction companies offer partial outsourcing while other deliver turnkey solutions or both. Considering the high spend of purchasing in the construction industry it is crucial for the industry to succeed in purchasing and coordination of subcontractors (Bildsten, 2016).

A general favourable characteristic of SMEs are their flexibility that make them quick, effective

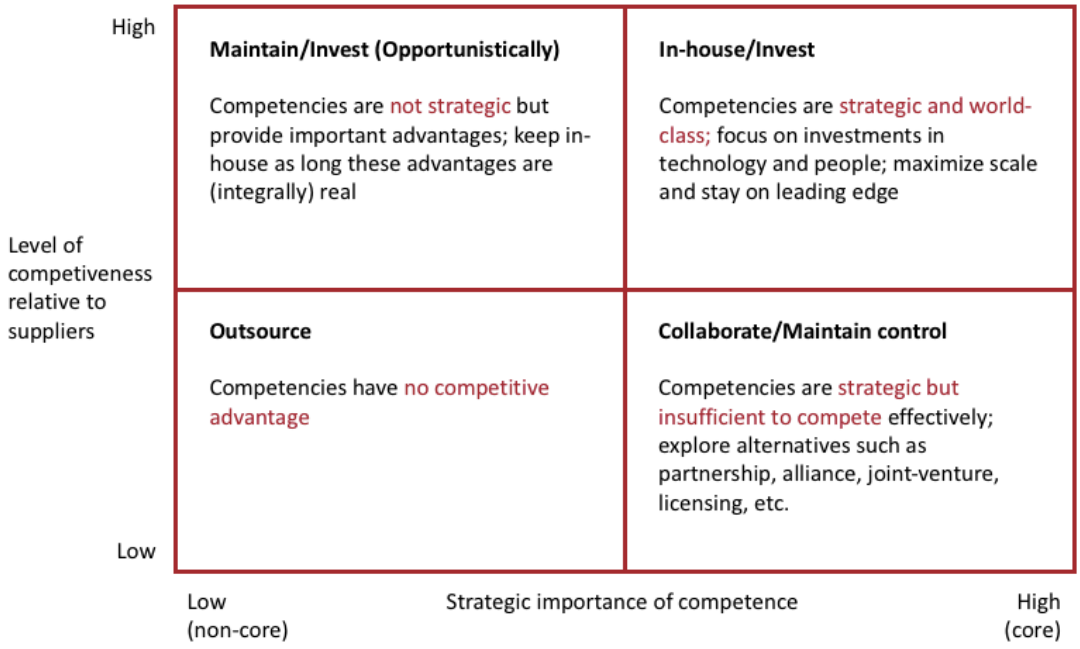

Figure 3.4: The Outsourcing Matrix (van Weele, 2014, p. 179)

and able to address changing client needs (Gelinas and Bigras, 2004). The outsourcing of an activity may jeopardize this responsive strategy and should therefore be thoroughly considered beforehand. Outsourcing can enable SMEs to gain cost advantages of economies of scale that otherwise would not be possible given their limited resources (Abdul-Halim et al., 2012).

3.6.5 Supply Chain Mapping

Before setting up or changing strategies for purchasing it is important to firstly map out the current situation. A strategic supply chain map is a tool that helps visualize the supply chain as it is but also what it can become. The flow of goods and services procured have to be mapped along with the transactions and information between the company and its suppliers and clients. The question of what is sourced, from whom and at what price has to be answered (van Weele, 2014, p. 111). A good mapping can also help illustrate maverick buying, which is purchasing made outside contract (Gardner and Cooper, 2003).

Gardner and Cooper (2003) state that mapping helps:

- Link corporate strategy to supply chain strategy
- Catalogue and distribute key information
- Work as a basis for redesign
- The map can be used as a communication tool
- The process itself is a way of learning about the challenges

Rummler and Brache (1991) argue that managers use supply chain mapping to evaluate strategic alternatives to improve services both internally and externally, but also to orient new employees to understand the company's value chain flows. Process management helps managers to see their own organization from a clearer perspective. Many managers have a flawed view of their own company and do not know how the flows go from tiers to end products (Rummler and Brache, 1991).

Van Ackere et al. (1993) illustrated in their fictional model of a supply chain the importance of understanding how goods, material and transactions flow in a supply chain as well as the importance of understanding all parties' incentives. Although it is a fictional model, the authors argue that the concepts can be applied to business and stress the importance of understanding a supply chain in order to reap the benefits of a redesign. In the model they present multiple ways of reducing cost across a supply chain that are relevant to understand in purchasing. Sharing point of sales data, minimizing order delays and reducing intermediaries all have a significant impact on cost (Van Ackere et al., 1993).

3.6.6 Supply Market analysis

The next step of the *SME Strategic Purchasing Framework* is a supply market analysis. It is a systematic gathering, classification and analysis of data that effect the procurement of goods and services for present as well as future needs of a company. A supply market analysis can be both ongoing e.g. following market prices and on a project basis as auditing a supplier or momentary, setting up a strategic long term goal. A supply market analysis can be based on both qualitative and quantitative data. Qualitative research data could be views, opinions and trends of thought leaders in the industry, experts or company employees and is often based upon interviews. Quantitative research data is based on numbers that are gathered from the company, an industry organisation or general statistics. Quantitative research could include to look at the market share of different suppliers, the

current and predicted future demand or how the price of a product has changed over time. According to van Weele (2014, p. 121), there are three major fields of purchasing market research:

- Material, goods and services - For this research category the intent is to try and obtain potential purchasing savings, minimize total supply chain cost or to mitigate risk by looking towards alternative suppliers or substitute goods
- Suppliers - This category of research is based on the supplier relationship. A supplier research can be directed at a specific supplier trying to determine its conditions and if it can meet the purchasing company's future needs. The future needs of the company should be derived from their overall- and purchasing strategy. For example if a buying company has expressed a strategy of growth and increased quality: How will this supplier be able to meet those needs? Has it got excess capacity? How large party of the supplier's business is made up from the purchasing company and how is it working with quality management?
- Systems and procedures - This category captures the purchasing need of information systems to enable the business to make more informed decisions and to simplify procedures between a purchasing unit and internal or external suppliers

Why perform a supply market analysis

As discussed in the the sub-chapter about environment, it is important to recognize and harness new technology and opportunities presented. A market analysis helps companies to understand what is going on in the industry and how their needs can be met (van Weele, 2014, p. 123). SMEs tend to stick with their current suppliers even if they underperform (Paik, 2011) and try to avoid the resource heavy activities of searching for new suppliers and information (Pressey et al., 2009). However, the increased electronic business and information being available only a click away helps to enable a more resource efficient analysis. A supply market analysis is also important in order to understand more than just price and quality, it is more of understanding supply market networks and dynamics such as monopolies, price structures, transparency and market capacity (van Weele, 2014, p. 123). A good insight for SMEs is that a supply market with a high degree of competition tend to lower prices on its own (Cannon and Homburg, 2001), enabling scares purchasing resources to be directed elsewhere.

Performing supply market research

When performing a supply market research it is important to determine the objective and to make sure that the potential benefit exceeds the cost. It can be done for all purchasing expenditures or for the goods and services that incur the largest cost. After that, it is important to look at already available and free material such as company databases or public documentation. If insufficient or too outdated material is found, then the company must perform a desk research and or a field research in line with the laid-out objective. Once the data is gathered, it should be evaluated and presented in a research report (van Weele, 2014, p.125).

If the company thinks the value outweighs the price, it is possible to purchase market research from consultancies or data supplier firms. A very cost-efficient way of reaching out to new suppliers is via reversed marketing, as for example, presenting on the company web page that they are looking for new suppliers in a certain area. However, reverse marketing does reveal a company's future intentions which could be valuable for competitors or in case of current supply, it could damage that relationship with the current supplier (van Weele, 2014, p.129).

3.6.7 Category Strategy

After a supply chain map and market analysis has been established, strategies for each segment of category of purchased goods or services should be developed. Depending on purchasing conditions and maturity of the SME, the extend to what a category includes may vary. For example, an SME purchasing very few and similar products can perhaps apply the same category strategy for all purchasing. The category strategy should according to van Weele (2014, p.159) include guidelines on:

- If product standardization should be performed or not, to reduce product variety
- Whether or not to reduce number of suppliers
- What type of supplier relationships should be performed and developed

In order to understand all these parts, this sub-chapter have been divided into relevant topics, starting of with segmentation of products to understand and easier realize the following steps.

Segmentation

Several authors have discussed different ways of segmenting products in portfolio approaches built on the *Purchasing Portfolio* by Kraljic (1983), for example Elliott-Shircore and Steele (1985), Syson

(1992), Olsen and Ellram (1997), Dyer et al. (1998), Croom et al. (2000), and Lilliecreutz and Ydreskog (2001). Even though there have been many different variations on the portfolio approach, the one conducted by Kraljic (1983) has come to be the standard for purchasing portfolio matrixes (Gelderman and van Weele, 2005, Pardo et al., 2011).

Kraljic (1983) argues that in order to do category strategy, it might be easier to segment the products and services according to their supply risk and impact on financial results. According to van Weele (2014) purchasing and supply strategies are key to impact the power balance between buyer and its key suppliers. Gelderman and van Weele (2005) made a study on evaluation of the portfolio approach and found out that it is more likely for a company to implement this kind of approach if purchasing has a higher position in the company. The study also showed that the size of the company had an effect of the use of the approach and showed that it is 2.6 times more likely for a large firm to use the approach than an SME (Gelderman and van Weele, 2005). However, according to Gelderman and van Weele (2005) a portfolio approach helps non-purchasing specialists with a practical framework to analyse and discuss purchasing within cross-section teams, which enables segmentation for SMEs where purchasing knowledge might be low.

The *Purchasing Portfolio* by Kraljic (1983) is presented in Figure 3.5 and described in more detail further down.

Purchasing's impact for different product groups, categories or commodities on the bottom line of the company (y-axis) is measured against different factors in a company such as purchasing costs, material costs, the volume being purchased, impact on product quality, or the percentage of total costs - the greater the value, the higher impact it has (van Weele, 2014, p. 163).

The supply risk axis (x-axis) is measured on switching costs of changing suppliers, potential suppliers, short- and long-term product availability, geographic distance, market structure of suppliers, available substitutes and inventory risk. When switching costs are low and products can be sourced from many suppliers, the supply risk is normally considered low (van Weele, 2014, p. 163).

The two dimensions results in four different types of products with supplier relationship recommendations for each; Leverage products, Strategic products, Routine products, and Bottleneck products.

Spend

Derived from the previously established supply chain map the company purchasing spend should be categorised in the established segments. The spending should then, according to Monczka et al.

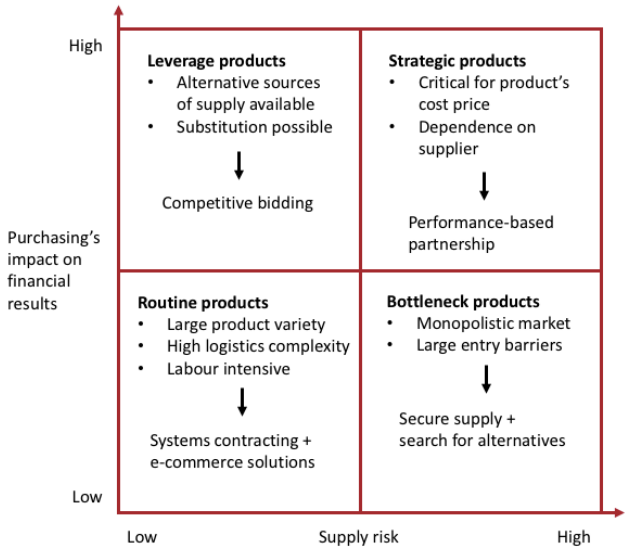

Figure 3.5: Kraljic's Purchasing Portfolio (van Weele, 2014)

(2015, p. 197), be analysed and the below stated question to be answered:

- If the company received the right amount of services and products in line with what the company paid for them
- Which suppliers who handled most of the business and if they charged an appropriate and accurate price according to contracts etc.
- Which divisions of the company who spent money on services and products that were correctly budgeted for
- Potential opportunities to combine volumes of spending from different business areas, standardizing products, reducing number of suppliers, or receive better pricing through exploiting market conditions

Number of Suppliers

Based on the previous collected Supply market analysis and the segmentation of products a company should strategically chose its number of suppliers. Ruiz-Torres and Mahmoodi (2007) argues

that for large companies with highly reliable suppliers the most cost-effective approach is sole sourcing and for less reliable sourcing multiple suppliers are needed to obtain the lowest total cost. Given the relative low amount of resources dedicated to purchasing, SMEs could potentially benefit from dealing with fewer suppliers. Looking back at section *3.2 Size Effects and SME Characteristics*, much of the purchasing is done short term and not systematically which could lead to an ever increasing supplier base.

Standardization

Looking to the commodity segmentation a company should analyse the cost benefit of deploying a higher degree of standardization of the purchased commodity. Standardization could be both procuring products or services that are classified by some industry standard or the replacement of several smaller components to one complex service or product. Once again it is important to look towards company strategy to retain and capitalize on competitive advantages. Buying more standardized products or services could lower the total cost of ownership for an SME as it will lower the complexity and handling costs. Having the potential of lower purchasing complexity could also enable international purchasing and reaching out to new suppliers. On the other hand, purchasing less standardized products could enable a more client oriented strategy of being responsive (Sánchez-Rodríguez et al., 2006).

Relationship with Suppliers

Based on how the purchased category is positioned in the *Purchasing Portfolio* (see Figure 3.5) and the previous steps of the model, the company should decide on what future relations are desired and their effect on cost and profit. Extensive relationships are expensive to maintain and should therefore be done only with strategic suppliers. For each of the segmented categories it is important to understand how the suppliers value the relationship and the interest commonality. The value of the relationship and the interest commonality can be understood using the supply market analysis, communication, business adaptation and economic value. Similar to the *Purchasing Portfolio* Bensaou (1999) suggest a model for assessing suppliers based on the relationship need and investment of the purchasing company on the y-axis and the supplier's relationship need and investment on the x-axis (see Figure 3.6). Each type of relationships can be experienced both high and poor performance and it is important to decide on the appropriate relationship and match that of the product or service.

Based on the relationship the managers must vary the degree of information sharing, boundaries of the relationship and the social climate of the relationship (Bensaou, 1999).

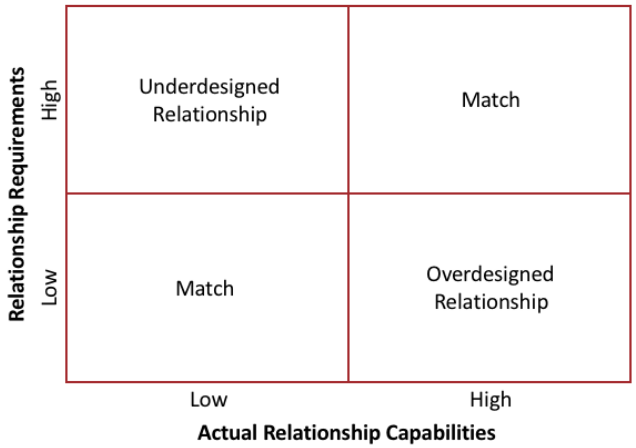

Figure 3.6: Supplier Relationship (Bensaou, 1999)

Communication is a key element of any supplier relationship and in order to become effective and efficient the mode of communication must be matched to the problem being solved. Frequent and rich modes of communication such as meeting face to face are costly but good for solving complex situations, while acquisition communication should be routinised and standardized to achieve efficiency. A relationship with a supplier that leads to relationship specific adaptation has the potential of lowering operational and acquisition cost. Furthermore, adaptation may evolve into common business practice which in turn lead to a potential lower acquisition cost (Cannon and Homburg, 2001).

The political dimension of the relationship is also important to understand as it affects the balance of power between the buyer and the supplier. Power can often be thought of as the opposite of dependency. SMEs generally have less power in the supply market and Quayle (2002) suggest that SME purchasers should focus on fair and reasonable relationships towards suppliers instead of only minimizing costs. Having low power in purchasing, SMEs could potentially benefit from a purchasing consortium, however Quayle (2002) examines this solution for UK SMEs and found that there is a high reluctance among companies to collaborate with potential competitors. As stated under *SME characteristics*, SMEs also tend to stick longer with bad suppliers than larger compa-

nies due to their limited resources. Therefore, it is important to understand the suppliers' goals and perceptions. Krapfel et al. (1991) suggest two critical elements to managing supplier relationships, matching and signaling. Matching is, similarly to what Bensaou (1999) described, when both buyer and seller value the relationship similarly. A matched relationship will lead to better outcome of improvements such as supplier development and reduce the cost of monitoring. Signaling is when one company tries to tell the other that a good relationship has been reached or if another type of relationship is wanted. Sharing of sensitive information or making enabling investments are types of signaling. It is a way of reaching out to see if the other party is willing to commit further into a relationship (Krapfel et al., 1991). Signalling is a good way of establishing trust which has been identified as an important aspect for SMEs.

Key Performance Measurements & Responsibilities

A company needs to measure its performance in order to understand, monitor, and improve its processes. Key performance measurements (KPIs) are important for a more efficient and effective supply chain as well as to align functions such as purchasing to the overall company's vision and strategy. These KPIs must be dynamic, cross-functional, easily accessed and able to promote action instead of reporting. Good usage of KPIs enable a more pro-active management to respond to upcoming changes. The increased use of information systems has enabled a higher amount of data being gathered and more real time KPIs to be monitored. Implementing a performance measurement system (PMS) is closely linked to change management as it requires management support and cross functional collaborative thinking to be really successful (Nudurupati et al., 2011).

Garengo et al. (2005) highlights the importance of PMS for SMEs, yet very few companies carry out performance management. Most SMEs tend to use less formal performance measurements since they lack the financial and human resources and most SMEs think PMS as too much of a bureaucratic system. However, this does not mean that SMEs do not use KPIs and measurements but rather refrain from a system since there is a limited amount suitable for SME practices. Performance measurements and KPIs for SMEs should focus primarily on the operational aspect, then process orientation, simplicity and strategy alignment (Garengo et al., 2005).

Once appropriate KPIs are set in place it is important to break them down and assign them to units or functions so that the employees there understand them and can monitor and improve their performance (Nudurupati et al., 2011). Adding KPIs to contract agreements can highly influence the behaviour of suppliers and work together with incentive models (van Weele, 2014, p. 86). For

the construction projects' cost, time and quality are considered the most basic and important KPIs to achieve better project performance. Safety, functionality and client satisfaction are getting more attention as valuable KPIs for the construction industry (Chan and Chan, 2004). Furthermore, van Weele (2014, p. 109) recommends using back-to-back agreements when purchasing from subcontractors. A back-to-back agreements means that more of the risk and liabilities that a company has is transferred over as well to the subcontractor. These agreements may include incentives or penalties as a way of aligning the work of the contractor and the subcontractor and also to create a more value-chain orientation. These type of agreement may be more suitable towards strategic or trusted suppliers (van Weele, 2014, p. 109). In the Australian construction industry it is normal to include retention money in contracts as a way to ensure that projects are finalised and contracted qualities are withheld (Bildsten and Manley, 2015).

3.6.8 Develop, Manage and Evaluate Suppliers

When relationships with suppliers have been established, one must continuously develop, manage and evaluate them (van Weele, 2014, p. 159). Suppliers should therefore be segmented into distinctive categories as to separate them and the relationship towards them. An examples is presented by van Weele (2014, p. 159) where a company have grouped their suppliers into three categories: Commercial suppliers, Preferred suppliers, and Supplier partners. Commercial suppliers are the ones who just need to follow the agreed terms stated in the contract. The preferred suppliers are characterized by having mutual objectives with the buyer and having a commonly developed improvement programs accepted by both parties. The supplier partners work closely with the buyer in research and development of products and services and are usually few to the amount. Creating supplier partnerships takes a lot of time and is very difficult which makes it hard for SMEs to pursue (van Weele, 2014, p. 159). However, Paik (2011) found in his research that a long-term strategic partnership towards suppliers is as important to SMEs as it is to large enterprises. Furthermore, Paik (2011) argues that supplier relationships have a significant impact on positive purchasing performance.

Pressey et al. (2009) found in their survey of UK SME managers that many SMEs are not undertaking formal supplier evaluations. They also found out that the SMEs differ in the supplier capabilities they prioritise but showed quite distinct cluster behaviour which the authors divided into three groups; ”holistic”, ”process”, and ”logistics”, ranging from most demanding to least demanding firms regarding supplier capabilities. The groups also differed in the way they were handling supplier evaluation but showed equal behaviour in choice of numbers of suppliers utilised

(Pressey et al., 2009). However, Quayle (2002) states that based on his survey of UK SMEs, there is a discrepancy in the client-supplier development programs, laying focus on the product and not the expressed need of looking at the process.

Pressey et al. (2009) also mention that one would expect that different sizes of SMEs and their stages of growth will affect the types of capabilities, suppliers, relationships and supplier evaluation criteria. Furthermore Pressey et al. (2009) argues for a more strategic approach to SME's supply relationships and their strategic orientation to purchasing.

The previous statements mentioned about SMEs' lack of power and resources is argued by Quayle (2000) to affect the importance of supplier development for SMEs and therefore to consider it quite unimportant. Instead, Wieters and Ostrom (1977) argue that the lack of resources makes the SMEs focus more on supplier monitoring. That could be a reason why Pearson and Ellram (1995) found out in their study that most of the SMEs investigated had a rather ad hoc approach to their supplier evaluations. In the study of Pressey et al. (2009) they found out that 48,9 % of the SMEs investigated claimed that they were working with some kind of supplier evaluation but very few had a standard form of how to do the supplier evaluations. Pressey et al. (2009) argue that the findings of their study show that supplier evaluations are more common for SMEs than purchasing adoption and the reason for those SMEs that do not perform supplier evaluation might be the lack of resources and time.

According to Quayle (2000), supplier development is not considered being a panacea for small enterprises, but there is a need for SMEs to recognise the benefits of supplier development. The findings showing that SMEs consider supplier development and strategic procurement as being less important than other matters could change and Quayle (2000) argues that the development of capabilities are not a replacement for results improvement but complementary.

When going through development programs with suppliers it is important to keep in mind how the increasing switching cost can affect the firm as well as its supplier. Too much adaptation could become disadvantageous (Cannon and Homburg, 2001).

3.6.9 Supply Chain Integration and Total Cost of Ownership

The last step of the framework refers to the inclusion and identification of all costs of the supply chain through cost drivers and strategies in order to reduce or eliminate costs (van Weele, 2014, p. 160). According to van Weele (2014, p. 160) developing cost models and stream mapping not just over supply but the whole company is very important as vehicles and concepts during this phase. To

enable cost savings, both buyer and supplier must work together with the end client which requires multiple-way benefit sharing among the participants (van Weele, 2014, p. 160). As mentioned earlier, it is especially beneficial to implement TCO techniques and improve purchasing skills for small enterprises according to Paik (2011).

Product and process development (PPD) is another supply chain integration procedure to develop products and processes internally and in collaboration with suppliers (Ellegaard, 2006). Ellegaard (2006) concluded that current studies on PPD shows that SMEs have low interest in supplier development and process issues in general. Another problem was the identified lack of innovation focus in the purchasing task of SMEs (Ellegaard, 2006). Studies show that SMEs had a risk adverse behaviour related to purchasing which could imply that their focus on innovation could be stifled (Ellegaard, 2006). This in turn lead to purchasing being defensive and trivialised which impedes SMEs from using supplier resources for innovation.

One way for companies in the specialist contractor and construction industry to develop its holistic and life cycle approach is to adopt a network strategy among it suppliers. Håkansson et al. (1999) suggest that by encouraging subcontractors and suppliers to relate and communicate more with each other, SMEs will have greater learning among the suppliers in the network ultimately delivering more value to the buying company. Therefore, purchasing should not just evaluate suppliers independently but rather as a network and how they will fit in and develop within that network.

4

Empirical Study

The gathered empirical data is presented in separated case reports for each case company below. The data is structured to follow the elements of the *SME Purchasing Cloud* and the sub framework *SME Strategic Purchasing Framework*.

4.1 Case Company Data

The examined case companies are all classified as SMEs and work in the construction or specialist contractor industry. Presented in Figure 4.1 and Figure 4.2 are the companies' turnover as well as number of employees over time. As seen in the figures, Torpheimergruppen and Rörläggaren are larger in terms of employees count as well as turnover. TEAM Skåne Bygg AB and Knut Edstrand Byggnads AB have both been relatively steady in terms of employees and turnover compared to the other two case companies.

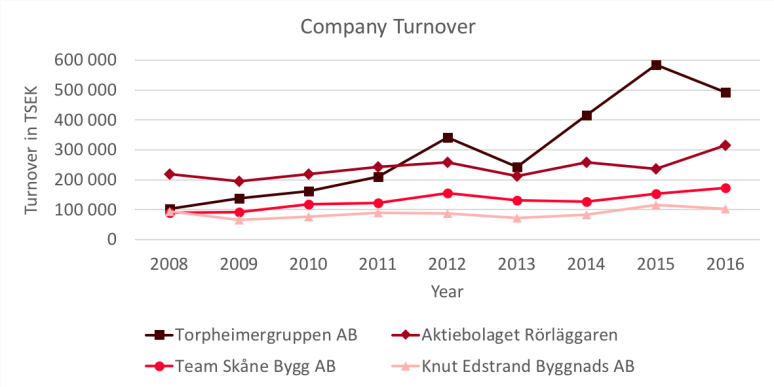

Figure 4.1: Company turnover (Business Retreiver, 2018)

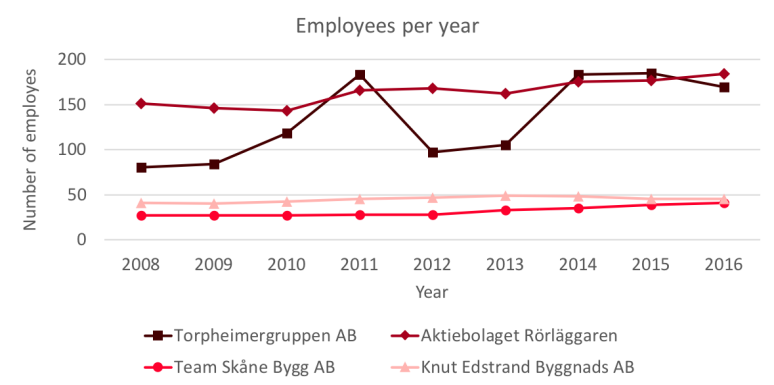

Figure 4.2: Number of employees (Business Retreiver, 2018)

4.2 Torpheimergruppen AB

Torpheimergruppen is a specialist contractor based in Linköping, Sweden. The company was founded in 2001 by Lars-Göran and Yvonne Torpheimer. The company is working mostly with ventilation, electrics and piping. It is operating a project-based industry with ranging project size and everything from turnkey solutions to simple installations. Torpheimergruppen has large business in installation and running of data centers and industrial applications with the biggest client being Ericsson. The company has mostly grown organically and employ roughly 200 employees and has a turnover of 500 MSEK as of 2018. The interview at Torpheimergruppen was conducted with the founder Lars-Göran Torpheimer who has been involved in purchasing from the beginning, although not as much in operational purchasing any more as the company has grown. Torpheimer is still involved in the strategic purchasing decisions, the yearly supplier selection and the larger purchasing deals (Torpheimer, 2018).

4.2.1 Environment

Torpheimer (2018) mentions how the political factors affect how they purchase/outsource services. EU subsidies has for example made it cheaper with labour from Ireland compared to Sweden. To stay updated to these developments one must always stay vigilant to changes, especially to the word of mouth which is common in the industry. To exemplify, Torpheimergruppen keep contact with Enterprise Ireland which could be compared to the Irish version of Business Sweden in order to use the subsidized Irish labour. To keep costs down, Torpheimergruppen is also using data centers in Ireland due to EU subsidies (Torpheimer, 2018). Furthermore, Torpheimergruppen has most of its suppliers in Sweden but occasionally order goods from the US based on client demand. In the event of international purchasing Torpheimer (2018) expressed that currency exchange rates are important to keep updated, because just stating the last purchased price to the client could harm the company since the price could vary greatly with the rates over short amounts of time.

4.2.2 Dynamic Capabilities

Torpheimer (2018) describes that Torpheimergruppen has actively tried to mimic the market values with each of the company's business areas. Torpheimer (2018) says that in its geographical region the market values for piping is twice as large as ventilation while electricity is 50 % larger than piping. By making the size of the business units related to the market size of each category, the company be-

comes more dynamic and capable of following market changes. Furthermore, Torpheimergruppen stay dynamic to fluctuation in business cycles by outsourcing excess capacity instead of employing more people in order to avoid having to pay salaries to excessive employees during recessions. Torpheimer (2018) also state that many employees have skills to work in more areas than they are currently assigned to which helps Torpheimergruppen to stay dynamic if the volume of the business area changes.

4.2.3 Resources

Torpheimer (2018) argues that it is very hard to find people with the right experience and background that is needed to become a good purchaser. Torpheimer (2018) pin points how important the technical and legal knowledge is in their project-based way of working since they are running multiple distinctive projects parallel to each other and it is important that business runs smoothly. The third most important characteristic after technical and legal knowledge of a purchaser is the knowledge of economics and finance according to Torpheimer (2018). A resource with these three areas of knowledge could turn a whole company around just by changing the way of its purchasing actions. The legal knowledge aspect could become particularly important at installation if a supplier delivers the wrong or faulty goods and causes high, unexpected costs. Both directly by increasing working hours in changing already installed, faulty material but also in a TCO perspective as longer working hours could make the project run out of time and cause penalty fees as well as legal fees to sort out the matter (Torpheimer, 2018).

In order to sustain and use the critical purchasing knowledge that is important for each project Torpheimer (2018) has created a personnel pool of retired people. These people have been working either for Torpheimergruppen, for clients of Torpheimergruppen or for competitors. People in the employee pool have valuable technical knowledge, client specific or project specific knowledge and they are hired to work together with Torpheimergruppen as mentors during projects. The result of this pool is decreased purchasing costs as Torpheimergruppen can purchase expertise specific knowledge for its clients and its individual needs.

4.2.4 Purchasing Strategy

Torpheimer (2018) works with purchasing strategy on a yearly basis where he negotiates with his suppliers of the common goods once a year. Instead of negotiating the routine goods every time a purchase is being made, Torpheimer (2018) argues that he saves money on administration costs

by negotiating yearly since he can, based on previous year's spending and knowledge of incoming deals in pipeline, approximately predict Torpheimergruppen's purchasing need the coming year. The strategy is built on having three different suppliers for each product segment: one primary who supplies approximately 50 % of what is needed, one secondary of 30 % and one tertiary for the remaining 20 %, depending on what price and attributes they can offer. Key for the strategy to work is information sharing between Torpheimergruppen and its suppliers. The suppliers need to know an approximated amount of goods needed for the coming year so that they can estimate a discounted price for each case: a price for being the 50 %, 30 % and 20 & supplier. Torpheimergruppen has performed this strategy since 2010 when Torpheimer (2018) started structuring the purchases and employed a professional purchaser. Even though much is negotiated in advance, big projects are usually handled outside those contracts but could also be ordered within the previous supplier contracts due to profitability reasons of large scale purchasing. Torpheimer (2018) mentions scale economics as an important factor affecting a good purchasing strategy which usually comes with larger corporations.

When looking at the international supply market, Torpheimer (2018) mentions that they have purchased a few project-specific products from Denmark and has been working a bit more with labour from Ireland but the cultural barriers differs a lot between different countries which makes it harder to negotiate. The way of working also differ in different countries which makes it hard to coordinate purchases.

Torpheimer (2018) says that there is no expressed connection between their overall corporate strategy and the purchasing strategy they are performing. However, there are many elements of the company culture that is reflected in all departments, including purchasing. One example is the saying "It is never too late to give up", meaning that one should not force a project and finish it if it is not working, just because they have put a lot of time and energy in it. For purchasing the "It is never too late to give up" saying could mean that it is never too late to give up suppliers even though the switching cost might be high. The same goes for the purchasing division, the purchasing function has grown in relation with the purchasing volumes and all decisions and actions have not been planned as the company has grown.

The management is involved in arranging the strategic purchasing of yearly supplier contracts and the board is involved in the bigger purchases which surely affects the priority in purchasing. Most of the operational purchasing is made by the purchasing department under supervision and trust of the management team as well as the board (Torpheimer, 2018). Although having many components Torpheimergruppen does not do any kind of mapping of its purchasing flows since a need

for it has not been identified.

Torpheimergruppen works a lot towards bigger industries where the function of a product is more important than the price. Many of the projects are turnkey where clients specify what they need and it is up to Torpheimergruppen to solve what products, materials and services that will fulfil that need. It is a lot about coordinating and planning subcontractors to work together to get a total solution done on time. Approximately 30-35 % of its purchases are standard products while project-specific products are fewer but in greater volumes (Torpheimer, 2018).

Torpheimer (2018) says that they currently do not outsource much of their administrative functions but that they outsource to subcontractors. However, in the future Torpheimer believe that more functions as for example accounting, wage handling and related areas could be outsourced to be more efficient and save money. Some of their labour is also outsourced because of wage cost optimization, more deeply explained under environment above. Also warranties that are disadvantageous geographically as e.g. the guarantees and service part of a contracted plant built in Toronto is outsourced to a subcontractor. Much of the outsourcing is access controlled, meaning that when there is more to do, more is being outsourced, but in future recessions Torpheimer (2018) wants to do more in-house. Torpheimer (2018) says that he could consider outsourcing all routine work to subcontractors since subcontractors compete by price and could therefore give a lower price than Torpheimergruppen's own personnel can compete with.

Much of the market analysis when it comes to investigating suppliers is done by word of mouth and using already established connections in the industry. As described in the environment sub chapter, Torpheimer (2018) read trade magazines in order to understand the surrounding environment but also to keep in touch with updates on new suppliers. The relationship with suppliers change during growth and companies in the industry often start with local suppliers and further on as the business expand, so does their supplier horizon (Torpheimer, 2018).

Due to Torpheimergruppen's position close to the end client, Torpheimer (2018) expressed that many of its suppliers contact Torpheimergruppen directly to present emerging technologies and potential cost saving substitutes. The technical interest of the project manager at Torpheimergruppen also helps to create a market analysis of the suppliers. Furthermore, Torpheimer (2018) expressed that the client demand forces supply market analysis of the specifications needed. The purchasing team at Torpheimergruppen also acquire much knowledge about the market from the manager of each business unit to make better decisions (Torpheimer, 2018).

Torpheimergruppen is working with 100 % Just-In-Time (JIT) contracts with their suppliers, meaning no warehouse for storing materials or goods. The shipment security and delivery times

are strictly controlled by and connected to the ”Allmänna Bestämmelser”. These regulations make the suppliers take responsibility of the quality of goods until they are delivered but also has to be responsible for the damage that might occur if goods are not delivered in time as negotiated in the contract (Torpheimer, 2018).

Torpheimer (2018) has a system of evaluating suppliers where quality, quantity and delivery accuracy is equally important. Much of the supplier evaluation is based on experience and performance and Torpheimergruppen strives for simplicity with its suppliers and only want the really good ones. Torpheimer (2018) mentions that it is not specifically the supplier that is the most important but the personal relationship between the supplier and Torpheimergruppen.

Torpheimer (2018) mentions that they do monthly follow-ups on how their purchasing actions follow the contracts to reach best possible discount to minimize the total cost of a project. For many clients Torpheimergruppen know the after-market very well as they are responsible for maintenance, service and even operations. Torpheimer (2018) says that by understanding the use for the client, Torpheimergruppen can understand how to make its purchasing function better and more efficient. An example is a project in China where Torpheimergruppen finished the project two hours before predicted which was very valuable for the client, but nothing that Torpheimer (2018) was well aware of before.

4.2.5 Key success factors

(Torpheimer, 2018) expressed many important aspects for successful purchasing such as being risk avert by outsourcing business to sub contractors when faced with peak in demand and having employees with a wide skill set in case business declines in one discipline. Another success factor expressed is that of the relationships with suppliers and the yearly contract negotiation to focus more resources during the year to create value for the customer instead of renegotiating subcontractor deals. Furthermore Torpheimergruppen want to work with the best suppliers that deliver what they promise and refrain from penalty fees and legal battles (Torpheimer, 2018).

Much of the supply market knowledge is passed along using word of mouth and the technical interest of purchasing managers has been identified as valuable for the purchasing function at Torpheimergruppen. Understanding the client need is also important to continuously develop the value that Torpheimergruppen offers (Torpheimer, 2018).

4.3 TEAM Skåne Bygg AB

A construction and specialist contractor based in Malmö with operations all over the south of Scania. The company was founded in 1999 and currently have 41 employees and a turnover of 170 MSEK. Its business consists of everything from small installations to the construction of larger facilities. Much of their purchasing is of subcontractors, doors, windows etc. The interview at TEAM Skåne Bygg AB was conducted with Jörgen Strandborg who has been involved in purchasing at the company for 10 years and has been co-owner for almost 9 years (Strandborg, 2018).

4.3.1 Environment

In order to stay updated to environmental change Strandborg (2018) does not do his own environmental analyses but reads trade magazines with the latest news about the previous mentioned environmental factors as e.g. ”AMA-Nytt” and similar papers. He does mention that it is of importance for TEAM Skåne Bygg to always stay updated but also notes that legal changes for example are not happening faster than the company can react to.

Strandborg (2018) says that technological change as digitalization has affected their way of working with purchasing since many environmental changes affects the industry standard and if a company do not adapt, they will probably fall in the tough competition. He mentions an example of time efficiency improvement from previously scanning drawings, printing them and sending them using traditional mail to a hundred suppliers for quotation as oppose to now when they easily scan drawings once and send them by email to suppliers and subcontractors. Digitalization makes it both faster but also easier to get requests from more suppliers. Digitalization of the construction industry has just begun and Strandborg (2018) believes tomorrows 3D drawings will further improve purchasing as it enables suppliers and subcontractors to visit the sites from a distance and perform more valuable quotations based on more information.

4.3.2 Dynamic Capabilities

TEAM Skåne Bygg expressed a supply risk with small subcontractors, especially in forging industry where small companies tie up a large amount of capital and face a risk of bankruptcy. Therefore, the company work dynamically with these suppliers and sometimes pay trusted suppliers in advance to get them going and make sure they deliver. If a contractor files for bankruptcy, all material that is paid for in advance will have to remain in the bankrupt company during the bankruptcy process.

Therefore, TEAM Skåne Bygg do recurring credit reports on these trusted suppliers (Strandborg, 2018). Since TEAM Skåne Bygg is working in a cyclic environment where it is hard to predict how many projects that are in pipe at the same time, the company does not in-source all services and personnel. Strandborg (2018) mentions that they usually have around 30 builders employed in the company but have projects that cover work for approximately 35 builders. This means that five builders have to be purchased from subcontractors in order to fulfil the need of 35 builders. During recession, fewer projects are coming in and fewer builders are needed, but instead of having to fire their own employees they quit the contracts with the project-purchased, outsourced builders (Strandborg, 2018).

4.3.3 Resources

It is hard to find people with the right experience and background as demanded for a good purchaser. Employees that have started working with purchasing at TEAM Skåne Bygg have shown prior purchasing competence and already have a relationship with the company in some way. This stands in contrast to the majority of recruitments for other professions in the industry and in the company as e.g. builders who are often recruited as apprentices and then move up to become regular employees (Strandborg, 2018).

Creating networks as resources through people is something that Strandborg (2018) also mentions as especially important for purchasers which boils down to the importance of personnel with the right experience and background. He mentions his own past of working at NCC as very important for his current company as he brought a great network of connections from NCC that he can use in his role as purchaser at TEAM Skåne Bygg.

Strandborg (2018) also mentions TEAM Skåne Bygg's way of working with purchasing as a critical resource. By making it easier for contractors and updating their drawings manually by correcting their potential faults, TEAM Skåne Bygg can decrease the total cost of the project. By updating what others do wrong with the knowledge they have within the company, a purchaser will more likely order the right materials or products for a project. If not, faulty products will arrive, forcing the company to order new ones with long delivery times, pushing the contracted final date of the project with penalty fees as a result which will affect the total cost of the project. By having great knowledge and experience among purchasing personnel, one will know where to look to decrease these delays and ultimately avoid expensive penalty fees.

4.3.4 Purchasing Strategy

Strandborg (2018) argues that the advantages of being small are few but lifts the advantage of having the possibility of working very close with both suppliers and clients on a personal level.

TEAM Skåne Bygg as a smaller player in the national market with fewer employees and lower turnover than bigger competitors have purchasing strategies that are highly connected to trust. With that being said, price is still a very important factor while negotiating with suppliers (Strandborg, 2018). TEAM Skåne Bygg has its own database of around 400-500 suppliers of different goods that they work with and trust. The suppliers are not rated in the database but Strandborg (2018) have almost all of them rated in his mind and knows how they have performed earlier. If they are not performing as expected any more, they are removed from the database. When doing municipal procurement, one must by law ask all possible suppliers which helps Strandborg (2018) to update the register with new suppliers. The importance of trust is reflected throughout the value chain and is as important in their purchasing activities as it is for them to build trust towards clients to acquire deals. With trusted suppliers comes security of knowing that things are going to be delivered on time and of right quantity and quality, which is something worth paying extra for since it could save money in a TCO perspective (Strandborg, 2018).

Regarding international purchases, only project-specific products have been purchased from Denmark and the reason why not more purchasing is done abroad is due to the cultural differences. Suppliers are calling daily from Poland and Lithuania to try and sell their products but Strandborg (2018) says that common language is very important for their industry. It is important to get the right measures and specifications of what is ordered, and language can harm the clarity of that. Another reason is the already well-organized network of suppliers in Sweden, they learn from each other and usually knows each other from previous business. Strandborg (2018) mentions that bigger companies as NCC often purchase a lot from abroad but usually have regional or national offices in each purchasing country to get over the language barriers and to be sure to get what they order, something they cannot afford or have resources for at TEAM Skåne Bygg.

The purchasing strategy is not formally connected to the overall corporate strategy. Much of the strategy of building a network structure between TEAM Skåne bygg AB and its clients is reflected in the purchasing strategy. Larger purchases are usually discussed in informal meetings over a cup of coffee rather than a strict process, while smaller purchases are made completely without involving the rest of the management. An important note that should be made is that Strandborg, working with purchasing is also a partner and part of management at the company which means that all pur-

chases are being handled by the management (Strandborg, 2018).

TEAM Skåne Bygg usually gets quite specified drawings from their clients since many of them are municipal procurement where they specify products or material as ”X-brand or of equivalent quality”. This means that TEAM Skåne Bygg can choose to use its expertise and kickbacks on purchasing contracts to receive a lower price by using a substitute or install the specified brand and lower risk of client dissatisfaction. Much of the material and products are routine purchases but project-specific purchases are also very common. TEAM Skåne Bygg contracts many smaller suppliers that have the ability to visit the construction site, take measurements and suggest appropriate solutions. This in turn helps TEAM Skåne Bygg to be more flexible and argue for different products than those specified in the drawings (Strandborg, 2018).

Much of what was previously made in-house is now outsourced, even generally speaking for bigger companies according to Strandborg (2018). The main purpose of that is to minimize risk by moving the risk to subcontractors. Contractors hire subcontractors for a fixed price, so it is up to the subcontractor to make sure they make the profit they need on the quoted price to survive. Strandborg (2018) also mentions the disadvantages of handling personnel in-house in a cyclical industry - It is always better to keep employed personnel busy and outsource or buy extra personnel when business strive. 50 % of services are outsourced to subcontractors and the decisions made on whether to outsource or do in-house is dependent on current company resources and knowledge. Strandborg (2018) mentions the importance of competitive bidding to decrease the purchasing cost and the total price they can offer towards clients. By having specialists in-house, TEAM Skåne Bygg is forced to use its own labour which might be more expensive than outsourcing and will in turn affect the total price towards its clients. TEAM Skåne Bygg has looked into buying existing subcontractors along with their network of clients making more in-house. However, there is a large risk of losing that company’s client base as TEAM Skåne Bygg would take up much of that company’s capacity as well as not allow the company to longer work for TEAM Skåne Bygg’s competitors - leading to a potential lose-lose situation for both parts (Strandborg, 2018).

When evaluating potential suppliers apart from word of mouth Strandborg (2018) also analyse suppliers’ credit score, check reference projects and so on. Strandborg (2018) does not actively search for new suppliers but rather evaluate the abundance of offers that suppliers send to him. If they for instance are building a gymnasium for a school the project is posted online and Strandborg (2018) receives offers from multiple suppliers offering quotations. However, the suppliers with already established relations are most often chosen.

Strandborg (2018) also mentions ”Sverige Bygger” as a way of supervising their competitors and

their respective suppliers since the web page shows competitors and their projects they are working in. Another advantage of working with subcontractors is that the contractor can always ask the subcontractors if they are calculating for the same project as the contractor with others. So, through subcontractors, contractors can get a picture of who is competing about the same deals. In some cases, TEAM Skåne Bygg has decided not to continue calculating for a project if they know that some of their competitors are interested in the same contract since they cannot compete profitably with them.

Regarding warehousing, TEAM Skåne Bygg works with JIT deliveries from its suppliers to the designated project it is working on without any warehouse for storing goods or material. TEAM Skåne Bygg do have a warehouse with the purpose of storing goods that are being left over from previous projects, mostly because the company handle such a big variety of goods and cannot always calculate exactly how much the need is for each project. The contracts with the suppliers regulates when materials and products are to be delivered since there is a lot about planning and making time schedules in order to synchronize shipments. Sometimes suppliers are rejected because they cannot deliver in the specific week as required from TEAM Skåne Bygg. Delivery on time is a critical criteria for TEAM Skåne Bygg when evaluation suppliers. Since on time deliveries are crucial to making the rest of the project follow the time schedule as smooth as possible (Strandborg, 2018). TEAM Skåne Bygg does not segment its products or suppliers at all according to Strandborg (2018).

Strandborg (2018) says that there are so many subcontractors who want to work with them at TEAM Skåne Bygg so the power balance is completely moved towards TEAM Skåne Bygg with way more power than the subcontractors. The subcontractors are more dependent on TEAM Skåne Bygg than the other way around, even though Strandborg (2018) mentions that the subcontractors sometimes come up with projects themselves that TEAM Skåne Bygg can help out with. Strandborg (2018) says that the company can put quite high demands on their subcontractors because if they do not deliver, they can choose the next one in line. Just because a subcontractor has built a relationship over time with TEAM Skåne Bygg does not mean it is secured in the future, it is a very competitive market and players always have to be on top in many areas (Strandborg, 2018). Once again, Strandborg (2018) mentions the importance of trust towards subcontractors as being very important which evens out the power balance a bit.

The size of the wholesalers also makes it very hard for clients to state any demands at all (Strandborg, 2018). Strandborg (2018) mentions an example of when he was working at NCC, a big player in the Nordic construction industry. NCC started its own company for electrical goods importing from Asia to save money, but since there were so many electrical goods needed for different in-

stallations, it still needed to buy some products from the wholesaler. Since the amount of goods purchased from the wholesaler decreased enormously, the prices of goods NCC bought increased tremendously to cover up for the losses of non-sold goods. This made the in-house electric goods company unprofitable, and the power was back at the wholesaler, making it hard even for a big company as NCC to compete with the wholesalers (Strandborg, 2018).

Strandborg (2018) says that they do not have a system for evaluation of suppliers but always evaluate them after each project together with site managers. This is usually done verbally over a cup of coffee where factors such as quality and delivery times are important. The supplier evaluation is not documented but informally stored with Strandborg (2018). When faced with unsatisfactory suppliers, simple communication usually solves the problem until the next contract, due to the competitive market. Communication with the site managers about how the suppliers or subcontractors have performed is usually key to understand if further collaboration should be considered. One of the most important aspects is communication with subcontractors. Having reliable subcontractors with good communication skills is paramount as many problems can be worked around if they are expressed ahead of time. If subcontractors agree to a contract they later cannot fulfil, they lose a lot of trust from contractors. In the long run, it is better for subcontractors to do few jobs and do them well than taking on many and increase turnover but under perform (Strandborg, 2018).

4.3.5 Key success factors

Strandborg (2018) argues that trust between actors in the market is one of the most important keys for small companies. He mentions the example of the sub-contractor who did not show up on site as decided. The sub-contractor had a valid reason for not showing up but since it did not communicated to TEAM Skåne Bygg that it was not going to show up, they lost their trust towards the contractor. By building relationships with trusted suppliers, TEAM Skåne Bygg knows that what they need will be delivered on time and of the right quality, mentioning the example of having suppliers or sub-contractors that can come to site and make measurements themselves to be sure to get the right type of goods of the right size. By doing so, and not having the competence in-house, the sub-contractor will have the responsibility of material on their own budget and has to take the risk of something going wrong with parts they handle (Strandborg, 2018). The last important takeaway mentioned by Strandborg (2018) is the ability to stay dynamic to the cyclic industry by not having to many people employed. It is not easy to fire people but also not efficient having people getting paid for not doing anything when the cyclic market is down.

4.4 Rörläggaren AB

Based in Malmö, Rörläggaren is a specialist contractor working with heating, ventilation and sanitation all over the Öresund region. The company does both turnkey contracts as well as smaller installations. Rörläggaren has 183 employees and a turnover of 315 MSEK as of 2016. The interview at Rörläggaren was conducted with the CEO Patrik Persson who has been involved in purchasing since 1998 (Persson, 2018).

4.4.1 Environment

Persson (2018) mentions the importance of always keeping up to date with new possible suppliers and changes current suppliers make. He also pin points that due to the great power balance between wholesalers and their clients, Rörläggaren and its competitors cannot make significant impact on the changes the wholesalers do. They do have an impact though on price changes of products when e.g. the raw material prices drop. The wholesalers do not always correlate the prices of their products to the raw material price changes but do if Rörläggaren notice it (Persson, 2018).

Due to the development of digitalization Persson (2018) says that their IT system has made it possible for them to collect all their contracts and contract possibilities with suppliers at one place. Time is being significantly reduced since it is possible to only do one request that will be distributed to all possible suppliers. Their IT system also helps them to coordinate transport of goods and material to site. By measuring how much a truck can load, the system fills up a truck and the good of less than truck load volumes are added to other orders from other suppliers with similar delivery times. The system is also connected to the wholesalers' suppliers, so it can predict the order stock levels. Furthermore, the system connects the bills and the budget for the project so that the purchases do not exceed the budgets and minimizes costs by always staying updated with price changes. All these functions that are now made automatically reduces the need for knowledge resources connected to purchasing (Persson, 2018).

4.4.2 Dynamic Capabilities

Persson (2018) tries to keep the company dynamic by continuously evaluating its need assessment. By looking at substitute products, Persson (2018) found that they could reduce purchasing costs and minimize the risk of theft by changing much of their previous copper piping to plastic - A way to handle competition and unexpected costs. Another way to stay dynamic is to not have all services

in-house. Rörläggaren outsource some of the functions in order to follow changes in the cyclic environment and not have to fire employees during recessions (Persson, 2018). Further actions about outsourcing services is described under Purchasing Strategy.

4.4.3 Resources

Persson (2018) mentions the technical and purchasing competences as the most important resource for purchasers but also for people working together with the purchasers. In the purchasing strategy of Rörläggaren, the project engineers are deemed especially important since their way of working and their methodology are highly personal, which makes them a rare resource with qualities that are hard to transfer. Their knowledge and business decisions are currently not documented in any way for future employees. Since the knowledge is very valuable and rare, the company put a lot of focus on transferring that knowledge verbally and through supervision (Persson, 2018).

4.4.4 Purchasing Strategy

Persson (2018) mentions their size as a company in the national market as being important for the purchasing strategy, with bigger purchases comes bigger discounts. These advantages were not possible when Rörläggaren was smaller and he does not see any advantages at all in being small when considering purchasing. Persson (2018) also stated the disadvantages in the asymmetric power balance between buyer and supplier where the suppliers are large wholesalers.

Rörläggaren has a purchasing strategy where the purchasing department choose three suppliers on a yearly basis: two that supplies 40 % each and one for the remaining 20 % of approximately 6000-7000 products. The purpose of this strategy is to promote competition, keep the prices down and minimize the purchasing risk. The first action of strategic purchasing was made in 2002 with 30 employees and a turnover of 40 MSEK where Rörläggaren went from reactive to proactive purchasing. From buying only by need identification to more structured negotiation of the company's yearly purchasing needs. The result was less time spent on negotiation and higher value for clients and the company itself.

Strategic purchasing has always been considered important for Rörläggaren but has received more focus when the company has grown and has had the ability to acquire relevant resources. The process of purchasing has become more standardized but also been simplified by new IT-systems which makes it easier for the company to purchase goods and materials. The new IT-system builds a bridge over the wholesaler to its suppliers so that the purchases from Rörläggaren are registered at

the wholesaler's suppliers to make sure they have relevant products in stock, helping Rörläggaren to plan its purchases better (Persson, 2018).

The purchasing strategy is well aligned with the overall corporate strategy at Rörläggaren (Persson, 2018). Its strategy is not to be tempted to take on all projects reactively, but to do those projects that align with their core competence and that are profitable. This in turn will lead to the purchasing division buying what the company is good at. The reactive actions have disappeared along with the growth of the business. Management have since a long time back been involved in the purchasing strategy and also the purchase itself. Rörläggaren tried to implement completely centralized purchasing with the goal of saving money through less transactions and bigger orders but since not enough resources were dedicated to the process, the lone purchaser responsible got overwhelmed (Persson, 2018). Instead, the CEO is involved in bigger purchasing decisions but the responsibility for regular everyday purchases lies within each project and its owner, being decentralised.

Rörläggaren usually decides what products to purchase in 50 % of the cases out of the expressed need while 50 % is specified by the client. In contrast to some of its competitors Persson (2018) believes Rörläggaren has an advantage towards its clients since the company can decide what material and products to purchase and so on get use of the pre-negotiated deals with suppliers. Rörläggaren strives towards installing complete systems instead of products since that gives bigger influence of which products are purchased (Persson, 2018).

Rörläggaren outsource parts of its organization as e.g. warehousing of standardized products as part of buying from wholesalers. One third of the costs are outsourced to subcontractors who fills in the gap of knowledge and competence outside of Rörläggaren's core competence. 30 % of engineering hours is made in-house and the rest is outsourced in order to always keep their own personnel busy. The extra engineering hours are usually bought for bigger projects where in-house engineering hours are used in the more complex projects in order to minimize risk attached to purchasing loosely specified services (Persson, 2018). Rörläggaren sees the potential of doing things in-house when the competence outside the company is weaker. The company built for example a small workshop in 2005 for a special project to make prefab systems on ground to minimize the installation time in the building they were working in to save money. After the project was done, Rörläggaren kept the workshop and focused on developing the competence of prefabricating systems before installing them. Persson (2018) says that he does see that more companies have started using prefab solutions which might push the prices down so the workshop might not be profitable in the future.

Persson (2018) says that many of the standardized products they purchase have a delivery time of one day which makes it easy for the company to track them while some special products have longer

delivery times. The strategy is mainly built on quick deliveries and is why they do not map their purchasing flows.

At Rörläggaren, a market analysis is performed during the yearly purchasing meeting where coming needs are analysed. If the current supplier cannot deliver, data and quotations from new suppliers are gathered. Persson (2018) also stated that there is good communication with the suppliers behind the wholesalers in terms of product development and they often investigate the TCO perspective with new products in order to minimize the costly activity of installation.

Rörläggaren segment its purchased products by function, but also product category and ease of assembly (Persson, 2018). Rörläggaren has no warehouse for storing goods or material and do JIT shipments for all its projects from its suppliers. The delivery accuracy is very high and estimated to be around 99 % according to Persson (2018), but he mentions that the delivery time of purchased products from wholesalers sometimes are better than it need, but still have to pay for. If a product was ordered at four in the afternoon, the product would be delivered at seven in the morning the next day. By planning ahead on what material was going to be needed, Rörläggaren did not need the fast response times, and especially not pay for it. Through negotiations, Rörläggaren has got a discounted price for longer delivery times since it saves more money on planning ahead than having fast deliveries (Persson, 2018).

Persson (2018) mentions the relationship with subcontractors as being much stronger than with wholesalers. The wholesalers run an oligopoly market towards their clients and due to their size and position in the market, they have the majority of power and companies as Rörläggaren has a hard time negotiating (Persson, 2018). Regarding evaluation of suppliers, Persson (2018) says that Rörläggaren only evaluate on price for wholesalers but for other subcontractors and suppliers, the feeling or reputation of a supplier/subcontractor is the evaluation they do together with warranty and quality which is performed by the perception that employees make.

Persson (2018) says that for them at Rörläggaren, the time of installation and mounting is very important to take into account when doing purchasing since it will affect the total cost of the project. This is as much else, not written down as a systematic way of how to take this into account in purchasing but is based much upon feeling.

4.4.5 Key success factors

By having an IT-system for purchasing, Persson (2018) argues that they make their purchasing much simpler and can control more parts of the supply chain by connecting with the supplier's supplier.

By creating this trusted relationship with the suppliers, Rörläggaren is believed to cut costs and so on either reduce price to client or increase the profit margin. Since Rörläggaren only negotiates once a year with the suppliers of the biggest orders of materials and goods, Persson (2018) believe the company can cut a lot of administrative costs and also make sure the supplier has their goods and materials needed in stock as a prioritized client. Persson (2018) also says that one should not be afraid to outsource parts of the core competences in the company if that will lead to cost cuts by not having employed people unstimulated during recessions.

4.5 Knut Edstrand Byggnads AB

Knut Edstrand Byggnads AB (KEBAB) is a family owned construction company founded in 1961. KEBAB has its roots and much of its business in the east of Scania operating primarily in the municipalities of Simrishamn, Sjöbo, Ystad and Tomelilla. It offers everything from turnkey solutions in building e.g. architectural drawing and complete house building to smaller installations as instalment of windows or renovation. Its clients are both private individuals and companies. KEBAB have its core competence in builders and carpenters and use many subcontractors for specialist jobs. KEBAB has a turnover of 100 MSEK and employ 41 employees as of 2016. The interview was conducted with Jonas Edstrand, the CEO of KEBAB and grandson of the founder (Edstrand, 2018).

4.5.1 Environment

To be updated the environmental changes in the industry Edstrand (2018) does not do any analysis himself but read trade magazines with the latest news about the changes. Much of the environmental updates comes through media, such as legal changes, rules and implementations of new systems. Examples as ID-06 or rules that make contractors responsible for their subcontractors paying their employees (Edstrand, 2018). Word of mouth is also identified to be a good source of environmental analysis. He also notes that changes are not coming faster than they can handle and legal changes are usually stated far before they are implemented.

4.5.2 Dynamic Capabilities

KEBAB try to stay dynamic by having a wide variety of services and competence in the company. With multiple markets, KEBAB is less sensitive to a changed demand, e.g. if the private housing market goes down it will be able to take on more projects in other parts of the market. Similarly, many of the employees at KEBAB have knowledge in many fields and can therefore work with other tasks or industries when client demand is lower (Edstrand, 2018).

4.5.3 Resources

Edstrand (2018) mentions the importance of their purchasing personnel being business minded in order to be good purchasers. He argues that to be a good purchaser, one must understand the industry and be able to negotiate with suppliers. A high price or a bad agreement could affect the

final profit margin of a project or even make the company lose a deal to a competitor before even getting into the project.

4.5.4 Purchasing Strategy

Edstrand (2018) believes that the decisions are made faster in a small company which is also reflected in the purchasing activities as an advantage of being a small player, but he also highlights the advantages of being a bigger player with greater purchasing volumes and bigger discounts. The purchasing strategy is highly connected to trust with suppliers but factors as price are still very important.

Edstrand (2018) has two main suppliers of material. Mainly because of the good relationship between each other but also because KEBAB has an advantage of being close geographically and can therefore make additional deliveries if something is missing or miscalculations has been made from KEBAB's side. The relationship means that KEBAB does not always purchase for the lowest price possible but by the biggest quantity, which is highly preferable for the supplier. With this long-term relationship in mind, the client and supplier help each other to survive during each other's recessions but also share their booms. The strategy is very important for KEBAB and Edstrand (2018) says that suppliers who are not open to this kind of relationships are rejected from their list of suppliers. Even though some suppliers are more often used than others, KEBAB collect offers from several subcontractors for each case it is working with to be able to measure price and performance. KEBAB negotiates the contract with one of the biggest suppliers once a year but has not much to say in terms of demands. When KEBAB has reported approximately how much the company is going to buy, it will get a fixed discount that it has little influence over in negotiation (Edstrand, 2018). The same goes for many of its smaller suppliers too, but if the price is too high, KEBAB will stop buying that specific product from that supplier which the supplier usually notice. Through communication, they usually find a price that fits them both (Edstrand, 2018).

When it comes to international purchasing Edstrand (2018) mentions that they do very little, only when special requests of products are made from their clients that cannot be bought in Sweden. Due to cultural and language barriers, KEBAB does not buy material or goods from abroad even though it could reduce the price a little. The way of working in other countries differ from Sweden which makes it hard to predict deliveries and negotiations.

Since KEBAB do not make a budget for each year and has no expressed overall corporate strategy, it is hard to connect the purchasing strategy to it (Edstrand, 2018).

KEBAB has great influence on what products are being purchased for the fulfilment of the

client's need. The client usually has opinions on what is being ordered but since clients usually lack the material and product knowledge, KEBAB can help clients by identifying which products are best for their need and so on give recommendations. Standard material and products are usually bought from the same suppliers, but project specific materials can be purchased from new suppliers. Houses that KEBAB build are usually not as unique as many people think, a big part of the house is standard materials and standard ways of doing things even if they might have the implication of looking unique (Edstrand, 2018).

KEBAB outsource services to subcontractors when special competence is needed. The subcontractor takes care of the purchasing needed for what they will install since they will get the warranty of both material and labour, minimizing the risk for KEBAB in a strategic way. What to outsource and what to do in-house is usually controlled by rules and laws as installation certifications etcetera. *"If you get the function in-house, you will not subcontract the service and cannot compete on price which will not only affect purchasing but the total cost of the project"* (Edstrand, 2018).

Edstrand (2018) says that he believes that the reason for refraining from supply mapping is because a lot of the work they do is done outside office and their own "plant" in contrast to for example car manufacturers where mapping might be more important.

Edstrand (2018) mentions that market analysis and competitors' quotations can be collected when doing municipal procurement so that they can understand how the competitors are standing on price. These quotations are very detailed, as they e.g. can see what their competitors' prices are for their labour which will give an indication on where KEBAB needs to be in order to compete. Edstrand (2018) says that it is a good way in order to understand their competitors and how they think.

KEBAB follow a JIT strategy of suppliers with goods and material delivered to site and only a small warehouse for leftover material and some very standardized products as plastic rolls, used for insulation. Regarding segmentation of products, KEBAB segment its products after its suppliers, the same product from the same supplier which is a strategy the company has kept for a long time (Edstrand, 2018).

KEBAB does not have a formal system of evaluations of suppliers nor a structured evaluation policy. Edstrand (2018) has a meeting after each project with the site manager and the employees to evaluate how the project went and how the suppliers and subcontractors performed. In order to evaluate which subcontractors and suppliers to continue working with, KEBAB look at previous projects and the performance of suppliers/subcontractors. It is usually the site manager that has the most information on if the subcontractors have been on time or reported potential extra work be-

fore doing them etcetera. Communication for improvement is usually key and most subcontractors change what they did wrong earlier after evaluation due to the importance for them to continue the collaboration. Feedback to the subcontractors and suppliers is important, not only for evaluation but for the total cost of the project and potential future collaborations in other projects (Edstrand, 2018).

To reduce the TCO, KEBAB purchase some material that is easier to handle to reduce expensive labour hours even though the purchasing price is higher, the total cost will be lower. Another way of reducing total costs has been to purchase materials and products that are well known and tested. New materials could be dangerous or poisonous as e.g. asbestos, which not only cost in terms of health of employees but also money when having to redo already finished work. It is important in this business to understand that short cuts that are cheaper and simpler could be more expensive in the end. Even though a product, material or way of working might not be bad or wrong, it might worry the client that errors will occur in the future and doubt you as a contractor (Edstrand, 2018).

4.5.5 Key success factors

For KEBAB the relationships with suppliers is an important decision as they want to work with local suppliers that are willing to share risk as well as profit/loss. Furthermore, previous business and trust is important as KEBAB does not continuously evaluate every aspects of their suppliers but instead perform an overall evaluation by the on site manager from KEBAB. Much of the important information in the industry regarding suppliers, materials and changes in the environment is spread using word of mouth and it is imperative that this information is collected.

4.6 Cross-Case Findings

To summarise, key takeaways from the case companies as well as background information is presented in the cross case table 4.1. Noticeable is that all companies express that they perform strategic purchasing and that there are many similarities with their purchasing activities. To exemplify, all companies have expressed value in trust and all apply JIT deliveries from suppliers (Edstrand, 2018).

Company name	Torpheimergruppen AB	TEAM Skåne Bygg AB	Rörläggaren AB	KEBAB
Argue they have a strategic approach to purchasing	Yes	Yes	Yes	Yes
Purchasing spend/total cost incl. Subc.	70%	70%	66%	60%
Subcontracting spend/total spend	20-60 %	55-65 %	33%	40%
Purchase environmental analysis	Yes, several trade magazines	Yes, AMA nytt	The trade organisation "Installatörsföretagen" and its trade magazine VVS-forum	Yes, AMA nytt
Centralisation of purchasing	Hybrid	Centralised to purchasing function	Decentralised to project	High, most large purchasing done by CEO, however evaluation is done by project managers
Warehouse of goods	No	No	No	No
Main outsourcing	Outsource demand spikes, project specific competence, speciality knowledge and certification etc.	Outsource demand spikes, project specific competence, speciality knowledge and certification etc.	Outsource demand spikes, project specific competence, speciality knowledge and certification etc.	Outsource demand spikes, project specific competence, speciality knowledge and certification etc.
Critical purchasing competence	Technical, legal and business knowledge	Prior purchasing experience and a large network	Technical knowledge and purchasing competence	Business minded
Multiple sorucing	50/30/20	Normally single sourcing	40/40/10	Spread it out on 2-4 suppliers but use single sourcing for each project. Prefer local supply
Supplier selection aspect	Trust & previous experience	Trust	Trust & previous experience	Trust & dynamic pricing in relation to economy
Purchasing strategy connection to company strategy	Culture: "Never too late to give up"	Building networks	Purchasing material & services within core competence	No expressed connection although prefering to work with local suppliers and minimizing risk
Supply chain mapping	No	No	No	No
Supplier evaluation	Yes, evaluation of quality, quantity and delivery accuracy as well as less formal evaluation of relationship and personal contact	Yes, non systematic, verbally and informally. Bad result incure removal from supplier list	Yes, mostly non-systematic and verbally	Yes, mostly nonsystematic and verbally
TCO	Montly followups to receive kickback goals. Evaluating customer needs	Analysing drawings and correcting mistakes early, have subcontractos visit site to reduce overall cost	Mainly evaluating installation time of components	Working with well known matierals and suppliers. Pushing risk towards subcontractors

Table 4.1: Table of key cross case findings

5
Analysis

This chapter includes the analysis of the theory conducted and the empirical findings of the four case companies. The chapter is structured by the elements of the *SME Purchasing Cloud* and further of the *SME Strategic Purchasing Framework*

5.1 SME Characteristics

The SME characteristics as stated in theory have been analysed in comparison to the information about the investigated companies. Some characteristics stands out as being more significant even though all characteristics investigated have been identified in all cases. It is clear that all companies value communication as an important part of their business, not just for purchasing but for several elements in their overall strategy. The same goes with cooperation and collaboration with suppliers and their relationship to them. Many of the relationships between contractors and suppliers are highly built on trust between critical parts, something that is very characteristic for SMEs. Theory as e.g Ellegaard (2006) and Pressey et al. (2009) also states that SMEs have limited resources due to the size of the companies which not surprisingly is in line with the investigated companies. Another characteristic brought up in theory is SMEs being financially vulnerable (Björnfot and Torjussen, 2012). If neglecting the obvious correlation between being small and being vulnerable, all investigated companies work intensively to find ways of reducing financial risk by e.g. outsourcing services. A notable finding is the growth of professional purchasing as the companies get bigger along with the focus on more long-term solutions in purchasing strategy. Since the range of SMEs is quite wide, ranging from 1 to 250 employees, some theories make a difference between small-sized enterprises (SE) and medium-sized enterprises (ME) in order to find differences. What the empirical findings show are similarities with SE theory in how KEBAB and TEAM Skåne Bygg handle purchasing and similarities with ME theory in how Rörläggaren and Torpheimergruppen do their purchasing.

5.2 Environment

The changing environment has had an impact on all the investigated companies over time. It is a traditional industry where much have been done in the same way for a long time, which might make it hard for companies to adapt to environmental change and counteract development. Generally, changes are not coming faster than the companies could answer to but it is still considered very important to always be updated on the latest news in terms of political, economic, social, technological, ecological and legal factors. As stated in theory (Paik, 2011) and also conducted from the interviews, SMEs' influence on environmental changes is very small due to the size of the companies. Therefore, adoption of changes and being dynamic towards them becomes particularly important in order for SMEs to stay competitive and survive when the competition is high, and the market is cyclic. Even though the changing environment makes competitors fall, it also creates opportunities for others to

gain competitive advantage. Thanks to the size of the company, it becomes clear through both theory and empirical data that SMEs are relatively faster and more responsive than larger companies due to less complex company structures.

Even though none of the investigated SMEs do environmental analyses in-house, all of them stay updated through outsourcing of external factors. For example, the case companies subscribe to trade magazines which includes many of the relevant factors they need to stay updated on the industry. Another way of understanding environmental changes are through more informal, word of mouth communication with people in the industry, including clients, subcontractors and others. An observation made from the interviews is the relevance of doing more environmental analysis in-house as the companies grow bigger which might be explained by the ability to gain more accurate resources and the importance of keeping competitive advantage. Since none of the investigated companies do systematic environmental analyses in-house, it is hard to make sure they follow the three criteria (What the key market variables that emerge as a result of environmental change in that market are, What the effect of these market variables on a firm's strategies is, What changes firms will have to make to their resource and competency base in order to create new strategies) from Walsh (2005) that must be investigated for environmental analysis even though much of their ad hoc approach implies that they might cover it.

Regarding internationalization, and purchasing abroad, the environmental factors become more significant since they vary from how they are experienced in Sweden. An interesting finding from the interviews was the significant importance of political, economic and social factors. The political factors abroad create opportunities for purchasing abroad since e.g. subsidies can make outsourcing services from abroad cheaper than in-house services or outsourcing within Sweden. Since the political factors vary greatly around the globe, it is of extra significance to be updated on changes that could make a negotiated or purchased advantage service a disadvantage. The economic factor stands out when discussing international versus national purchasing since many new aspects comes in when doing purchasing abroad. Exchange rates are not considered in national purchasing but becomes critical when going international since the price of a good can vary from day to day depending on the changing exchange rates and therefore question the economic advantages of purchasing abroad, especially for inexperienced, financially vulnerable SMEs. The social factors have according to the interviews been one of the biggest reasons to why SMEs choose to not purchase from abroad. The cultural and language barriers seem to be crucial aspects since misunderstandings in communication might lead to wrong deliveries and faulty goods which not only affects purchasing but also the total cost of a project. Furthermore, the geographical distance has an impact on time of delivery

and redelivery, reducing flexibility and increasing risk. Noticeable is that even though some factors are considered more important, all six factors of the PESTEL framework are of relevance to SMEs.

The degree to which digitalization has played a significant role as a competitive advantage in purchasing varies among the companies. The effect of digitalization is present in all cases since the surrounding environment forces companies to adapt to digitalization changes in order to compete and survive. However, digitalization has improved the efficiency of purchasing actions over time and during growth but has also increased the overall business pace, leaving little room for reflection upon offers. On the other hand, advanced purchasing IT-systems have proved to make the purchasing activities more efficient and standardized which have reduced the need for repetitive purchasing tasks and increased competitive advantage within purchasing.

The case companies expressed a competitive advantage of being smaller and closer to their clients as it is easier to visit on site and make professional judgement about the individual project. However, this advantage might be reduced in the future as the emerging technologies of 3D drawings in construction could make it possible for any company to visit a local construction site in virtual reality, take measurements and optimize purchasing. Staying updated to these changes might be crucial in order to survive in a cost optimizing market where price becomes more important to the end client.

5.3 Dynamic capabilities

All investigated companies display dynamic capabilities in their purchasing. Being in a project-based industry, all companies take actions towards handling spikes in demand. Instead of employing more personnel to fill up the demand for new projects, companies purchase extra capacity in terms of manpower to keep internal occupancy high and mitigate risk associated with less demand in the future - An example that goes in line with the definition of a dynamic capability used in this thesis.

While some companies look at finding substitute products to be dynamic towards environmental change, others focus on having a variety of services and competence within the company. The reason for in-sourcing a wide variety of knowledge is to be dynamic to a cyclic market and use in-house personnel for several areas of expertise during recessions - Another example of being dynamic while demand is changing.

To minimize tied up capital and mitigate potential risk connected to physical resources, all interviewed companies are avoiding storing of materials as much as possible and rather have the suppliers deliver Just-In-Time at site. This purchasing strategy require more planning than bulking goods, stored in a warehouse but is efficient in the way of being flexible to changes in the environment by

not tying up capital.

The entrepreneurial spirit from management is of importance to stay dynamic to change which could be related to the performance of the interviewed companies. Management control and constant understanding is key for good purchasing actions and their ability to sense and seize opportunities is reflected in their purchasing experience and knowledge, making them valuable and possibly rare resources. However, Eisenhardt and Martin (2000) state that competitive advantage in a long-term perspective does not lie in the dynamic capabilities of the company but in the resource configurations.

Finally, none of the companies seem to have created competitive advantage out of the dynamic capabilities but rather use them to stay competitive, achieve evolutionary fitness and not lose market share.

5.4 Resources

From all the interviews conducted it becomes clear that the most important resource in purchasing lies within the purchasing employees and their knowledge. Interviewees have expressed that a professional purchaser can make large financial impact on an SME business in the construction industry.

In line with theory of Ellegaard (2006) the limited resources of the SME do lead to underdeveloped strategic work including purchasing. However, it is clear that the investigated case companies perform strategic purchasing to various extents. From the interviews it also became apparent that there is value in physical capital resources especially in terms of geographic locations as the investigated companies preferred local suppliers as a way of minimizing their risk, especially for the smaller of the case companies. Furthermore, human capital as stated earlier is a very important resource as the purchasing success of SMEs are highly linked to individual competence and skills. According to the empirical findings, a purchaser within an SME should have a wide range of knowledge including business sense, technical knowledge, legal knowledge as well as be good at utilizing value from a network. Looking back at the VRIN model in theory (Barney, 1991), purchasing knowledge can be considered valuable and rare as the purchaser must have many qualities as well as experience and a purchaser's actions could have great potential for the business. Purchasing competence is however imitable as a purchaser can switch company and bring his or her competence along and strategic decisions made can be copied by others. Although rare and valuable, purchasing competence is substitutable, as it is possible to find other professional purchasers. On the contrary, much of the

current purchasing knowledge is stored in the mind of the purchaser at the examined SMEs, making it harder to substitute a purchaser.

As for organizational capital resources importance for SME purchasing, it is essential to have good routines for information sharing between purchasers and other parts of the organisation. Most of the information sharing in the companies were done informally and valuable results not formally documented nor stored. The companies that have purchasing IT-systems in place expressed the system to be a valuable resource as it enabled efficiency and reduced purchasing knowledge tied in personnel.

The case companies demonstrated innovative ways of dealing with scarce resources such as Torpheimergruppen forming a personnel pool and TEAM Skåne Bygg that sent its local suppliers to projects early to detect possible faults in the proposed solution.

5.5 Purchasing strategy

Based on the *SME Strategic Purchasing Framework* the empirical data is analysed together with related theory under each respective element of the framework.

Company corporate strategy and Management priority

The examined case companies all had corporate strategies but less formal purchasing strategies. Their corporate strategies were closely connected to building relationships, minimizing risk and being geographically close to their main clients and suppliers. The purchasing strategies seem to be aligned with the corporate strategies all though it seems possible that what the companies call strategy could very well be just the result of their history and culture. Management has a strong influence on purchasing strategies as all interviewed purchasing managers were either CEOs or owners. Given their important roles in the company they also had great knowledge and experience of the company.

Need Assessment

As Ozmen et al. (2013) states, the purpose of purchasing is to fulfil a company need, a clients' needs and their need drivers, which also decides the most important elements for each purchase. It becomes clear that all investigated companies strive to have the power of deciding which products and what material to be used in an installation even though much of the products and materials are decided by or strongly influenced by the clients. As clients and installations get bigger, the need

stated by clients goes towards less product specificity, making the specialist contractors in charge of what specific products and materials that should be purchased. In order to reduce time spent on administration of purchasing, all investigated companies aims to increase the number of straight rebuys. How they do it varies among the investigated companies. By using its corporate strategy of installing systems rather than products, Rörläggaren can achieve purchasing advantages of taking control of which suppliers to use and what material and products to purchase. In an industry where some clients have great knowledge, this could be a way of taking control since the knowledge gap between the supplier and client is small forcing the supplier to work differently. As compared to KEBAB where many clients are individuals, key is the knowledge advantage towards clients in knowing which materials and products that works best in a cost-efficient way, making it a win-win for both clients and KEBAB. What has been concluded is that creating a purchasing advantage in municipal procurement by making straight rebuys is hard. Since clients usually give a suggestion of an installed product, it takes more time and money for the specialist contractor to suggest another product. Since the specialist contractor has to convince the client that its suggestion is equal to the one the client suggested, the purchasing process might not be as efficient and therefore costlier.

In-sourcing/outsourcing

All companies investigated perform outsourcing as is common in the industry. Looking at the *Outsourcing Matrix* (see Figure 5.1), outsourcing should be performed based on level of competitiveness and its strategic importance. Although being a simplified decision matrix, the case companies also expressed risk mitigation to be very important.

All companies conduct outsourcing of services that are of strategic importance but of low competitiveness located in the lower right corner of the *Outsourcing Matrix*, due to risk. With a current economic industry boom, all companies have full occupancy on their employees yet refrain from employing more personnel and instead outsource to safeguard for future recessions. However, a lack of expressed strategic competence other than core competence by the case companies makes it harder to use the *Outsourcing Matrix* to determine the strategic importance of company functions. Nevertheless, the case companies displayed multiple outsourcing decisions that could be connected to the *Outsourcing Matrix*. In the bottom left corner of the *Outsourcing Matrix* all companies outsourced for example warehousing and delivery of commodities as they indirectly pay for this when purchasing from wholesalers and subcontractors. Furthermore, as an example of the bottom right of the *Outsourcing Matrix* (collaborate/maintain control) KEBAB used a collaborative approach

Figure 5.1: The Outsourcing Matrix (van Weele, 2014, p. 179)

to subcontractor based on long term profit/loss sharing and the top left (Maintain/invest) Rörläggaren invested in a prefab construction that is not yet available in the market. Regarding the upper right corner of the *Outsourcing Matrix*, all companies have most of their main core competences in-house, clearly focusing on scaling up that part of the company and outsource less important competencies.

Some parts of construction are regulatory heavy and associated with many warranties, as a way of further reducing risk, some of the companies outsource these tasks as e.g. outsourcing of bathrooms by KEBAB. Furthermore, one can even argue that the companies that use wholesalers even outsource project planning to various extent as the need for planning decrease when you can have materials delivered on site within less than 24 hours. However, these fast deliveries come at a price and one can also argue that the construction industry is predictable enough to order materials further ahead of time and not pay for the fast deliveries. Another interesting note is that none of the case companies interviewed currently outsource a department or administrative task.

Supply Chain Mapping

None of the interviewed case companies perform any kind of supply chain mapping. However, when speaking to the purchasing managers or CEOs it became apparent that the companies do have good insight of their product, information and transactional flows. The root cause to not preform supply chain mapping can possibly be derived to the less formal purchasing of construction SMEs and that the interviewed purchasing managers or CEOs have worked a long time in both the industry and the company, accumulating the knowledge of a supply chain map.

Edstrand at KEBAB believes that the task is more appropriate for the manufacturing industry as the construction industry does not have a production plant and most is done outside their own office. However, one can argue that since a lot of purchasing knowledge in the examined case companies is not written down, a supply chain map could be a good tool for transferring knowledge and information. Furthermore, an example stated in the interview of Rörläggaren where the company conducted its own manufacturing of prefabricated materials, a strategic business move that turned out to be profitable, could possibly have been identified using a supply chain map. However, being small, the companies have limited resources and purchasing knowledge to perform and harnessing the potential of a supply chain map. All companies did however express a desire to mitigate risk which could advocate for the usage of a supply chain map to find, illustrate, and deal with risk.

Supply Market Analysis

All case companies expressed that they mostly do continuous supply market analysis using word of mouth in the industry. Employees have a network of connections, previous colleagues and employers that they use to gather information. Much of the supply market analysis is conducted based on the client. Many clients only express their needs and it is up to the construction companies to solve what to purchase which sometimes involves looking at new suppliers or technologies. Furthermore, at Rörläggaren and Torpheimergruppen there is an expressed technical interest among project managers that encouraged the purchasing function to look at new suppliers and technologies. However, none of the companies have a systematic approach of gathering supply market information or analysis.

Being positioned close to the end client, all companies described that there were mutual dialogues as well as recurring sales calls from suppliers. Especially the tier two suppliers (selling their products to the wholesalers) communicated frequently about their new products. To further understand the market and its players, all companies purchase market research in the form of trade magazines and

information from industry-specific organisations.

Team Skåne Bygg AB and KEBAB both applied reverse marketing as many of their projects are posted in ”Sverige Bygger”. When a project is posted, suppliers and subcontracts contact them with quotations and recommendations. This is a cost-efficient way of reaching out to new suppliers and understanding the usage of possible substitute products. Furthermore, reverse marketing can possibly help break the traditional relationship loops of the industry and enables communication and offers to be made across otherwise completely new relationships. Municipal procurement has also been identified as a good way of understanding competitors' cost structures and supplier bases.

Category Strategy

As clearly connected to theory from e.g Ozmen et al. (2013) and Paik (2011), all investigated companies value their supplier relationships high. As being a smaller player, it becomes clear that in similarity with theory, trust between suppliers and purchasers become very important. When companies are getting bigger, trust with suppliers is still considered important but the security of deliveries and necessary demands are rather negotiated through contracts and agreements.

Even though some of the investigated companies do quite ad hoc segmentation of products or suppliers, there is limited connection between segmentation and supplier relationships. Since none of the investigated companies do any structured nor systematized segmentation of either products or suppliers, it is hard to draw a conclusion on what type of relationship should be held with suppliers. Theory's suggestion on Kraljic's *Purchasing Portfolio* as a way to understand and handle relationships with suppliers based on type of products is argued to be used for SMEs to optimize their relationships with suppliers in a structured way. As stated by Gelderman and van Weele (2005), the probability of finding the portfolio approach is 2.6 times bigger in a large than a small company which make the lack of usage not very surprising but still not less important.

Even though theory states that a few number of suppliers could potentially benefit SMEs, given the relative limited amount of resources in purchasing, the empirical findings show varieties in number of suppliers between the companies investigated. A reason for that could be because the investigated companies are not working towards the same typ of clients and a large number of suppliers for one company could be argued to be a few in another.

The degree to which companies are purchasing standardized products could be connected to the companies' need identification. Since some companies are working harder to fulfil a need rather than selling products, they have better control of what products are purchased and to what degree

they are standardized. As similar to theory, some of the companies believe that it also helps them minimize the TCO.

Since the segmentation of products are done ad hoc or not at all, the investigation on what type of relationships should be performed will be hard for the investigated companies. Key for the relationship to work, an appropriate level of information sharing must be decided which have been seen in some of the companies. Internal information sharing as well as external information sharing has been confirmed as key for making relationships work. In combination with information sharing, communication has been agreed to be of significant relevance for relationships to strive. All of the investigated companies mention the importance of being able to have straight communication with suppliers, both in order to evaluate and develop suppliers but also as an important factor when choosing suppliers - A great personal relationship with good communication has many times been considered being more important than a supplier's performance. Relationships built partly on trust are considered important for the cases and according to theory, SMEs should put more focus on fair and reasonable relationships instead of only minimizing costs. This have been argued by the companies to be important to secure deliveries in terms of quality, quantity and delivery accuracy which will reduce the TCO and increase the subcontractors' reputation.

Since the power balance in most cases has been considered asymmetric, it is hard to analyse and draw conclusions that are relevant for SMEs in general. Matching as described in theory (Krapfel et al., 1991) will be hard for SMEs to achieve since buyer and seller in these cases usually do not value the relationship similarly. However, signalling has been proved to be of relevance through communication and information sharing where trust can be built in e.g. supplier development. These statements have been considered more accurate for smaller suppliers or subcontractors since wholesalers have a huge power advantage, not only towards SMEs but also towards some of the biggest companies in the market.

To be more accurate on the deliveries and have information of how the suppliers perform, KPIs should be implemented. As understood from the interviews, all companies evaluate their suppliers, mainly not by measurable criteria but rather ad hoc solutions where much is depending on the experience of employees working close with suppliers or subcontractors. These findings are also aligned to what theory states about performance measurement systems for SMEs - being more informal. Since there is a lack of continuity in connecting purchasing strategy to overall strategy, KPIs could help SMEs to align the two to achieve better project performance.

Develop, Manage and Evaluate suppliers

In line with theory (Quayle, 2000), the examined case companies do not work extensively with supplier development. This can possibly be explained by prioritizing their limited resources to internal affairs. However, suppliers are regularly monitored and evaluated. In the two larger companies, Torpheimergruppen and Rörläggaren supplier evaluations are more systematic compared to the others, being more formal and structured measuring and evaluating KPIs. Although the examined case companies collect data on their suppliers, much of the evaluation is based on personal opinions of employees. Personal opinions can often include more parameters than what is measured and create a good evaluation, but it is highly individual, inconsistent and strongly influenced by the personal relationship between buyer and supplier. Suppliers are often chosen based on previous business and inadequate deliveries are most often communicated casually and if improvements are not realised then future business is terminated. Although strategic purchasing decisions are made centrally, the evaluation and monitoring are done decentralised at each project in the examined case companies. This calls for good communication and routines for aggregating supplier information and even documenting the results as most information is stored with the people and not the company.

Supply Chain Integration & TCO

As described in theory by Paik (2011), SMEs in particular can reduce much of their costs by working with total cost of ownership. The examined case companies all perform some part of TCO analysis but mostly on an internal company basis. Being a project-based industry, all of the examined case companies have high costs associated with personnel cost when installing. Therefore, they mostly evaluate and work with TCO in terms of construction time along with quality. When doing an installation, it is more cost efficient to purchase extra material, work with well known, but possibly more expensive suppliers and materials as the opportunity cost is less compared to a project running late or having to redo already finished work as seen from a TCO perspective. The case companies further reduce their costs by pushing risk towards subcontractors. Furthermore, by selling solutions instead of installed products the companies can further use their expertise and correct mistakes early in the project phases and so on also mitigate risk.

5.6 Key Success Factors

When doing the empirical study, it was found that many of the SME characteristics found in the literature review are aligned with the key success factors noted by the interviewees. Noted in the empirical findings was the importance of communication, cooperation and trust as also stated by Ozmen et al. (2013) and Paik (2011) but also the importance of having close relationships and shared values with the suppliers which Ozmen et al. (2013) mentions in their article.

There are many similarities between the examined case companies possibly derived from the fact that the companies are working within the same industry and that they are classified as SMEs. All companies work extensively with outsourcing towards subcontractors and try to push risk towards their suppliers. Some noted that risk mitigation is so important that even core competencies can be outsourced in order to reduce cost and stay competitive. All companies have expressed trust as an important factor when choosing suppliers (see table 4.1) but have during growth of the company become less important even though still necessary which could be aligned with what Pressey et al. (2009) said about trust as being more important for SMEs than larger firms. Purchasing extends beyond the responsible purchaser as there is important communication in all companies between the purchaser and the operational functions.

It becomes clear that the relationship with suppliers is important as many of the case companies value certain important attributes, e.g. KEBAB wanting suppliers that are willing to share profit/loss and TEAM Skåne Bygg valuing suppliers that can visit the site and detect problems in the early stages of the project. This can be related to the theories suggested by Ozmen et al. (2013) of shared values between buyer and suppliers.

Another important aspect noted is that valuable information related to purchasing is collected using word of mouth and that much technical information regarding the installation of products is located at the specific sites. This calls for a good base of communication sharing this information internally. Also the supplier development that is taken place if often carried out very informally which further strengthens the need for communications skills and informal processes.

6
Conclusion

This chapter contains the conclusion of the master thesis. First, the main research question and the sub-research questions are presented, followed by future research and theoretical contribution.

6.1 RQ: How should SMEs in the construction and specialist contractor industry work with purchasing and supply strategies?

By using the *SME Purchasing Cloud* and the *SME Strategic Purchasing Framework* we believe that SMEs in the construction and specialist contractor industry can structure and improve their purchasing and supply strategies. The frameworks are the result of a theoretical analysis and further tested through four empirical case investigations to find flaws and improvements. No changes have been made to the structure of the frameworks after the empirical tests were concluded and analysed but critical success factors have been identified. An overview of the frameworks are presented in Figure 6.1.

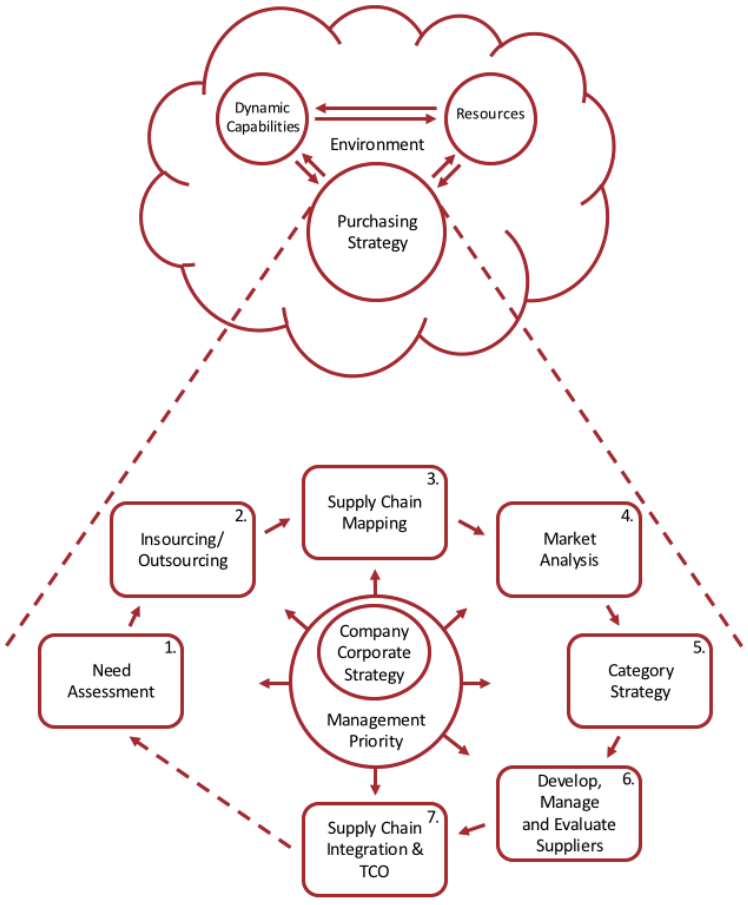

Figure 6.1: The SME Purchasing Cloud and the SME Strategic Purchasing Framework

6.1.1 SUB RQ 1: Which aspects from current research of purchasing strategies developed for large companies are relevant for SMEs in the construction and specialist contractor industry?

The *SME Purchasing Cloud* and sub framework the *SME Strategic Purchasing Framework* are conducted as results of the literature review and covers the relevant aspects in purchasing for SMEs in the specialist contractor and construction industry. Important aspects of each element of the frameworks are presented below.

Environment

The surrounding business environment affects purchasing in construction SMEs where they have little influence on these changes. Therefore, it is important to evaluate changes and be responsive. Information could be gathered from word of mouth with clients, suppliers and competitors as well as the network that employees have. Environment analyses can also successfully be purchased from trade magazines and/or industry organisations. The PESTEL framework of environmental change covers the most important environmental factors that SMEs need to stay updated on. While doing international purchasing, environmental factors as economic, political and social should be even deeper considered since they have shown more impact on change compared to national purchasing. The effect of digitalization has shown both improvements in strategic purchasing actions but also reduced the time for evaluation of offers which might not always have been good. As SMEs grow, the advantages of implementing IT-systems for purchasing become clearer and should be considered to stay competitive.

Dynamic capabilities

Dynamic capabilities are critical in order to respond to the ever-changing macro environment since it has been noted that it is as important for SMEs to work with dynamic capabilities as it is for large companies. Dynamic capabilities have been found essential for creating and sustaining a purchasing strategy that responds to environmental changes in order to survive in the competing market but also as a tool to create competitive advantage. SMEs can because of their limited size be even more adaptive and take advantage of its dynamic capabilities.

Resources

Company resources are very important to take into account when formulating purchasing strategy. It has been noted that human capital is of outmost importance for successful development of purchasing strategies in construction SMEs in the form of knowledge, personal networks and experience. Three important characteristics for a good purchaser as an important resource is having a business sense, technical knowledge and legal knowledge. However, we believe there is a large risk of having the most crucial purchasing resource in employees. Instead, to mitigate such risk, SMEs should consider the option of transferring that resource into the company structure, systems or documents.

Purchasing Strategy

The SME Strategic Purchasing Framework was developed from theories for large companies complemented with theories of SMEs and later tested empirically. The framework is no panacea but a way of working with purchasing strategies in construction SMEs. By combining company strategy and management priority each step should be performed using enterprise specific conditions to achieve a formulated strategy of purchasing. First, a *Need Assessment* must be made in order to source the right goods and to influence the need in favour of the company. Then a decision of which goods or services are to be acquired through *In-sourcing or Outsourcing* and when to choose which. Following that, *Supply Chain Mapping* will enable the SME to understand the current flow of goods, information and transactions. After, the supply chain map, a *Supply Market Analysis* should be gathered from the companies network and word of mouth to understand the possible potential basis of redesign. Based on the previous gathered information and decisions a *Category Strategy* is to be established for each decided segment of goods or service. Strategic decisions regarding type of supplier, standardization, relationship and information sharing is to be established for each category. Following that, the company should *Develop, Manage and Evaluate Suppliers* and set up strategies for how, with whom and to which extent it should be done. Ultimately the company should look towards *Supply Chain Integration and TCO* to further improve purchasing and get a holistic approach to the whole process.

6.1.2 SUB RQ 2: What have been the critical success factors for SMEs in the construction and specialist contractor industry to succeed with purchasing and supply strategies?

In general, it has become clear that SMEs in the construction and specialist construction industry will perform better with their purchasing and supply strategies by emphasizing four critical success factors in the two frameworks. These success factors are:

- Sustaining and evaluating relationships with suppliers
- Build trust between suppliers and buyers
- Develop and maintain a good base for communication
- Focus on risk mitigation in order to stay competitive

Sustaining and evaluating relationships with suppliers has been considered critical for SMEs to keep purchasing prices down and supplier performance high. By creating healthy relationships with suppliers, SMEs are considered being more likely to survive in a competitive market.

The most critical success factor for SMEs in general and SEs especially is to *build trust between suppliers and buyers*. In order to stay competitive in a cyclic industry and survive during recessions, a trust-based relationship between suppliers and buyers has been identified to be critical for SEs. As SEs grow bigger, the importance of the critical success factor decreases but will not vanish.

Develop and maintain a good base for communication is critical both internally between employees and externally between suppliers and buyers. Since evaluation of suppliers and purchasing management has been identified to be done by different roles in SMEs, clear and straight forward communication is key for having a successful and well-performing supplier base. Great communication between suppliers/subcontractors and buyers will strengthen the relationship between the two and create mutual gain since improvements of the supplier and demands from the buyer are evaluated through eloquently communication.

Since the industry is cyclic, a key variable is to *focus on risk mitigation in order to stay competitive*. By creating competitive advantage as a result of using dynamic capabilities, SMEs can reduce risk caused by changes in market demand.

6.2 Future Research

For further research in the subject, one could argue that more cases could be investigated in order to get more practical examples of critical success factors and understand the industry better even though we consider we have reached data saturation. Key success factors are important in order to complete the model and go more operational which is why the area could be more investigated and tested.

To get a better longitudinal view of the case companies, one could make a study over a longer time to follow the actual development of companies and make sure the empirical data gathered is consistent with the actual point in time. Something we could not do due to the time constraints.

Another possible future research approach could be to investigate the use of the conducted model in other industries or fields to further generalize the model for SMEs. By looking at SEs or MEs specifically, one could probably develop the model even more to be more accurate for the mentioned sizes of companies.

Since the theoretical area of SME purchasing is still very limited, there are many interesting topics that could contribute to existing theory. Much needs to be investigated in order to make SMEs perform better and make more of them survive for a longer time. By creating theoretical contributions, more SMEs can hopefully cross some of the bumps on the road without falling over.

6.3 Theoretical Contributions

A theoretical contribution is made in the form of a strategic purchasing model, the *SME Purchasing Cloud* and sub framework, the *SME Strategic Purchasing Framework* as well as critical success factors for SME purchasing in the construction and specialist contractor industry.

The *SME Purchasing Cloud* is influenced by Bildsten (2013) but our model focuses on purchasing and SME aspects in each sub category.

Our sub framework the *SME Strategic Purchasing Framework* is based of the work of van Weele (2014, p. 158) but is distinguish by expanded SME aspects such as the importance of SME management in the form of the *Management priority* as expressed by Ozmen et al. (2013) and the need to align purchasing with *Company corporate strategy* argued by Watts et al. (1995) and Näslund (2013). The model is also expanded with aspects of *Need assessment* and *Supply chain mapping* as well as a slightly changed content of the different steps. *Need assessment* is included as it is argued by Ozmen et al. (2013) and Quayle (2002) to be an important aspects for SMEs. *Supply chain mapping* is

included based on the more ad hoc purchasing in SMEs identified by Paik (2011) and is important for the redesign as well as sharing of information otherwise only stored in the purchasing manager/owners mind of the SME. With the evaluation of the model and framework throughout the empirical study, the elements of the two are argued to be relevant for SMEs in the construction and specialist contractor industry as a contribution to theory.

Based on the limited theory to be found on SME purchasing we believe that our contributions can help SMEs to understand and structure their purchasing strategies better.

References

Abdul-Halim, H., Hazlina Ahmad, N., and Ramayah, T. (2012). Unveiling the motivation to outsource among smes. *Business Strategy Series*, 13(4):181–186.

Al Yahya, M., Skitmore, M., Bridge, A., Nepal, M., and Cattell, D. (2018). e-tendering readiness in construction: the posterior model. *Construction Innovation*, 18(2).

Alliance, F. (2017). Årets unga entreprenör – hugo larsson och linus werner, save-by-solar sweden.

Andrews, K. R. (1971). The concept of corporate strategy. *New York*.

Barney, J. (1991). Firm resources and sustained competitive advantage. *Journal of management*, 17(1):99–120.

Bensaou, M. (1999). Portfolios of buyer-supplier relationships. *MIT Sloan Management Review*, 40(4):35.

Bildsten, L. (2013). Implications for strategy in industrialized house-building: a longitudinal case study. *Proceedings of the 7th Nordic Conference on Construction Economics and Organization, Trondheim, Norway*, pages 239–246.

Bildsten, L. (2016). *Purchasing in Construction Companies*. PhD thesis, Division of Construction Management, Department of Building and Environmental Technology, Lund University.

Bildsten, L. and Manley, K. (2015). A framework for understanding purchasing in building construction companies. *Construction Management and Economics*, 33(11-12):865–879.

Björnfot, A. and Torjussen, L. (2012). Extent and effect of horizontal supply chain collaboration among construction sme. *Journal of Engineering, Project, and Production Management*, 2(1):47.

Business Retreiver (2018). Årsbokslut företag Torpheimergruppen AB, Rörläggaren AB, Team Skåne Bygg AB, Knut Edstrand Byggnads AB. Url: http://web.retriever-info.com/services/businessinfo/displaySelectedCompanies. Accessed on 2018-04-15.

Cannon, J. P. and Homburg, C. (2001). Buyer-supplier relationships and customer firm costs. *Journal of Marketing*, 65(1):29–43.

Carr, A. S. and Pearson, J. N. (1999). Strategically managed buyer–supplier relationships and performance outcomes. *Journal of operations management*, 17(5):497–519.

Chan, A. P. and Chan, A. P. (2004). Key performance indicators for measuring construction success. *Benchmarking: an international journal*, 11(2):203–221.

Croom, S., Romano, P., and Giannakis, M. (2000). Supply chain management: an analytical framework for critical literature review. *European journal of purchasing & supply management*, 6(1):67–83.

Da Mota Pedrosa, A., Näslund, D., and Jasmand, C. (2012). Logistics case study based research: towards higher quality. *International Journal of Physical Distribution & Logistics Management*, 42(3):275–295.

Day, G. S. (1990). *Market Driven Strategy: Processes for Creating Value*. Free Press.

Dyer, J. H., Cho, D. S., and Cgu, W. (1998). Strategic supplier segmentation: The next "best practice" in supply chain management. *California management review*, 40(2):57–77.

Edstrand, J. (2018). private interview. Interview conducted at May 3rd 2018.

Eisenhardt, K. M. and Graebner, M. E. (2007). Theory building from cases: Opportunities and challenges. *Academy of management journal*, 50(1):25–32.

Eisenhardt, K. M. and Martin, J. A. (2000). Dynamic capabilities: what are they? *Strategic management journal*, 21(10/11):1105–1121.

Ellegaard, C. (2006). Small company purchasing: A research agenda. *Journal of purchasing and supply management*, 12(5):272–283.

Elliott-Shircore, T. and Steele, P. (1985). Procurement positioning overview. *Purchasing and Supply Management, December*, 23:26.

Ellram, L. M. (1996). The use of the case study method in logistics research. *Journal of business logistics*, 17(2):93.

European-Commission (2017). Annual report on european smes 2016/2017. Technical report, European Commission, Directorate-General for Internal Market, Industry, Entrepreneurship and SMEs. doi: 10.2873/742338, authors: Patrice Muller, Jenna Julius, Daniel Herr, Laura Koch, Viktoriya Peycheva, Sean McKiernan.

Gardner, J. T. and Cooper, M. C. (2003). Strategic supply chain mapping approaches. *Journal of Business Logistics*, 24(2):37–64.

Garengo, P., Biazzo, S., and Bititci, U. S. (2005). Performance measurement systems in smes: A review for a research agenda. *International journal of management reviews*, 7(1):25–47.

Gay, G. (2002). Audit risk reduction. *Australian CPA*, 72(2):68–68.

Gelderman, C. J. and van Weele, A. J. (2005). Purchasing portfolio models: a critique and update. *Journal of Supply Chain Management*, 41(3):19–28.

Gelinas, R. and Bigras, Y. (2004). The characteristics and features of smes: favorable or unfavorable to logistics integration? *Journal of Small Business Management*, 42(3):263–278.

Håkansson, H., Havila, V., and Pedersen, A.-C. (1999). Learning in networks. *Industrial Marketing Management*, 28(5):443–452.

Haveman, H. A. (1992). Between a rock and a hard place: Organizational change and performance under conditions of fundamental environmental transformation. *Administrative Science Quarterly*, 37(1):48–75.

Höst, M., Regnell, B., and Runeson, P. (2006). *Att genomföra examensarbete*. Studentlitteratur AB.

Johnson, G., Scholes, K., and Whittington, R. (2009). *Fundamentals of strategy*. Pearson Education.

Kor, Y. Y. and Mahoney, J. T. (2004). Edith penrose's (1959) contributions to the resource-based view of strategic management. *Journal of management studies*, 41(1):183–191.

Kovács, G. and Spens, K. M. (2005). Abductive reasoning in logistics research. *International Journal of Physical Distribution & Logistics Management*, 35(2):132–144.

Kraljic, P. (1983). Purchasing must become supply management. *Harvard business review*, 61(5):109–117.

Krapfel, R. E., Salmond, D., and Spekman, R. (1991). A strategic approach to managing buyer-seller relationships. *European Journal of Marketing*, 25(9):22–37.

Lilliecreutz, J. and Ydreskog, L. (2001). Supplier classification as an enabler for a differentiated purchasing strategy. *Best Practice Procurement: Public and Private Sector Perspective*, 8:73–81.

Lockett, A. and Thompson, S. (2001). The resource-based view and economics. *Journal of management*, 27(6):723–754.

Love, P. E. and Irani, Z. (2004). An exploratory study of information technology evaluation and benefits management practices of smes in the construction industry. *Information & Management*, 42(1):227–242.

Luffman, G. (1996). *Strategic management: An analytical introduction*. Tyndale House.

Lynch, R. (1997). *Corporate Strategy*. Pitman Publishing.

Mark, S., Philip, L., and Adrian, T. (2009). Research methods for business students.

Mason, J. R. (2007). The views and experiences of specialist contractors on partnering in the uk. *Construction Management and Economics*, 25(5):519–527.

Miles, M. B., Huberman, A. M., and Saldana, J. (2014). Qualitative data analysis: A method sourcebook. *CA, US: Sage Publications*.

Mogre, R., Lindgreen, A., and Hingley, M. (2017). Tracing the evolution of purchasing research: future trends and directions for purchasing practices. *Journal of Business & Industrial Marketing*, 32(2):251–257.

Monczka, R. M., Handfield, R. B., Giunipero, L. C., and Patterson, J. L. (2015). *Purchasing and supply chain management*. Cengage Learning.

Näslund, D. (2013). Lean and six sigma–critical success factors revisited. *International Journal of Quality and Service Sciences*, 5(1):86–100.

Nudurupati, S. S., Bititci, U. S., Kumar, V., and Chan, F. T. (2011). State of the art literature review on performance measurement. *Computers & Industrial Engineering*, 60(2):279–290.

Olsen, R. F. and Ellram, L. M. (1997). A portfolio approach to supplier relationships. *Industrial marketing management*, 26(2):101–113.

Oxford Dictionaries (2018). Oxford University Press, 2018. Url: https://en.oxforddictionaries.com/. Accessed on 2018-02-11.

Ozmen, E. S., Oner, M. A., Khosrowshahi, F., and Underwood, J. (2013). Sme buying behaviour: Literature review and an application agenda. *The Marketing Review*, 13(2):207–227.

Paik, S.-K. (2011). Supply management in small and medium-sized enterprises: role of sme size. *Supply Chain Forum: An International Journal*, 12(3):10–21.

Pardo, C., Missirilian, O., Portier, P., and Salle, R. (2011). Barriers to the "key supplierization" of the firm. *Industrial Marketing Management*, 40(6):853–861.

Pearson, J. N. and Ellram, L. M. (1995). Supplier selection and evaluation in small versus large electronics firms. *Journal of Small Business Management*, 33(4):53.

Persson, P. (2018). private interview. Interview conducted at April 26th 2018.

Peteraf, M. A. (1993). The cornerstones of competitive advantage: A resource-based view. *Strategic management journal*, 14(3):179–191.

Pressey, A. D., Winklhofer, H. M., and Tzokas, N. X. (2009). Purchasing practices in small-to medium-sized enterprises: An examination of strategic purchasing adoption, supplier evaluation and supplier capabilities. *Journal of purchasing and supply management*, 15(4):214–226.

Quayle, M. (2000). Supplier development for uk small and medium-sized enterprises. *Journal of Applied Management Studies*, 9(1):117–133.

Quayle, M. (2002). Purchasing in small firms. *European Journal of Purchasing & Supply Management*, 8(3):151–159.

Quinn, J. B. and Hilmer, F. G. (1994). Strategic outsourcing. *Sloan management review*, 35(4):43–55.

Robinson, P. J., Faris, C. W., and Wind, Y. (1967). *Industrial buying and creative marketing*. Allyn and Bacon.

Rowley, J. and Slack, F. (2004). Conducting a literature review. *Management research news*, 27(6):31–39.

Ruiz-Torres, A. J. and Mahmoodi, F. (2007). The optimal number of suppliers considering the costs of individual supplier failures. *Omega*, 35(1):104–115.

Rummler, G. A. and Brache, A. P. (1991). Managing the white space. *Training*, 28(1):55–70.

Sachan, A. and Datta, S. (2005). Review of supply chain management and logistics research. *International Journal of Physical Distribution & Logistics Management*, 35(9):664–705.

Sanchez, R. and Heene, A. (1997). Managing for an uncertain future: A systems view of strategic organizational change. *International Studies of Management & Organization*, 27(2):21–42.

Sánchez-Rodríguez, C., Hemsworth, D., Martínez-Lorente, Á. R., and Clavel, J. G. (2006). An empirical study on the impact of standardization of materials and purchasing procedures on purchasing and business performance. *Supply Chain Management: An International Journal*, 11(1):56–64.

SavebySolar (2018 (Retrieved January 23rd, 2018)a). *Om oss*. https://savebysolar.se/om-oss/.

SavebySolar (2018 (Retrieved January 23rd, 2018)b). *Vårt koncept*. https://savebysolar.se/vart-koncept/.

Smith, K. G. and Grimm, C. M. (1987). Environmental variation, strategic change and firm performance: A study of railroad deregulation. *Strategic Management Journal*, 8(4):363–376.

Strandborg, J. (2018). private interview. Interview conducted at April 25th 2018.

Syson, R. (1992). *Improving purchase performance*. Pitman.

Teece, D. J. (2007). Explicating dynamic capabilities: the nature and microfoundations of (sustainable) enterprise performance. *Strategic management journal*, 28(13):1319–1350.

The Commission of the European Communities (2003). Commission recommendation of 6 may 2003 concerning the definition of micro, small and medium-sized enterprises. Technical report.

Torpheimer, L.-G. (2018). private interview. Interview conducted at April 24th 2018.

Van Ackere, A., Larsen, E. R., and Morecroft, J. D. (1993). Systems thinking and business process redesign: an application to the beer game. *European Management Journal*, 11(4):412–423.

van Weele, A. J. (2014). *Purchasing and supply chain management: Analysis, strategy, planning and practice*. Cengage Learning, Hampshire.

Walsh, P. R. (2005). Dealing with the uncertainties of environmental change by adding scenario planning to the strategy reformulation equation. *Management Decision*, 43(1):113–122.

Watts, C. A., Kim, K. Y., and Hahn, C. K. (1995). Linking purchasing to corporate competitive strategy. *Journal of Supply Chain Management*, 31(1):2–8.

Wieters, D. and Ostrom, L. (1977). Maintaining effective suppliers: a small business approach. *Journal of Small Business Management (pre-1986)*, 15(4):44.

Wilson, D. F. (2000). Why divide consumer and organizational buyer behaviour? *European Journal of Marketing*, 34(7):780–796.

Yin, R. K. (2017). *Case Study Research and Applications: Design and Methods*. Sage Publications.

A

Data Collection Protocol

Objectives and Potential Issues - Mål och Potentiella Problem

Målet är att kunna testa vår modell (the SME Purchasing Cloud) som tagits fram från befintlig teori och se om den går att applicera på SMEs i installationsbranschen som jobbar mot företag i byggnadsbranschen. Målet är även att anpassa modellen efter vad som kommit fram i de empiriska intervjuerna. Potentiella problem kan vara att frågorna kan uppfattas på andra sätt än vad som är tänkt från början. Det finns också en svårighet i att vara följsam i intervjuguiden om intervjupersonen redan delvis eller helt besvarat en fråga. Att inte följa intervjuguiden gör det svårare att jämföra de olika svaren.

The Procedures of Data Collection - Datainsamlingsförfarande

Empirisk data samla in systematiskt genom fyra semi-strukturerade intervjuer med fyra fallföretag á två timmar. Insamlad data presenteras sedan i individuella rapporter för varje fallföretag för att sedan analyseras mot den teoretiska modellen.

The Protocol Questions - Intervjuguiden

Inledande frågor (filter-/kontrollfrågor)

- Vilka varor/tjänster köper ni in?
- Var köper ni era varor/tjänster och i vilka kvantiteter?
- Ungefär hur stora är era kostnader för inköp i förhållande till era intäkter (COGS)?
- Har det sett likadant ut över tid?
- Hur länge har du varit involverad i företagets inköp och vad har din roll haft för påverkan på hur ni jobbat med inköp över tid?

Generella frågor

- Jobbar ni idag strategiskt med inköp?
- När började ni med det och hur stora var ni då räknat i omsättning och personal?
- Anser du att det varit viktigt att jobba strategiskt med inköp under er tillväxtresa?
- Jobbar ni standardiserat i er inköpsprocess?
- Finns det nedskrivet eller digitalt?
- Vilka för- och nackdelar ser du att det finns kopplade till att ha varit en mindre aktör på marknaden?

- Hur har ni utnyttjat/tacklat det?
- Hur är ni i förhållande till era konkurrenter?
- Finns det några specifika framgångsfaktorer kopplade till inköp du vill lyfta som har hjälpt att ta er dit ni är idag?
- Gör ni några inköp utanför Sverige?
- Hur upplever ni att det är att jobba med jämfört med nationella?
- Hur har digitaliseringen spelat in i era inköp?

Environment

- Hur gör ni för att hålla er uppdaterade på förändringar i omgivningen?
- Vilka är de viktigaste omvärldsfaktorerna att hålla koll på? T.ex. faktorer som politiska, ekonomiska, sociala, teknologiska, ekologiska eller legala.
- Har ert arbetssätt förändrats med tiden?
- Har du något exempel på när en sådan förändring har skett?
- Hur agerade ni?

Dynamic Capabilities

- Hur gör ni er flexibla mot förändringar i omvärlden?
- Hur viktigt är det för er?

Resources

- Har ni några resurser som är extra viktiga för att ni ska lyckas med inköp? T.ex. fysiska resurser, personal, sätt att arbeta på, etc.
- Känner du att ni är eller har varit begränsade till att skaffa er viktiga resurser på grund av er storlek, historiskt?
- Kan det ha påverkat hur ni jobbar strategiskt med inköp?

Company Corporate Strategy och Management Priority

- Är inköpsstrategin kopplad till den övergripande strategin på något sätt?
- Hur? Har den alltid varit det?

- Är företagsledningen involverad i inköp? I vilken mån och på vilket sätt?
- Har det förändrats över tid?

Need Assessment

- Vad är det som avgör vilka produkter/tjänster ni köper in? Kundbehov/interna beslut?
- Köper ni ofta samma produkter från samma leverantör eller är det ofta köp av nya produkter från nya leverantörer?
- Har det ändrats över tid?

Insourcing/Outsourcing

- Outsourcar ni några av era aktiviteter i dagsläget? T.ex. extern personal etc.
- Hur tar ni beslut om ni ska outsourca eller göra saker själva?
- Hur har det förändrat sig?

Supply Mapping & Market Analysis

- Kartlägger ni era flöden på något sätt? Gör ni något för att förstå era inköpsflöden bättre?
- T.ex. kartlägger hur information, transaktioner och varor flödar.
- Gör ni någon typ av marknadsanalys?
- Varor och tjänster? Leverantörer? System?
- Hur gör ni i så fall och varför?
- Hur har det förändrats?

Category Strategy

- Har ni egna lager eller levereras varor direkt till installationsplats från leverantör/grossist?
- Segmenterar ni era leverantörer och/eller produkter på något sätt för att förenkla inköp?
- Hur har det ändrat sig över tid?
- Jobbar ni på olika sätt mot olika leverantörer? T.ex. relationer, partnerskap etc.
- Hur ser det ut i så fall?
- I genomsnitt – Hur många leverantörer jobbar ni med för respektive produkt?

- Köper ni mycket kundanpassade produkter eller är det till stor del standardiserade produkter?
- Är det ett strategiskt beslut?
- Är era förhållanden med leverantörer jämställda? (Upplevde maktbalanser - hur leverantörer väljer att prioritera er jämfört med andra större kunder)
- Hur har det förändrats över tid?

Develop, Manage and Evaluate Suppliers

- Hur jobbar ni för att utvärdera leverantörer? Utveckla leverantörssamarbeten etc.
- Hur mäter ni era leverantörers prestation?
- Hur avgör ni vilka leverantörer ni vill utveckla samarbetet med?
- Jobbar ni med några speciella verktyg eller system för utvärdering?
- Hur har det förändrats över tid?

SCI & TCO

- Hur jobbar ni för att få ett helhetsperspektiv (supply chain-perspektiv) på inköpen? Tex. TCO.
- Har det ändrats över tid?
- Hur ser livscykelperspektivet ut för produkterna ni installerar? Både för det egna företaget, miljön och för kunden som ni levererar till? T.ex. erbjuder service efter installation till kunderna.

Övriga frågor

- Är det något som du tycker är viktigt som du vill säga eller som du inte tycker vi berört kopplade till leverantörsstrategi och inköp?
- Du har vår mail och telefonnummer om det skulle vara något mer du kommer på, då får du gärna kontakta oss. Om vi själva kommer på något som vi har missat, kan vi då höra av oss?
- Vill ni vara anonyma eller kan vi använda ert företagsnamn i arbetet?

Tentative Outline for the Report

- Company Introduction
- Environment
- Dynamic Capabilities
- Resources
- Purchasing Strategy

B

Number of publications of SME purchasing

Number of publications of SME purchasing

The collected data of publications of SME purchasing was gathered from Scopus and Google Scholar. The keywords used where SME or Small and Medium sized enterprises along with either or all of the following words, purchasing, supply management or procurement. For Scopus, all publications are shown that include the keywords in Article title, Abstract or Keywords. For Google Scholar all publications with the keywords in the heading are included. The collected data is presented in the table B.1 below .

Year	Scopus	Google Scholar
1996	3	0
1997	3	0
1998	2	0
1999	0	0
2000	0	2
2001	0	0
2002	2	0
2003	3	3
2004	2	3
2005	0	1
2006	6	0
2007	7	1
2008	2	2
2009	7	2
2010	3	2
2011	8	4
2012	3	5
2013	9	2
2014	8	8
2015	2	7
2016	10	11
2017	5	8
2018	3	1

Table B.1: Publications per year