SOURCING STRATEGIES AND SUPPLIER RELATIONSHIPS

- A comparative study of manufacturing companies in the Swedish construction and the white goods industries

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ABSTRACT


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Title: Sourcing strategies and supplier relationships - A comparative study of manufacturing companies in the Swedish construction and the white goods industries.

Background: In manufacturing companies purchasing is a great part of the total cost and major suppliers have a decisive role for the company. Therefore it is important to emphasise the selection and relationship with these suppliers to make the organization profitable. Sourcing strategies and supplier relationships are the main elements of supplier management.

Purpose: The main goal of this study is to underline the similarities and differences regarding sourcing strategies and supplier relationships among the manufacturers of the two industries in order to identify the best practices and possibilities for knowledge transfer.

Methodology: This thesis is a descriptive comparative study that was conducted with a deductive approach. Data was collected by interviews of mainly purchasing managers of our studied companies, annual reports and web pages of the companies. The scientific credibility of this thesis was secured by using many sources and avoiding assumptions.

Conclusions: Several similarities and differences have been found between the industries. Furthermore, both industries can learn from each other when it comes to the use of sourcing strategies and supplier relationships.

Suggestions on future research: A more extensive study with more companies in each industry can be made to strengthen our conclusions. Furthermore, scenario simulations can be conducted for the supply of products and see how a manufacturing company can be affected.
ACKNOWLEDGEMENT

Writing this thesis has been both interesting and challenging. It has also given us insight and knowledge about sourcing strategies and supplier relationships in the construction and white goods industry.

First of all we would like to thank the purchasing managers Marcus Holtz at NCC Construction Sweden, Mikael Johansson at PEAB and the manager portfolio interior Per Stark at Skanska Sweden from the construction industry. Furthermore we would like to thank the purchasing managers Jan Svensson at Electrolux Laundry Systems Sweden, Peter Jonsson at Asko Appliances and the purchaser Ola Jonsson at Whirlpool Sweden from the white goods industry for answering our questions. Without them, this thesis would not have been possible to accomplish.

Secondly we would like to thank our tutors, Petra Andersson and Åsa Gustafsson and our examiner, Helena Forslund for their guidance and feedback throughout the ten weeks of writing. Additionally, we would like to thank our opponents for their relevant feedback and constructive criticism throughout the work of this thesis.

Växjö, 29th of May 2009

___________________      ____________________ __ __________________
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# TABLE OF CONTENTS

1. INTRODUCTION .................................................................................................................. - 1 -
   1.1 BACKGROUND .............................................................................................................. - 1 -
   1.2 PROBLEM DISCUSSION ............................................................................................. - 3 -
   1.3 RESEARCH QUESTIONS ............................................................................................. - 6 -
   1.4 PURPOSE .................................................................................................................... - 6 -
   1.5 DISPOSITION OF THE THESIS .................................................................................. - 7 -
   1.6 TIME SCHEDULE ....................................................................................................... - 8 -

2. METHODOLOGY ................................................................................................................ - 9 -
   2.1 SCIENTIFIC PERSPECTIVE ....................................................................................... - 9 -
   2.2 SCIENTIFIC APPROACH .......................................................................................... - 10 -
   2.3 RESEARCH METHOD ................................................................................................ - 11 -
   2.4 RESEARCH DESIGN ................................................................................................... - 12 -
   2.5 EMPIRICAL DATA COLLECTION ............................................................................... - 13 -
   2.6 SAMPLING ................................................................................................................ - 15 -
   2.7 SCIENTIFIC CREDIBILITY ....................................................................................... - 16 -
   2.8 GENERALIZATION .................................................................................................... - 18 -
   2.9 SUMMARY OF OUR METHODOLOGICAL CHOICES ............................................... - 18 -

3. THEORY ................................................................................................................................ - 19 -
   3.1 SOURCING STRATEGIES ........................................................................................... - 19 -
      3.1.1 Overview of sourcing strategies ......................................................................... - 19 -
      3.1.2 Different types of sourcing strategies ................................................................. - 20 -
   3.2 SUPPLIER RELATIONSHIP MANAGEMENT ............................................................ - 25 -
      3.2.1 An overview of supplier relationships ................................................................. - 25 -
      3.2.2 Types of supplier relationships .......................................................................... - 27 -
   3.3 KRALJIC’S MATRIX ................................................................................................... - 30 -
   3.4 OUR ANALYSIS MODEL ........................................................................................... - 33 -

4. EMPIRICAL DATA ............................................................................................................... - 34 -
   4.1 PEAB ........................................................................................................................... - 34 -
      4.1.1 Sourcing strategies ............................................................................................ - 35 -
      4.1.2 Supplier relationships ....................................................................................... - 36 -
   4.2 NCC CONSTRUCTION SWEDEN ............................................................................ - 37 -
      4.2.1 Sourcing strategies ............................................................................................ - 38 -
      4.2.2 Supplier relationships ....................................................................................... - 39 -
   4.3 SKANSKA SWEDEN .................................................................................................. - 40 -
      4.3.1 Sourcing strategies ............................................................................................ - 40 -
      4.3.2 Supplier relationships ....................................................................................... - 41 -
   4.4 ELECTROLUX LAUNDRY SYSTEMS SWEDEN .................................................... - 42 -
      4.4.1 Sourcing strategies ............................................................................................ - 43 -
      4.4.2 Supplier relationships ....................................................................................... - 44 -
   4.5 ASKO APPLIANCES .................................................................................................. - 46 -
      4.5.1 Sourcing strategies ............................................................................................ - 47 -
      4.5.2 Supplier relationships ....................................................................................... - 48 -
   4.6 WHIRLPOOL SWEDEN ............................................................................................... - 49 -
      4.6.1 Sourcing strategies ............................................................................................ - 50 -
      4.6.2 Supplier relationships ....................................................................................... - 51 -

5. ANALYSIS .......................................................................................................................... - 52 -
   5.1 SOURCING STRATEGIES ........................................................................................... - 53 -
      5.1.1 PEAB ..................................................................................................................... - 53 -
      5.1.2 NCC Construction Sweden .............................................................................. - 54 -
      5.1.3 Skanska Sweden ................................................................................................. - 55 -
      5.1.4 Electrolux Laundry Systems Sweden ............................................................... - 57 -
      5.1.5 ASKO Appliances ............................................................................................... - 58 -
# TABLE OF FIGURES

<table>
<thead>
<tr>
<th>Figure</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Figure 1.1</td>
<td>Perceived and actual divided costs in manufacturing companies</td>
<td>2</td>
</tr>
<tr>
<td>Figure 1.2</td>
<td>Overview of our investigation</td>
<td>6</td>
</tr>
<tr>
<td>Figure 1.3</td>
<td>Disposition of the thesis</td>
<td>7</td>
</tr>
<tr>
<td>Figure 1.4</td>
<td>Time frame</td>
<td>8</td>
</tr>
<tr>
<td>Figure 2.1</td>
<td>Comparison between companies within and between the two industries</td>
<td>12</td>
</tr>
<tr>
<td>Figure 2.2</td>
<td>Overview of our interviews</td>
<td>14</td>
</tr>
<tr>
<td>Figure 2.3</td>
<td>Summary of our methodological choices</td>
<td>18</td>
</tr>
<tr>
<td>Figure 3.1</td>
<td>Types of sourcing strategies</td>
<td>20</td>
</tr>
<tr>
<td>Figure 3.2</td>
<td>Supply strategies for different product types</td>
<td>21</td>
</tr>
<tr>
<td>Figure 3.3</td>
<td>Sole sourcing</td>
<td>22</td>
</tr>
<tr>
<td>Figure 3.4</td>
<td>Single group sourcing</td>
<td>23</td>
</tr>
<tr>
<td>Figure 3.5</td>
<td>Multiple sourcing</td>
<td>24</td>
</tr>
<tr>
<td>Figure 3.6</td>
<td>Hybrid sourcing</td>
<td>25</td>
</tr>
<tr>
<td>Figure 3.7</td>
<td>The main differences between traditional and partnership relationships</td>
<td>26</td>
</tr>
<tr>
<td>Figure 3.8</td>
<td>A framework for buyer-supplier relationship types</td>
<td>29</td>
</tr>
<tr>
<td>Figure 3.9</td>
<td>Levels of relationship</td>
<td>29</td>
</tr>
<tr>
<td>Figure 3.10</td>
<td>Kraljic’s matrix</td>
<td>31</td>
</tr>
<tr>
<td>Figure 3.11</td>
<td>Supply strategies for different product types</td>
<td>32</td>
</tr>
<tr>
<td>Figure 4.1</td>
<td>Overview of studied companies in each industry</td>
<td>34</td>
</tr>
<tr>
<td>Figure 4.2</td>
<td>Electrolux sourcing and relationship matrix</td>
<td>46</td>
</tr>
<tr>
<td>Figure 4.3</td>
<td>Asko’s use of Kraljic’s matrix</td>
<td>49</td>
</tr>
<tr>
<td>Figure 5.1</td>
<td>Illustration of the first step of our analysis</td>
<td>52</td>
</tr>
<tr>
<td>Figure 5.2</td>
<td>Sourcing strategies at PEAB</td>
<td>54</td>
</tr>
<tr>
<td>Figure 5.3</td>
<td>Sourcing strategies at NCC</td>
<td>55</td>
</tr>
<tr>
<td>Figure 5.4</td>
<td>Sourcing strategies at Skanska</td>
<td>57</td>
</tr>
<tr>
<td>Figure 5.5</td>
<td>Sourcing strategies at Electrolux</td>
<td>58</td>
</tr>
<tr>
<td>Figure 5.6</td>
<td>Sourcing strategies at Asko</td>
<td>59</td>
</tr>
<tr>
<td>Figure 5.7</td>
<td>Sourcing strategies at Whirlpool</td>
<td>60</td>
</tr>
<tr>
<td>Figure 5.8</td>
<td>Overview of sourcing strategies in the studied companies</td>
<td>61</td>
</tr>
<tr>
<td>Figure 5.9</td>
<td>Supplier relationships at strategies at PEAB</td>
<td>62</td>
</tr>
<tr>
<td>Figure 5.10</td>
<td>Supplier relationships at strategies at NCC</td>
<td>64</td>
</tr>
<tr>
<td>Figure 5.11</td>
<td>Supplier relationships at strategies at Skanska</td>
<td>66</td>
</tr>
<tr>
<td>Figure 5.12</td>
<td>Supplier relationships at strategies at Electrolux</td>
<td>68</td>
</tr>
<tr>
<td>Figure 5.13</td>
<td>Supplier relationships at strategies at Asko</td>
<td>70</td>
</tr>
<tr>
<td>Figure 5.14</td>
<td>Supplier relationships at strategies at Whirlpool</td>
<td>71</td>
</tr>
<tr>
<td>Figure 5.15</td>
<td>Overview of supplier relationships in the studied companies</td>
<td>72</td>
</tr>
<tr>
<td>Figure 5.16</td>
<td>Illustration of the second step of our analysis</td>
<td>73</td>
</tr>
<tr>
<td>Figure 5.17</td>
<td>Overview of sourcing strategies in the construction industry</td>
<td>73</td>
</tr>
<tr>
<td>Figure 5.18</td>
<td>Overview of supplier relationships in the construction industry</td>
<td>76</td>
</tr>
<tr>
<td>Figure 5.19</td>
<td>Overview of sourcing strategies in the white goods industry</td>
<td>78</td>
</tr>
<tr>
<td>Figure 5.20</td>
<td>Overview of supplier relationships in the white goods industry</td>
<td>79</td>
</tr>
<tr>
<td>Figure 5.21</td>
<td>Illustration of the third step of our analysis</td>
<td>81</td>
</tr>
<tr>
<td>Figure 5.22</td>
<td>Relation between sourcing strategy and supplier relationship</td>
<td>82</td>
</tr>
</tbody>
</table>
1. INTRODUCTION

This chapter provides a background about the increased importance of the purchasing function in companies due to the growing competition and the necessity to reduce costs while maintaining a competitive level of customer satisfaction. Furthermore sourcing strategies and supplier relationships are briefly introduced and linked to the construction and white goods industries in Sweden. This will lead to the research questions and the purpose of this thesis. Finally a disposition of the paper and a time frame are presented.

1.1 Background

In the current global economy, companies act on markets that are characterized by change. Changes in companies’ environment come to pass continuously and are happening fast.⁴ For example, technology changes rapidly and customer needs vary over time. Furthermore, markets are growing and the competition has been, and still is, increasing.² This forces many companies to continuously look for ways to improve their performance and increase customer value. It is therefore of importance for companies to gain competitive advantages towards their competitors.³

The global competition among companies has led to increased costs and lowered profits. Many companies therefore need to reduce their costs at the same time as they want to satisfy their customer demands.⁴ Simultaneously the world is facing an economic recession which also implies the necessity to reduce costs.⁵ The greatest scope of creating savings is possible within the area of the greatest expenditure. In most organizations the greatest expenditure is the payments to personnel. Today this situation is different for manufacturing companies that face improvements in technology. As more work can be done by machines, the labor costs are consistently decreasing. At the
same time manufacturing companies may also find it preferable to outsource functions that were originally made in-house. Purchased goods have therefore become a greater expenditure than personnel for manufacturing companies.\(^6\) In many manufacturing companies, the value of purchased commodities, components and systems stand for more than 50 percent of the total costs. This is one aspect that has created increased importance of the purchasing function.\(^7\)

As manufacturing companies have the purchasing costs as a great part of the total costs, the major suppliers thus have a decisive role for the company.\(^8\) Therefore the competiveness of a company depends also to a great extent on the ability to perform superior purchasing.\(^9\) Assumed that all other things are kept constant, one dollar saved in purchasing cost is also one dollar earned profit. Many companies misunderstand this and believe that one dollar lower purchase price is also one dollar earned, but this is not the case. The total cost of purchasing must be considered and not only the purchase price.\(^10\)

Most manufacturing companies have not focused on reducing costs within the purchasing function as their main area of improvement. More emphasis has instead been addressed to improve the efficiency of manufacturing processes and to reduce the costs of labor. This even though the labor costs represents a relatively low amount of the total costs compared to the cost of material. It can therefore be seen as if there is a gap between the companies’ perception of how costs are divided among different areas and how the costs actually are divided between these, see Figure 1.1.\(^11\)

\[\text{Figure 1.1: Perceived and actual divided costs in manufacturing companies}\]


\(^9\) Ibid. pp. 251-252
“Purchasing and supply can no longer be treated as a second-order function. The way forward lies with integrated materials management, pulling together suppliers, production and distribution. In the years ahead, those who have not got their purchasing and supply operations right will not be competitive.”

Due to the fact that manufacturing companies have purchasing as a great part of the total cost as well as that major suppliers have a decisive role for the company, it is important to emphasise the selection and relationship with these suppliers to make the organization profitable. Integrating supply strategies as part of the company policy can lead to considerable savings and significant improvements in operational processes. Sourcing strategies and supplier relationships have been identified as the main elements of supplier management.

1.2 Problem Discussion

Sourcing is a key purchasing activity that refers to the process of identifying, selecting and developing suppliers. Sourcing is composed of different strategies, so called sourcing strategies. Examples of sourcing strategies can be related to the number of suppliers used by a company. When a company chooses to source products from an external supplier, a relationship between the two companies is initiated. The nature of this relationship has a great influence on the ultimate value and the achievable customer satisfaction.

Over the past two decades collaboration has been considered as a “best practice” supplier relationship management. Earlier, manufacturers have mainly focused on the costs, quality and delivery when dealing with suppliers, the relationships were then mainly transactional. Today, this traditional “arm’s length” relationship is being replaced by a closer relationship between manufacturer and supplier. This because of the fact that collaboration and effective supplier management can improve a

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18 Leenders, M.R. et al. (2002) p..309
19 Cox, A. et al. (2003) p. 135
manufacturer’s performance in terms of cost reductions, achievement of constant improvements in quality levels and the enhancing of new product design.\textsuperscript{20} However, “best practice, if it means anything, means doing what is appropriate to the context faced in any given situation”\textsuperscript{21}. This implies that the idea of collaboration as “best practice” does not take into account the fact that not all transactions require resources for a collaborative relationship. Additionally not all suppliers are eager to allocate resources for a collaborative relationship.\textsuperscript{22} Therefore “entering a collaborative relationship will only make sense if the expected financial and strategic rewards are deemed to be higher than the costs associated with the establishment of such a relationship”.\textsuperscript{23} 

It has been acknowledged that supply chains can exist in many different forms and their complexity and diversity vary according to their structure.\textsuperscript{24} Manufacturing companies can be either project-based or process-based. A project-based industry is characterized by temporary contracts and short term gains. As for process-based manufacturing the supply chain approach is mainly based on long term contracts and strategies. It has been noticed that few researches have been conducted in the field of sourcing strategies and supplier relationship management within project-based industries. Due to the few studies conducted in this area, there is a lack of established theories about sourcing strategies and supplier relationship management in project-based industries.\textsuperscript{25}

One of the project-based industries is the construction industry where supply chains have short lifecycles. Usually these supply chains exist only for the duration of a project.\textsuperscript{26} Construction companies can therefore be compared to virtual organizations, “a dynamic and temporary form of cooperation that acquires characteristics of a supply chain”.\textsuperscript{27} The projects within this industry are therefore frequently characterized by temporary contracts and short term gains. Furthermore, construction supply chains typically involve many different companies supplying materials, components, and a

\textsuperscript{20} Goffin, K. et al. (2005) p. 189
\textsuperscript{21} Cox, A. et al. (2003) p. 137
\textsuperscript{22} Ibid.
\textsuperscript{23} Ibid. p.136
\textsuperscript{24} Briscoe, G. & Dainty, A. (2005) p. 320
\textsuperscript{26} Briscoe, G. & Dainty, A. (2005) p. 320
\textsuperscript{27} Cox, A. & Ireland, P. (2002) p. 411
range of construction services.\textsuperscript{28} It has been found that the purchase of goods and services from suppliers represent as much as up to 80 percent of the total costs in a construction project.\textsuperscript{29} Moreover the significant technological innovations in construction products and services have opened up a range of different sourcing possibilities. Considering all this, supplier management has become an increasingly important concern for construction industry.\textsuperscript{30} It can therefore be assumed that there is necessity for construction companies to have adjusted sourcing strategies and supplier relationships.

Regarding the process-based approach, many industries can be studied. The selected industry for this thesis is the white goods industry with a focus on manufacturers. The white goods industry is characterized by a high level of competition.\textsuperscript{31} The purchasing function also plays an important role for the white goods manufacturers. The raw materials can make up to 65% of the total cost of a white good\textsuperscript{32}. Due to these facts, sourcing strategies and supplier relationships have become a bigger issue.

Considering the specificities of supply chain structure in the two industries, it can be assumed that prerequisites for their sourcing strategies and supplier relationships are different. By comparing manufacturers between a process-based and a project-based industry there would be a possibility to identify best practices related to these topics from the two types of industries. Thus, this comparison can enable knowledge transfer and could help to improve the sourcing and supplier relationship management functions within the two industries.

\textsuperscript{28} Briscoe, G. & Dainty, A. (2005) p. 320
\textsuperscript{30} Cox, A. & Ireland, P. (2002) p. 410
\textsuperscript{31} www.fipl.it (2009-04-17)
\textsuperscript{32} Ibid.
1.3 Research Questions

- What similarities and differences can be found between manufacturers in the construction and the white goods industries regarding sourcing strategies and supplier relationships?

- Why are these sourcing strategies being used and how do they influence the supplier relationships?

- How can the manufacturers in the two industries learn from each other regarding the use of sourcing strategies and supplier relationships?

1.4 Purpose

The purpose of this thesis is to identify the sourcing strategies used in our studied companies and understand why these sourcing strategies are used. Moreover the authors’ aim is to highlight the main implications of these strategies in terms of supplier relationships. Furthermore the main similarities and differences among the manufacturers of the two industries will be discussed in order to identify the best practices and possibilities for knowledge transfer between the two industries.

Figure 1.2: Overview of our investigation
1.5 Disposition of the thesis

The disposition of this thesis is divided into six different chapters. In addition to the current chapter five more chapters are handled in this thesis. Down below a disposition is made over the following chapters.

![Disposition of the thesis diagram]

2. Methodology
   - After the introductory chapter the authors’ choices of methodology will be made.

3. Theory
   - In the theory chapter the authors will highlight theories that are relevant for the thesis.

4. Empirical Data
   - In this part studied companies will be presented, as well as the collected data.

5. Analysis
   - In the analysis the collected data will be compared to the established theories as well as companies and industries are compared to each other.

6. Conclusion
   - In the final chapter the authors present their conclusions made out from analyzing the theoretical and empirical data.

*Figure 1.3: Disposition of the thesis*
1.6 Time Schedule

The following framework has been designed in order to plan our work for this thesis.

<table>
<thead>
<tr>
<th></th>
<th>W14</th>
<th>W15</th>
<th>W16</th>
<th>W17</th>
<th>W18</th>
<th>W19</th>
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<td>29/05 Deadline</td>
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<td></td>
<td></td>
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</tr>
<tr>
<td>INTRODUCTION</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>METHODOLOGY</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>THEORY CHAPTER</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>EMPIRICAL CHAPTER</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>ANALYSIS CHAPTER</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CONCLUSION</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PROOF READING</td>
<td></td>
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</tr>
<tr>
<td>HAND IN THE THESIS</td>
<td></td>
<td></td>
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<td></td>
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<td></td>
<td></td>
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</tbody>
</table>

Figure 1.4: Time frame
2. METHODOLOGY

The purpose of this chapter is to present how the authors have conducted this thesis and which methodological choices that have been made. Finally a summary of the choices is presented.

2.1 Scientific perspective

The scientific perspective deals with what is acceptable knowledge and what is not. There are different opinions regarding this and below positivism and hermeneutics are explained.\(^{33}\)

**Positivism**

Distinctive for positivism is that it has a scientific approach for the study of the social reality. Exactly what positivism stands for may differ between different authors and scientists. But the majority agrees that positivism denotes the following aspects: \(^{34}\)

- It is only occurrences that can be confirmed with our senses that are real knowledge.
- The purpose with positivism is to formulate hypotheses that can be tested.
- Knowledge can be attained by collecting facts.
- Science is objective, without personal values.
- It is only scientific statements that belong to the scientific field.

The positivistic approach has been developed over time. Hence, positivistic scientists have moved from not using established theories to the use of theories as a framework for the research and as help to develop hypotheses. \(^{35}\)

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\(^{34}\) Ibid.

\(^{35}\) Johansson Lindfors, M.B. (1993) pp. 77-78
Hermeneutics
This theory of knowledge has a humanistic approach and not a scientific as the positivistic perspective.\(^{36}\) The hermeneutics is more focused on interpreting. This interpreting perspective is more or less synonymous with Weber’s concept of Verstehen. To be able to understand something, the scientist according to hermeneutics must understand the context of the occurrence or text.\(^{37}\) The interpretation process that creates understanding looks thereby both at the overall picture and the smaller parts of the studied area. This procedure is called the “hermeneutic circle”.\(^{38}\)

Our scientific perspective
In this thesis the positivistic perspective is the perspective that mainly has been used. This since the study is based on facts rather than our own subjective interpretations when the two different industries first are compared to each other and then these findings are compared to the theory. Reservations should be made nevertheless, since subjective values subconsciously may influence the results of the study.

2.2 Scientific approach
Deduction and induction are two scientific approaches that are used in researches. The two approaches have different relationships between theory and reality.\(^{39}\)

Different approaches
The deductive approach initially starts with studying established theoretical data before the empirical data is collected. By starting from the established theories, the researcher can create one or more hypotheses that will be tested empirically. From the research a theory can be rejected or confirmed.\(^{40}\)

An inductive approach is the opposite of the deductive. The induction approach uses empirical data to create and develop theories. The theory is therefore the result from a

\(^{39}\) Bryman, A. & Bell, E. (2005) p. 23
\(^{40}\) Ibid.
survey and the researcher does not need to read existing theories before the survey begins.41

**Our scientific approach**

The scientific approach in this thesis is deductive since the authors initially studied established theories and facts. With help from the collected theories and facts, decisions for the empirical data needed could be carried out. Furthermore, the content of the chosen theories is used for analysis of the empirical data in order to help us answering our research questions.

**2.3 Research method**

The survey has either a quantitative or a qualitative research method. These two methods diverge from each other of how the survey will be accomplished. 42

**Different research methods**

The quantitative method is focused on gathering numeric data.43 This method has a deductive approach as the research employs existing theories. Furthermore, the quantitative method advocates the scientific and objective approach when the research object is being studied.44

The qualitative method has more focus on words and less on numbers as the quantitative method has. The qualitative method also focuses on an interpretation of the researched object which is different to the scientific approach. At last the qualitative method advocates that social characteristics are a result from individual ensembles.45

**Our research method**

In this thesis a qualitative research method has been used. The focus of this study has been more towards words than numbers. Also the conducted study has been carried out through interviews with six different companies where open questions were used since the authors wanted more comprehensive answers from the respondents.

2.4 Research design

Different research designs

In a case study a certain object is studied. This research design is considered to be suitable when answers to the questions how and why are sought to be found. At the same time, the researcher has control over the situation that is being studied, whereas the study can be seen to be of a descriptive kind.\textsuperscript{46} However, when a case study is conducted a single object is studied and therefore the result cannot be generalized.\textsuperscript{47}

In a comparative design, two or more contrasting cases are compared to each other. The different objects are studied in the same, or similar ways whereupon they are compared to each other in order to find similarities and differences.\textsuperscript{48}

Our research design

One purpose with the thesis is to compare sourcing strategies and their impacts on supplier relationships between companies within the two manufacturing industries. Furthermore the two industries are compared to each other. A comparative design is therefore used when the two different industries are compared to each other in order to find out similarities and differences between them. Six different companies have been studied, three from each industry.

\hspace{1cm}

\textbf{Figure 2.1:} Comparison between companies within and between the two industries

\textsuperscript{46} Yin, R.K. (2007) p. 17

\textsuperscript{47} Wallen, G. (1996) p. 115

\textsuperscript{48} Bryman, A. & Bell, E (2005) pp. 74-75
2.5 Empirical data collection

The empirical data can be collected in several ways, examples can be interviews and questionnaires.\textsuperscript{49} There are two different types of data that can be gathered, primary and secondary data.

Different types of data

Primary data refers to data that the researcher has collected by himself, with for example interviews. Some of the most common interview methods are structured, unstructured and semi-structured interviews.\textsuperscript{50} The structured interview means that the interviewer uses pre-determined questions in a certain order. One purpose with this is that all respondents receive exactly the same questions.\textsuperscript{51} The interviewers that use an unstructured interview have only a list of themes that should be brought up. Thereby the formulation and order of the questions differ between the interviews.\textsuperscript{52} With a semi-structured interview the interviewer has pre-determined questions but the order of them differ between the interviews. The interviewer has also an ability to ask further questions in addition to the pre-determined questions.\textsuperscript{53}

Primary data can also be gathered by questionnaires. This procedure is similar to the structured interview, but the obvious difference is that there is no present interviewer. One major benefit with questionnaires towards interviews is that many questionnaires can sent out to respondents at the same time which saves much time. However, the questionnaire has a disadvantage as there is no present interviewer that can help the respondent with understanding the questionnaires.\textsuperscript{54}

Secondary data on the other hand is data that has been gathered before with another purpose.\textsuperscript{55} The benefits with secondary data is that is saves both time and money for the

\begin{itemize}
  \item \textsuperscript{49} Bryman, A. & Bell, E (2005) p. 47
  \item \textsuperscript{50} Ibid. p. 138
  \item \textsuperscript{51} Ibid. p. 135
  \item \textsuperscript{52} Ibid. p. 138
  \item \textsuperscript{53} Ibid.
  \item \textsuperscript{54} Ibid. pp. 161-163
  \item \textsuperscript{55} Björklund, M. & Paulsson, U. (2007) p. 67
\end{itemize}
researcher.\textsuperscript{56} Drawbacks with this kind of data are that the researcher is not familiar with it and there is a risk that the data can have poor quality.\textsuperscript{57}

**Our empirical data collection**

In this thesis the authors have mainly used primary data collected through interviews with companies in two different industries, the construction industry and the white goods industry. Secondary data has also been gathered to a small extent from the companies’ homepages and annual reports to complement the empirical chapter. Interviews have been chosen in front of other techniques, as for example questionnaires because it facilitates deeper and more extensive answers from the respondents. The type of interviews being used in this survey is semi-structured, mainly because this opens opportunities to give questions outside the interview guide. The interviewed persons in the companies are one way or another responsible for the purchase function of the company.

<table>
<thead>
<tr>
<th>Name</th>
<th>Position/Company</th>
<th>Type of interview</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mikael Johansson</td>
<td>Purchasing Manager Region South PEAB</td>
<td>Personal interview</td>
<td>2009-05-04</td>
</tr>
<tr>
<td>Marcus Holtz</td>
<td>Purchasing Manager Region South, NCC Construction Sweden</td>
<td>Personal interview</td>
<td>2009-04-27</td>
</tr>
<tr>
<td>Per Stark</td>
<td>Manager Portfolio Interior Skanska Sweden</td>
<td>Personal interview</td>
<td>2009-05-18</td>
</tr>
<tr>
<td>Jan Svensson</td>
<td>Purchasing Manager Electrolux Laundry Systems Sweden</td>
<td>Personal interview</td>
<td>2009-05-08</td>
</tr>
<tr>
<td>Peter Jonsson</td>
<td>Purchasing Manager Asko Appliances</td>
<td>Telephone interview</td>
<td>2009-05-07</td>
</tr>
<tr>
<td>Ola Jonsson</td>
<td>Purchaser, Whirlpool Sweden</td>
<td>Telephone interview</td>
<td>2009-05-18</td>
</tr>
</tbody>
</table>

*Figure 2.2: Overview of our interviews*

\textsuperscript{56} Bryman, A. & Bell, E., (2005) p. 231  
\textsuperscript{57} Ibid. pp. 235-237
2.6 Sampling

Often when a certain topic or problem is to be discussed, it is necessary to make a sample of which objects to study. This because of the fact that it is in most cases not possible to study all objects with the desired characteristics, due to the costs it would bring and because of the time it would be needed to consume.\(^{58}\)

Before the researcher decides upon how the sampling should be made, the purpose with the study needs to be considered. If the purpose is to establish ideas for an upcoming study it is enough to find a few objects which are easy to locate. If the purpose with the paper on the other hand is to say something about the population, there is a need to choose objects that represents the whole population. In this case the researcher needs to know the probability for each object to be selected.\(^{59}\) Objects that are chosen for the study can be a result from the use of a probability sampling or a non-probability sampling.\(^{60}\)

**Probability sampling**

There are different types of probability sampling. Two of these are random sampling and systematic sampling. In the random sampling, all objects in the population have the same probability of being selected.\(^{61}\) In a systematic sampling the researcher chooses the objects by for example picking every twentieth object.\(^{62}\)

**Non-probability sampling**

There are three types of non-probability sampling, convenience sampling, snowball sampling and quota sampling. In convenience sampling, the researcher picks objects in his surroundings or happens to be available. In a snowball sampling the researcher chooses a few objects relevant for the study and these objects in their turn contact others. In the quota sampling, the researcher takes a random sample that reflects the proportions regarding for example age for the population.\(^{63}\)

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\(^{58}\) Holme, I.M. & Solvang, B.K. (1997) p. 182

\(^{59}\) Ibid. p. 183

\(^{60}\) Halvorsen, K. (1992) p. 98


\(^{62}\) Ibid. pp. 115-116

\(^{63}\) Ibid. p. 128
Our sample

In this thesis a sample of companies to interview within the two industries, the white goods industry and the construction industry, had to be made. The method the authors used for selecting respondent companies can be categorized as a non-probability sampling. The reason for this is that the authors have chosen only the larger companies of the two industries in Sweden since it is considered to give a better comparison between the industries. Furthermore the larger companies have been selected because they are more representative of the realities encountered in each industry. Three large companies for each industry have been chosen for this thesis, PEAB, NCC Construction Sweden and Skanska Sweden for the construction industry. Electrolux, Asko Appliances and Whirlpool Sweden represent the white goods industry.

2.7 Scientific credibility

There are a number of criteria that can be used to judge the credibility of the study in order to reach a high quality of the empirical study.\(^{64}\)

Validity

Validity is a measure of whether the study measures what is intended to be measured and that nothing else influences the results. If a study is to achieve high validity, the study needs to be relevant to what the researcher is trying to prove or measure.\(^{65}\) In a thesis three different kinds of validity should be considered, construct validity, internal validity and external validity.\(^{66}\)

Construct validity is important in a thesis to ensure that an objective judgement is being made in the collection of data. The problem of being objective is particularly present if the study is a case study. To avoid this problem and ensure high construct validity several sources should be used when collecting data.\(^{67}\)

Internal validity is a question of whether a cause and effect relationship exists between different actions. To achieve a high internal validity, it is therefore of importance to

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\(^{64}\) Yin, R. K. (2003) p. 33
\(^{65}\) Thurén, T., (1991), p.22
\(^{66}\) Yin, R.K. (2003) p. 34
\(^{67}\) Ibid. pp. 34-36
ensure that one variable affects another and that there is no other variable in between that affects the variables. Several observations should be made in order to make sure that internal validity is to be achieved.  

External validity decides whether the results from a particular study can be subject for generalization. If the results are able to be used and applied to other cases with similar circumstances, the external validity is considered as high. In order to achieve a high external validity, it is of importance for the researcher to create representative samplings when selecting the objects used in the study.

**Reliability**
Reliability implies whether the same or similar results, conducted in a study can be achieved by another researcher if the study will be conducted again. If this is the case, the reliability of the study is considered to be high. A prerequisite for a study to be able to be conducted again in the future is that the researcher documents the procedures that have been used.

**Our scientific credibility**
This thesis has secured construct validity due to the fact that there are no bounds between the authors and the researched companies and therefore the authors are able to stay objective. At the same time reservations should always be given to that it is very hard to stay completely objective in all cases. A weakness with the external validity of this thesis can be that our study is a comparative one between large actors in two different manufacturing industries with its own characteristics. It is therefore difficult to generalize the study to other industries and smaller actors.

The internal validity between changes in the supplier relationships and changed sourcing strategies may have some weaknesses since there are other variables between the mentioned areas that affect changes. These other variables are highlighted later in the analysis. Furthermore, not enough observations have been made to ensure internal validity.

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69 Ibid. p. 37
70 Bryman, A. & Bell, E (2005) p. 49
The reliability can be seen as high, due to the fact that the authors have documented the research method and given the interview scheme in an appendix. By using this information a similar result can be made by other researchers.

2.8 Generalization

Researchers often want to know whether the results from a study can be generalized to other situations than the one that has been studied. It is therefore of importance that the objects selected for the study are representative for the population as a whole if generalization is to be made possible for the study.72

Our generalization

The results from this study are difficult to generalize to other industries and other companies since the study is a comparative study between large actors in two different manufacturing industries with its own characteristics.

2.9 Summary of our methodological choices

![Figure 2.3: Summary of our methodological choices](image)

72 Bryman, A. & Bell, E (2005) p. 100
3. THEORY

This chapter provides theories that will help to analyze the empirical data from our studied companies. First the sourcing strategies are explained to give the reader an overview of the possibilities companies have for the purchasing of items or components from suppliers. Secondly theories about different relationships that occur between the buyer and supplier are presented to give an overview of supplier relationships. Finally, the Kraljic’s matrix is presented as it is a tool that can be used by companies to determine which sourcing strategies and supplier relationships they should adopt.

3.1 Sourcing Strategies

3.1.1 Overview of sourcing strategies

Sourcing is a key purchasing activity and refers to the process of identifying, selecting and developing suppliers. The sourcing function can be either on a tactical or strategic level. The tactical or operational sourcing refers to low-level decisions that are related to high-profit, non critical and low-risk items. Tactical sourcing also refers to the short-term decisions. The strategic sourcing is concerned with the top-level and long-term decisions. These decisions often refer to strategic and bottleneck products and services that have a high supply risk. Furthermore the strategic sourcing also refers to the formulation of the long-term purchasing policies. The use of tactical or strategic sourcing depends on the purchase and the business environment. The use of an effective and appropriate strategy for sourcing can enable to realize reduction of costs, reduction of lead times as well as improvements in the quality of products. However, to achieve these advantages choices have to be made concerning a number of areas. Choices regarding the number of suppliers can be an example of this. The number can differ from industry to industry and between different product categories.

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74 Enarsson, L. (2006) p. 70
3.1.2 Different types of sourcing strategies

There are several types of sourcing strategies as illustrated in the Figure 3.1 below. Following more details will be provided for each of them.

![Figure 3.1: Types of sourcing strategies](image)

**Source:** Own illustration

**Single sourcing**

The term of a single sourcing strategy is characterized by the use of one supplier for the supply of each item. Single sourcing is needed for establishing a close relationship with suppliers. The use of this approach enables companies to focus on one supplier for each item and therefore more emphasis can be put on each remaining supplier.\(^75\) In turn, this increases the possibility for establishing profitable relationships and mutual competitive advantages against other supply chains.\(^76\)

Collaboration is important in manufacturing companies of today. Companies strive to gain competitive advantages towards their competitors. Such competitive advantages can be realized through cooperation between buyer and supplier in a win/win strategy from which both parties benefit. A sustainable competitive advantage can be achieved through the development of a closer relationship that single sourcing gives rise to.\(^77\)

The collaboration is very important in manufacturing companies that has implemented Just-In-Time. The concept of Just-In-Time is actually one driver behind the trend towards single sourcing because of the importance of close collaboration and cooperation it emphasizes in companies involved.\(^78\)

\(^75\) Mattsson, S-A. (2000) pp. 243-244
\(^76\) Ho Ha, S. & Krishnan, R. (2008) pp. 1303-1304
\(^78\) Ibid.
The closer relationships that single sourcing gives rise to provide companies the possibility to collaborate more also when it comes to product development and planning. By using the suppliers’ knowledge the product development might be improved and because of the improved information sharing possible it is easier to avoid shortages in material.\textsuperscript{79} With single sourcing the supplier selection is important since the purchasing company is more dependent on one particular supplier for the delivery of an item.\textsuperscript{80}

By using single sourcing, companies are able to lower their administrative costs and other costs related to purchasing. Single sourcing focuses on all the costs around the purchase and therefore a lower total cost can be achieved. Nonetheless single sourcing can actually also lead to a lower purchase price because of when using one supplier, a larger amount of items are purchased from this supplier. Therefore economies of scale can be used and lower the production cost for the supplier and the purchase price for the buyer.\textsuperscript{81}

\begin{figure}[h]
\centering
\includegraphics[width=0.5\textwidth]{supplier_strategies.png}
\caption{Supply strategies for different product types}
\end{figure}

\textbf{Sole sourcing}

Sole sourcing is an alternative variant to single sourcing. In this case only one supplier is used for the supply of a particular item, just as in the case of single sourcing. The difference is that there is just one supplier available on the market in sole sourcing. Sole sourcing may occur due to that existing alternative suppliers have disappeared from the market because of the competition. The use of sole sourcing can also be self chosen by

\begin{flushright}
\textsuperscript{79} Van Weele, A. (2005) pp. 158-161
\textsuperscript{81} Mattsson, S-A. (2000) pp. 244-248
\end{flushright}
the buying company when one separate supplier is chosen to develop and manufacture a special item that is only interesting for the buyer. Sole sourcing has the same advantages and disadvantages as single sourcing and makes the buying company even more dependent on the supplier.\textsuperscript{82}

\begin{figure}[h]
\centering
\includegraphics[width=0.5\textwidth]{sole_sourcing.png}
\caption{Sole sourcing}
\end{figure}

\textit{Source: Own illustration}

\textbf{Single group sourcing}

Single group sourcing is another sourcing strategy that can be seen as a variant of single sourcing. This sourcing strategy indicates that one supplier is responsible for the delivery of not just one particular item, but a whole group of items with similar characteristics. By using single group sourcing, the buying company will become more dependent on one supplier than the case is in single sourcing. On the other hand, the higher volumes supplied by one single supplier in this case opens up an opportunity for additional economies of scale. At the same time there is a possibility for developing the collaboration between buyer and supplier when it comes to issues regarding for example material development and the development of new manufacturing technologies. Furthermore, the company will be prioritized by the supplier in for instance situations of delivery problems.\textsuperscript{83}

\textsuperscript{83} Ibid. p. 205
Multiple sourcing

Multiple sourcing means that a company uses several suppliers for the sourcing of one specific item. This approach has been the far most commonly practiced when it comes to sourcing strategies regarding the number of suppliers. A reason why companies use several suppliers is that they want to play out suppliers against each other. By doing this the companies are striving for receiving a better negotiation power and lower the purchasing prices. This implies that companies have competed with their suppliers over the margins that can be found at the different levels within the supply chain.

Another reason why multiple suppliers have been used for sourcing items is to eliminate the risk of material shortages and quality issues that can arise when being dependent on sorely one supplier. It has, however, also been argued that using multiple suppliers for sourcing brings some disadvantages along as well. For example the buying company is less important for its suppliers when it uses multiple sources for an item and therefore will not be prioritized if a shortage would occur at the supplier’s premises. This is a result of the fact that the ordered volumes will be lower when the required items are

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85 Burk, G.J. et al. (2007) pp. 96-97
split among several suppliers. Also, it is argued that multiple sourcing does not deal with the total costs, but sorely on the purchase price.\textsuperscript{88}

The use of several suppliers for each item results in many relations. By having many relations it is difficult to establish closer relationships with these suppliers because most companies can neither afford, nor have the resources to do this with all these suppliers.\textsuperscript{89}

![Figure 3.5: Multiple sourcing](source: Mattsson (2000) p. 245)

**Dual sourcing**

When a dual sourcing strategy is used, usually two suppliers are used parallel per item. It can also be the case that one of the current suppliers is selected as a primary supplier while the others will be considered as secondary suppliers. The primary supplier answers to deliver the larger part of the supply, whereas the secondary suppliers together answers for the delivery of the remaining part. By using this sourcing strategy many of the advantages of single sourcing, like for example economies of scale due to being a large customer is cared for. At the same time the disadvantages of risk exposure to material shortages is avoided. Furthermore, the buying company can play the suppliers against each other in order to lower the purchase price.\textsuperscript{90}

**Hybrid sourcing**

Hybrid sourcing is a sourcing strategy which is a combination between single and multiple sourcing. It has been developed in order to preserve the advantages with the

\textsuperscript{89} Ibid. pp. 242  
two strategies. In this sourcing strategy multiple sourcing is usually exercised on item group level and single sourcing on the individual items within the groups. The advantages of single sourcing can in this case be maintained at the same time as the disadvantages can be reduced in form of delivery interruptions.\textsuperscript{91}

\begin{figure}[h]
\centering
\includegraphics[width=0.5\textwidth]{figure3_6.png}
\caption{Hybrid sourcing}
\end{figure}

\textsuperscript{93} Lysons, K. & Farrington, B. (2006) p. 224

\section{3.2 Supplier Relationship Management}

\subsection{3.2.1 An overview of supplier relationships}

A relation exists between two companies when one supplies another with goods or services. The nature of this relationship between the two organizations has a great influence on the ultimate value and the achievable customer satisfaction.\textsuperscript{92} The success of buyer-supplier relationships depends on the development of trust and the understanding of their respective requirements and interests. Moreover, there should be a concern for both learning and providing assistance to each other. These kinds of relationships enable to provide competitive advantages for both parties. \textsuperscript{93} Therefore the
relationship buyer-supplier should not only be considered as a simple exchange of money for goods and services.\textsuperscript{94} The table below shows the generic typologies of buyer-supplier relationships.

<table>
<thead>
<tr>
<th>Traditional relationship</th>
<th>Partnership relationship</th>
</tr>
</thead>
<tbody>
<tr>
<td>Focus on short, discrete purchasing</td>
<td>Focus on supplier retention</td>
</tr>
<tr>
<td>Short-term orientation</td>
<td>Long-term orientation</td>
</tr>
<tr>
<td>Arm’s length</td>
<td>Closeness</td>
</tr>
<tr>
<td>Simple buyer-seller relationship</td>
<td>Complicated, including internal relationships</td>
</tr>
<tr>
<td>Emphasis on price, quality and delivery in</td>
<td>Emphasis on improving price, quality, delivery and other</td>
</tr>
<tr>
<td>the offered product</td>
<td>factors, such as innovative design as a collaborative</td>
</tr>
<tr>
<td>No innovation</td>
<td>exercise between purchaser and supplier.</td>
</tr>
<tr>
<td>Moderate supplier contact</td>
<td>High level of supplier contact, with each contact being used</td>
</tr>
<tr>
<td>Little sharing of information, opaqueness</td>
<td>gain information and strengthen the relationship.</td>
</tr>
<tr>
<td>Reserve auctions may be applicable</td>
<td>Reserve auctions generally not applicable</td>
</tr>
</tbody>
</table>

\textbf{Figure 3.7:} The main differences between traditional and partnership relationships

Source: Adapted from Lysons, K. & Farrington, B. (2006) p. 224

These differences between relationships have been also discussed by Jonsson and Mattsson who present two different approaches to relationships with suppliers, the traditional view and partnership relation. According to the authors, a company has different relationships with different suppliers. The relationship to keep with different suppliers depends on what kind of supplier is considered.\textsuperscript{95}

The traditional view of relationship between buyer and supplier keeps the suppliers at an arms’ length distance. This means that the buyer searches for a supplier and

negotiates the best conditions possible. The focus of the buyer lies on finding the lowest purchase price possible rather than the lowest total cost and high ability to deliver.\textsuperscript{96} The perspective of the contracts is often short and one deal at a time. Furthermore several suppliers are used in order to lower the purchase price and keep the competition high. The contact between the buying company and the supplier is in this case limited and both parties try to locate the surplus in the value chain in a win/lose game. The buyer tries to avoid being dependent on the supplier and reduce the power the supplier may possess towards the buyer. Integration is also avoided in order to not become dependent on a supplier, which also suggests that efficiency suffers, due to that development of suppliers, products and manufacturing processes is being complicated.\textsuperscript{97}

In a partnership relation on the other hand the focus of the buyer is to develop close and intimate relationships with a limited number of suppliers. The contacts between the two companies are in this case more frequent and a win/win game where the two parties share the surplus is practiced.\textsuperscript{98} In contrast with the traditional approach, the buyer and the supplier work together with emphasis on serving the end customer and by doing so, together try to increase the supply chain’s gathered power of competition. Thereby a larger profit marginal can be gained for both parties.\textsuperscript{99} Longer agreements are used and it is more lucrative to contribute to a customer competitive power for a supplier in this sort of arrangement.\textsuperscript{100} A thorough evaluation is therefore needed to be carried out on potential suppliers since the selection of a proper supplier is crucial and influences the performance of the company.\textsuperscript{101}

\textbf{3.2.2 Types of supplier relationships}

Many classifications regarding supplier relationships can be found within the literature. Following will be presented a framework of buyers-suppliers relationships and a model that explains the different levels of suppliers’ relationships.

\textsuperscript{96} Zeng, A. (1995) p. 220
\textsuperscript{98} Ibid.
A framework for buyer and supplier relationships

This framework suggests that buyer-supplier relationships consist in two main dimensions, the *way of working* and the *share of surplus value*.\(^{102}\) The first dimension refers to the different ways that a buyer can interact with a supplier. There are two generic ways of working: *arm’s length* and *collaborative*. An arm’s length way of working is characterized by a low level of contact between the buyer and supplier. The buyer and supplier only exchange contractual information required for the transaction to take place.

The collaborative way of working is much more proactive. It is characterized by high contact and close communication between the buyer and the supplier. Its aim is to create additional surplus value in the relationship. In this context, buyers and suppliers work jointly either to reduce the supplier’s costs or to increase the functionality of the product. Four pertinent collaborative actions can be undertaken: product/process information exchange, operational linkages, cooperative norms and relationship-specific adaptation.\(^{103}\)

The second dimension refers to how the buyers and suppliers compete over the division of the surplus value that is created by the transaction. Surplus value can be understood broadly as the gap between the costs incurred by the supplier and the utility function of the buyer. Generically the surplus value can be shared out in three ways. First it can be *largely appropriated by the buyer*. In this case the surplus value is mainly customer surplus. Secondly, the surplus can be *largely appropriated by the supplier*. Under this circumstance, the surplus value would largely be taken as producer surplus. Thirdly, the surplus value can be *shared by the buyer and the supplier*. In this case there is an equal amount of consumer and producer surplus.\(^{104}\)

The combination of these three generic approaches of surplus value sharing, combined with the two generic ways of working, provides us with six generic buyer-supplier relationship management types.\(^{105}\)

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103 Ibid. p. 137
104 Ibid. p. 138
105 Ibid.
Figure 3.8: A framework for buyer-supplier relationship types


The different levels of relationships

It can be said that relationships between a company and its suppliers are characterized by everything from the exercising of power at one end to the total partnership at the other end. It may be appropriate to define some specific levels of relationships between a company and its suppliers. Three different levels of relationships between a company and its suppliers can be detected, partnership suppliers, associated suppliers and conventional suppliers.\(^\text{106}\)

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The suppliers on the lowest level are called conventional suppliers. This relationship is characterized by deliveries being made against an occasional order. The purchasing price is the decisive factor for the choice of supplier. Furthermore the buyer has an own quality control and guard itself from delivery interruptions by having safety stocks. On this level there is no cooperation or agreements present.\textsuperscript{107}

With associate suppliers, the relationship is characterized by long-term agreements which are revised periodically. The buying company do not need to have an own quality control since the supplier guarantees the quality of the products. Orders and deliveries are made continuously and the flows between the buying company and the supplier are to a large extent synchronized. The two companies work together in order to continuously reduce stock and delivery time. The purchasing price is in this level of relationship just one of several factors that is considered when choosing supplier.\textsuperscript{108}

The highest level of relationship exists with the partnership suppliers. The relationships on this level are to a large extent characterized by the same conditions as the ones with associate suppliers. However, the relationships with partnership supplier also involve a common product development and frequent exchange of information. There is a high degree of integration and the two companies work together to improve for example production processes, products and quality.\textsuperscript{109}

### 3.3 Kraljic’s Matrix

Kraljic’s article in the Harvard Business Review in 1983 has to a great extent influenced professional purchasing among companies.\textsuperscript{110} When designing purchasing and supply strategies for a company, the portfolio approach from Kraljic can be used. This approach highlights the fact that the company has different interests in suppliers. Hence, it is necessary to develop differentiated strategies towards the supply markets. According to Kraljic’s theory the strategies should be developed using two variables, the profit impact and the supply risk:\textsuperscript{111}

\textsuperscript{108} Ibid.
\textsuperscript{109} Ibid.
\textsuperscript{110} Caniels, M. Gelderman, C. (2007) p. 219
\textsuperscript{111} Van Weele, A. (2005) pp. 148-149
• **The profit impact**: The profit impact is determined by the amount of money involved in the purchasing of the specific good. The higher volume of money involved the higher is the financial impact.

• **The supply risk**: A high supply risk occurs when the company only has the availability to source a good from just one supplier and when the cost of changing suppliers is high. Other factors that can create supply risk are admission barriers and logistic costs and degree of complexity.

The combination of these two variables creates a two-dimensional matrix, see **Figure 3.10**. The four quadrates represent the product groups or suppliers that the company has different interests in.\(^\text{113}\)

![Kraljic's matrix](source: Van Weele, A (2005) p. 150)

**Strategic products**: These are high-tech and high volume products. At the same time there is only one source of supply available, which can not be changed in the short term without high costs. Examples of these products are gearboxes and equipment for breweries. For these products, an intensive interaction is common. Based on the balance of power between the parties, three different power-relationships can be recognized. The relationship can either be supplier-dominant, buyer dominant or a balanced relationship that implies that partnership will be developed.\(^\text{114}\)

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\(^\text{112}\) Van Weele, A. (2005) p. 149  
\(^\text{113}\) Ibid.  
\(^\text{114}\) Ibid. pp. 150-151
Leverage products: These products can be obtained from many suppliers and has a high impact on the end product’s cost price. Thus a small increase in purchase price can have a strong effect on the product’s price. Efforts are then made to create bidding among the suppliers to get the best purchasing prices. Examples of products within this group are raw materials and semi-manufactured components.

Bottleneck products: The products of this group represents a small impact on profit but can only be obtained from one supplier. Hence the relationship is often characterized by a dominant supplier that can take high prices. For these products assurance of supply therefore becomes important. Examples of products within this group can be chemical products.

Routine products: These products have usually a small value per item and many different suppliers. Most of the purchased products are placed within this group. The products refer to for example office supplies. Because of the low value of these products, administrative work related to these should be as limited as possible. One way to do this is to create general agreements with the suppliers for one to three years.

When the company has classified its purchased products, the supply market should be analyzed for these materials. The final output is then to determine suitable supply strategies that should be taken as the previous text implies. See Figure 3.11 for summary of optimal supply strategies.

Figure 3.11: Supply strategies for different product types

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117 Ibid.
120 Ibid.
121 Bjørnland, D. et al. (2003) p. 275
122 Kraljic, P. (1983) p. 112
3.4 Our Analysis Model

**RESEARCH QUESTIONS**

**RQ1**
What similarities and differences can be found between manufacturers in the construction and white goods industries regarding sourcing strategies and supplier relationships?

**RQ2**
Why are these sourcing strategies being used and how do they influence the supplier relationships?

**RQ3**
How can the manufacturers in the two industries learn from each other regarding the use of sourcing strategies and supplier relationships?

**THEORY**

- Sourcing Strategies
- Suppliers Relationships
- Krajlic’s Matrix

**EMPIRICAL DATA**

Interviews regarding the theories are conducted in the following companies:

- PEAB
- ELECTROLUX
- NCC
- ASKO
- SKANSKA
- WHIRLPOOL

**ANALYSIS**

The theories are compared to the empirical data. Furthermore companies within each industry are confronted to each other, as well as construction industry versus white goods industry regarding the theoretical topics.

**CONCLUSION**

Answers to the research questions will be provided.
4. EMPIRICAL DATA

This chapter presents the empirical data that has been gathered from the studied companies. First a short presentation of each company is made. After this, data concerning sourcing strategies and supplier relationships are provided. The information provided in this chapter is from the interview respondents in each company if nothing else is mentioned.


4.1 PEAB

PEAB is one of the Nordic region’s leading construction and civil engineering companies. The company primarily engages in business in Sweden where it operates nationwide. In Norway and Finland most focus is given to the major city areas. PEAB’s business areas are construction (housing developments), civil engineering (infrastructure projects and civil engineering works), and industry (machines, products and services for the construction and civil engineering markets). The number of employees in 2008 was 14,116.\textsuperscript{123} The major competitors on the Swedish construction market are Skanska and NCC.\textsuperscript{124}

\textsuperscript{123} PEAB’s Annual Report 2008, p. 1
\textsuperscript{124} Ibid. p. 7
In order to increase its competitive capacity without lowering the quality of its solutions, PEAB is committed to continuously develop its construction and purchasing processes. The logistics processes are continuously being improved to increase efficiency and reduce costs.125

Purchasing in PEAB stands for approximately 70 percent of the total costs. PEAB have 22,500 registered suppliers within their construction part in Sweden. About 80 percent of the purchasing value is made with 1,210 suppliers. Relatively small and temporary purchases are therefore made with many suppliers.

4.1.1 Sourcing strategies

The market situation among the suppliers in the construction industry is characterized by high competition. Thus the needed goods and materials within the construction part of PEAB can be supplied by more than one supplier. In a construction project the company has therefore often the ability to choose between a number of suppliers according to price, delivery security and quality of the product or service. The construction projects have also no standardized products as the customer and architect decide what materials to use. One supplier can be suitable for one project but not for another. More than one supplier for a purchased product can therefore be used. This is also the most common situation for PEAB, as this way of sourcing is used for 80 percent of the purchased products. One example where it is utilized is when white goods are purchased, where suppliers such as Miele, Electrolux and Bosch are being used for the supply of the same products.

PEAB do not always use several suppliers for the supply of a product, in some cases they only use two or three suppliers in parallel. About 15 percent of the purchased products are done with this strategy. The reason for using this strategy is that the company faces situations where they can find it preferable to use two suppliers. One example can be when the company has a project in County Kronoberg. PEAB has Beijer as a supplier on a national level but on a local level another supplier can be used. Fellessons in Kronoberg can for example be used as a complement to Beijer in order to get a more preferable purchasing due to the convenience brought by this situation.

125 PEAB’s Annual Report 2008, p. 13
A third sourcing strategy that is used by the company is when one supplier supplies products with similar characteristics. This strategy is mainly used for the supply of construction frames. This sourcing strategy is being applied because there is a central agreement for the whole company which is made with a supplier of this product. Another reason is also that by using this strategy of buying similar products from one supplier is that the purchasing can be coordinated which is convenient and cost effective out from an administrative perspective. PEAB in some cases also uses only one supplier for some products. This sourcing strategy is for example used for the supply of plaster. One reason why it is used on this product is due to the fact that the company together with the supplier is continuously trying to develop the product in order to fulfill the legal requirements and the customers’ desires. Approximately five percent of the purchase of products exercises single and single group sourcing.

4.1.2 Supplier relationships

At PEAB the different sourcing strategies do not work as a foundation for what relationship to keep with the different suppliers. Instead the relationship is influenced by what kind of person that is representing the supplier. A good personal chemistry between the actors can therefore be positive for the relationship. According to the company they do not take actions to create and maintain relationships with their suppliers. Instead they believe that it is in the suppliers’ interests to create and maintain these relationships. The reason for this is that PEAB sees themselves as such a large company that it is important for the suppliers to keep them as a customer. Therefore they should be the ones struggling for keeping the relationship with PEAB and not the other way around.

The agreements with the suppliers are twelve months at a time. After this period the company decides if they are going to extend the contract another year or choose another supplier. The reason for having this timeframe on agreements is because of the fluctuating price of material.

Close relationships can however be held at occasions with a supplier within all the different sourcing strategies when for example a special product development is made. After the product development has been accomplished, the relationship goes back to be
more distant again. An exception of this is as developments of plaster products, which is made together with a single supplier, are done at a continuously basis. The reason for this is as mentioned before special requirements from the customers and changing legislations for plaster products.

PEAB also has a computerized purchase and call-off system named PIA which enables them to manage relationships with the suppliers. For example information can be exchanged with the suppliers regarding orders, products specifications, deliveries, contracting decisions, or other related topics. By using this system, the purchasing department did a better use of existing contracts in 2008\textsuperscript{126}. This led to more reliable deliveries and improved cost control\textsuperscript{127}.

### 4.2 NCC Construction Sweden

NCC Construction Sweden is a business area of the NCC-Group. The business area delivers different products within for example housing and infrastructure.\textsuperscript{128} NCC Construction Sweden is organized in four different regions Southern, Western, Stockholm/Mälardalen Region and Northern Sweden.\textsuperscript{129} Other business areas that belong to NCC-Group are NCC Construction Denmark, Finland, Norway and Germany, NCC Housing, NCC Property Development, and NCC Roads. NCC-Group acts mainly in the Nordic countries and has Sweden as the biggest market for all of the business areas.\textsuperscript{130}

In 2008, NCC Construction Sweden had 8,522 employees and realized a turnover of SEK 25,5 billion\textsuperscript{131}. Costs represent the NCC’s principal competitive tool. When the demand is weaker, it increases the ability of the group to reduce purchasing costs.\textsuperscript{132} Purchasing is one of the most important areas, because approximately 65-70 percent of the total costs of the organization come from the procurement of material and services. On a corporate level, NCC spends 3,5 billion Euro a year on purchasing.

\begin{itemize}
\item \textsuperscript{126} PEAB’s Annual Report 2008, p. 13
\item \textsuperscript{127} Ibid.
\item \textsuperscript{128} NCC AB’s Annual Report 2008, p.25
\item \textsuperscript{129} http://ncc.se/en/About-NCC/NCC-Sweden/NCC-Construction-Sweden/ (2009-05-14)
\item \textsuperscript{130} NCC AB’s Annual Report 2008, p.25
\item \textsuperscript{131} Ibid. pp. 26-27
\item \textsuperscript{132} Ibid. p.2
\end{itemize}
4.2.1 Sourcing strategies

Almost all the products that NCC needs for its construction projects can be supplied by more than one supplier. Hence the company has often the ability to choose between different suppliers according to factors such as lead time, product characteristics, quality and price. Depending on the construction project, suppliers have different abilities to fulfill the specified requirements. NCC therefore often uses more than one supplier per product. Another aspect that makes it difficult to only use one supplier per product is that the company can not always determine what products that are going to be used for the construction project. This as the final customer has the right to chose the products used in the construction project. Several suppliers are therefore used to a great extent. Approximately 80 percent of the purchased products and services are made with this strategy. One service that is purchased from several suppliers is floor construction from floor companies.

NCC also uses two suppliers in parallel for some products. This applies to ten percent of the purchased products. One situation where this kind of strategy is being used is when NCC wants to increase the competition among suppliers and decrease the dependency for one supplier. The company then for example purchases 80 percent from a big supplier of steel-doors and help to develop a smaller supplier by purchasing 20 percent of the product from that company.

The company also uses one supplier when it comes to the supply of products with similar characteristics. For example Beijer, which is a major supplier of construction products, supplies NCC with various products. This strategy enables to have more convenient supplies and reduce some purchasing related costs.

Furthermore, the company uses a single source for each product to some extent, circa five percent of the purchased products. This is applied to gain a closer relationship with these suppliers in order to be able to have a more efficient product development. Products this strategy is being used for are for example mobile subscriptions which are purchased from the same phone operator. The purchase of products that only can be supplied by one supplier is applied to a very small extent as there most of the times are a number of suppliers that NCC can choose among. This situation only occurs for a specific floor product.
Kraljic’s matrix is also being used by NCC for guidance, when deciding sourcing strategy for products when extensive agreements are being negotiated, for example Nordic agreements. When smaller and more local agreements are being determined, Kraljic’s is not being applied.

4.2.2 Supplier relationships

NCC has started to use only short-term contracts with their suppliers. This as prices for their purchased products are fluctuating which increases the risks for paying a too high purchasing price in the future. Short-term contracts are also being made as the construction industry is clearly affected by the recession. Many suppliers to NCC have faced bankruptcy which can lead to future supply shortage if long-term contracts are being made with the suppliers.

Even though the company uses short term agreements with its suppliers, this does not mean that they have a low degree of collaboration with them. One strategic goal for NCC is to lower their production costs and as part of this, the purchasing manager’s goal is to lower purchasing costs by five percent every year. To achieve this, the company tries to renegotiate agreements and work closer with some of its suppliers in order to reduce the costs for products that have a large part of the total costs. A close relationship is established in order to improve and develop these products so that the purchase price can be lowered and the product can become more suitable for the production. A supplier of concrete is an example of a supplier that the company develops a closer relationship with, in order to develop the collaboration and the product to benefit both parties. However, at the same time NCC tries not to come too close to the suppliers in order to not become too dependent on a certain supplier and therefore they do not only use one supplier for this.

Many of the suppliers to NCC are registered in the company’s web based purchasing-portal. The portal is a tool for the purchasing personnel plus an instrument for facilitating the interaction and relationship with the suppliers. When for example certain products need to be purchased, requests can be sent to different suppliers that are registered in the portal. The suppliers can then submit tenders to NCC as answers to the
requests in an easy way. After this, NCC can decide from which supplier it is preferable to buy from.

### 4.3 Skanska Sweden

Skanska is one of the world’s largest construction companies, with a leading position in a number of home markets in Europe, the United States and Latin America. In 2008, the Skanska Group realized revenue of SEK 144 billion and had 58,000 employees.\(^{133}\)

The company business areas are construction, residential development, commercial development and infrastructure development. Construction is the Skanska’s largest business stream. It consists in building construction for both residential and non-residential. This business stream operates through nine business units namely Sweden, Norway, Finland, Estonia, Poland, the Czech Republic, Slovakia, the UK, the USA and Latin America.\(^{134}\)

As part of its program to improve construction efficiency and boost productivity, Skanska aims to reduce costs and take a better advantage of its large size. To achieve this goal, the company is coordinating its purchasing work in a pan-Nordic organization. The company believes this effort to streamline purchasing will provide major benefits to the organization.\(^{135}\)

#### 4.3.1 Sourcing strategies

Close to all the products purchased by Skanska can be supplied by more than one supplier. However, even if it is possible for the company to use several sources for the supply of almost every product this is not the case. Mobile subscription is an example of a service that is supplied by a single supplier even though there are several suppliers available on the market. There is also one case where the company is not available to choose a supplier since only one is available on the market. The product is in this case bitumen.

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\(^{133}\) Skanska’s Annual Report 2008, p. 2  
\(^{134}\) Ibid. p. 4  
\(^{135}\) Ibid. p. 23
Several suppliers for each product are mainly used because the company has projects in different parts of the country. Approximately 60 percent of the total products purchased are supplied this way. Since companies which provide different installation services are not flexible when it comes to move their business around the country, Skanska instead needs to find new installation services companies for each project, depending on where the project is located. Therefore local actors need to be used instead of national actors. Another reason for using different suppliers for one product is because final customer is able to choose which kind of material is to be used for the project. The company can therefore not only use one supplier.

Skanska also uses two suppliers in parallel for the supply of a product. This supply of products is mainly used with suppliers that the company has general agreements with. The use of parallel suppliers is also to secure supply of the product and not be too dependent on one supplier. Additionally more than one supplier is needed because the final customer can decide what products that should be used in the construction project, only one supplier might not be able to meet that need. One example of a product that is supplied this way is different white goods.

The use of two parallel suppliers instead of several suppliers for one product has been prioritized in a new strategy that Skanska has to standardize constructions solutions to the customers.

The company does not use Kraljic’s matrix to a large extent. When it is used, then it is exercised mainly when it comes to the decision of having a central agreement or not with a supplier.

**4.3.2 Supplier relationships**

When the company uses a single supplier for a product or service purchased, they have occasional contacts with the supplier, only to improve their agreements for this product or service. When there on the other hand only is one supplier available on the market, then the company establishes a close relationship. The company then has close and continuous contact with the supplier. This is done due to the fact that they are dependent
on this supplier and because they together with this supplier want to develop the product and production processes for both parties in order to lower their total costs.

Also when it comes to the use of parallel suppliers the company wants to keep a close and long-term relationship. The reason for keeping this kind of relationship is connected with the complexity of the product. The products with central agreements are often complex and therefore a close relationship where collaboration can take place is desirable. Furthermore, Skanska wants to enhance the possibility to develop these products together with the suppliers so that they will fit better to the different construction projects that the company is part of. It is also central to the company to develop a relationship where both parties work together towards one common goal, to make the production processes more efficient and thereby lowering the total costs for both parties.

When several suppliers are used for the supply of a product the relationships are often short and casual. These relationships often only lasts for one project at a time, but might be repeated if a new project will be carried out in that region. When several suppliers are used for the supply of material, Skanska tries to find good quality to low costs, whereas they make quotation for possible suppliers which will compete against each other and Skanska will gain the surplus.

The suppliers of Skanska are registered in the company’s web based purchasing-portal called IBX. This portal enables them to exchange electronic information about orders and products requests with their suppliers. It is also a mean for facilitating and maintaining relationships with these suppliers.

4.4 Electrolux Laundry Systems Sweden

Electrolux Laundry Systems which is located in Ljungby is a manufacturer of professional washing machines and tumble dryers. Electrolux Laundry Systems is also a part of the Electrolux Corporation which is a world leading appliance

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The corporation is well established and in 2008 Electrolux had a turnover of SEK 105 billion and a workforce of 55,000.¹³⁸

Electrolux’s products are divided in two categories, household appliances and professional appliances. The household appliances part represents the biggest product category and include products for kitchen, laundry and floor-care. The professional product line only represents seven percent of Electrolux’s production. The products within this part are kitchen and laundry products and are manufactured in three facilities in Sweden, France and Thailand.

Electrolux Laundry Systems has an extensive purchasing as material for SEK 500 million a year is purchased and the purchased material represents approximately 60 percent in the total cost for the end-products.

### 4.4.1 Sourcing strategies

One of the strategies that Electrolux Laundry Systems uses is to have at minimum two different suppliers that can supply each item. One of these suppliers supplies the item to the company and the other supplier acts as a reserve supplier. This reserve supplier does not sell products to Electrolux if the main supplier does not have problems in supplying the products.

To ensure that there exists an alternative supplier, the company is ready to travel all around the world just to find and approve a reserve supplier. If the item is unique and a certain machine is needed for the supply of the item, a contact is already established with the reserve suppliers. In order to be a reserve supplier, the supplier has to have the same kind of machine or machines that can manufacture identical items as the ordinary supplier can. An example of an item for which the company makes contact with a reserve supplier in this way is the pulley. If the item on the other hand is a more standardized item with no special needs when it comes to the suppliers machines, the reserve suppliers are localized but no contact is established between Electrolux Laundry Systems and these reserve suppliers.

¹³⁸ Electrolux’s Annual Report 2008, p. 3
Electrolux owns in many cases the rights for the design of the specific items that are being manufactured by the suppliers. This together with the fact that they always have identified reserve suppliers make it less complicated and less expensive for them to replace a supplier if needed.

The reason for having the explained strategy with two suppliers that have the ability to supply the items is because of their “business recovery plan”. This plan needs to be presented to the insurance companies. It is very important for the company to secure supply since they use Just In Time to a large extent and only have a safety stock covering two days of production. If the supply would run out, the whole production would stop which would be devastating for the company in terms of financial losses.

Within the explained strategy, Electrolux uses two different ways of sourcing. One way is to use only one supplier for each product. The other way is to use several suppliers on an item group level and then one single source for the single item. Mainly it is single sourcing that is used for each item, but to some extent there are a few suppliers that supply products on an item group level as well. The reason for having this strategy is that there is no supplier that can supply the whole item groups that are needed by Electrolux. Approximately 90 percent of the purchased products and components are supplied with the use of several suppliers on item group level and then one supplier for the single items within the group. An example of a product group that this applies to is plastic details that are tool-bounded. The remaining ten percent of the supply is made by using one supplier for each item instead of several. Examples of products that use this kind of sourcing strategy are straps and hose-clips.

One reason for only having sourcing strategies that have one supplier per item is because of Electrolux’s IT-system. The use of this system is much easier to handle if the company just order a particular item from one supplier.

4.4.2 Supplier relationships
Electrolux Laundry Systems do not have their focus on purchasing their products to the lowest price possible. Instead they want to secure a low total cost and a high ability to deliver from the supplier. This is important to the company as their sourcing strategies are characterized by only having one supplier per item at a time. A closer relationship
with continuously interaction is therefore preferable to facilitate the supply of products. However, the company does not want to become too dependent on one supplier and therefore they make sure to own the rights for several of the items they purchase from a supplier. By doing so, there is a disadvantage that the company will have to pay a higher purchase price to the supplier since the supplier in this case do not have the right for the product. On the other hand, Electrolux Laundry Systems protect themselves from being dependent on the single supplier, since they can then replace the current supplier when it becomes necessary.

Electrolux Laundry Systems tries to have the same kind of relationships to their suppliers. This can be shown in the agreements made with the suppliers. The company has a general agreement with clauses that are structured in the same way for all suppliers. However, a difference in the relationship can be noticed in how the relationship looks like when it comes to the reserve suppliers. When reserve suppliers to standardized items is considered, the potential suppliers are only located, while a contact and a close relationship is established with suppliers of more critical items.

Electrolux’s supplier relationships can also be characterized as long-term relationships. This as the general agreements does not have a predetermined end. The agreements continue until a problem arises or if Electrolux finds a more preferable supplier.

The company tries to have more than a transactional relationship with its suppliers, but their relationships cannot be characterized as close. Electrolux has continuous interaction with their suppliers and this closer relationship facilitates for example to take advantage of the suppliers’ knowledge when product development is taking place.

Electrolux has too many suppliers to create a very close relationship with them. This as it would require too much time and costs from the company to manage this. As Electrolux Laundry Systems is considered as a big customer for many of the company’s suppliers, more emphasis on creating closer relationships is made by the suppliers.

The company also uses a matrix when determining the sourcing strategies and the supplier relationships. The matrix is built according to two parameters, product criticality and supply criticality (see Figure 4.2). When a specific product is critical for
the manufacturing process and the supplier is critical for the supply of the product, the product is placed in the upper right corner (box 2). Example of a product can be the pulleys. In this case, the company tries to get a reserve supplier so that they do not become that dependent on their main supplier and it becomes easier to change supplier if it is needed, as explained earlier. The characteristics of the relationship are also affected as more intense relationship is needed with the suppliers in this situation.

When a product is not that critical for the manufacturing process and the supply of the product is not critical, the product is placed in the bottom left corner (box 3). The products placed here do not need the same treatment as the products placed in the upper right corner. This as no reserve suppliers are established a less extensive relationship with the products suppliers is needed. Examples of these products can be nails and screws. When the products are placed in the other boxes (boxes 1 and 4) the company has a limited contact with the potential reserve suppliers for these products. Little effort is put on this and no agreements are made.

4.5 ASKO Appliances

Asko Appliances is a white good manufacturer that sells their products worldwide. Most of the products are exported to Norway, Denmark, Holland, Russia, USA, Canada, New
Zeeland and Australia. Despite the company selling their products all over the world and having Swedish origins, the company has not launched products with their own name Asko in Sweden until 2009.

The company has 900 employees and the head office is placed in Jung outside Vara in Sweden. The company also manufactures products for other white good producers. One example of this is that Asko manufactures products for the brand Cylinda which is owned by Elektroskandia.

Asko has 150 different suppliers of direct material and the annual value of purchased products and components represents 50 percent of their turnover which is approximately one billion SEK.

### 4.5.1 Sourcing strategies

Asko Appliances uses mainly one supplier per product and the strategy is used for 75 percent of their total purchasing value. Also 140 out of the company’s 150 suppliers are placed within this strategy. From the beginning, more than one supplier can supply a specific product or component. When then one supplier is chosen by the company, the manufacturing process and end-products are adapted to the supplier’s product. No other supplier can therefore sell their product that fulfills the same purpose to the company and Asko becomes dependent on the chosen supplier. Examples of products that are being purchased with this strategy are electronic and rubber components which are used in the manufacturing.

Using one supplier per item is used as by far the biggest sourcing strategy because only one investment in a supplier for a product is needed. This is seen as cost efficient since switching a supplier is expensive. As Asko’s end-products are unique and as explained before, adapted to the suppliers’ products, the investments in the suppliers are extensive. Another advantage that can be gained by using the sourcing strategy at Asko is the economies of scale that can be achieved when big volumes are being purchased from one supplier.

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140 Ibid.
More than one supplier per item is also used when purchasing is made. Approximately five to ten percent of the purchased products are supplied with this strategy. The products that are purchased with this strategy are steel which is used in the end-products. The price becomes a bigger factor when deciding which suppliers that are going to be chosen when more than one supplier is used per item compared to the strategy with one supplier per item. Other factors that determine the choice of a supplier, regardless sourcing strategy are costs, the technology used in the products, quality, security in the deliveries, future status of the supplier and environmental aspects. Usually it is the design engineer and purchaser that determine which suppliers that are going to be used. Another procedure is done when it comes to supplier selection for the important products where the whole company does a joint decision, but this only refers to five percent of the selection occasions.

4.5.2 Supplier relationships

Asko Appliances tries to have close and long-term relationships with suppliers that are used in the strategy of one supplier per item. As mentioned earlier, the company is dependent on these suppliers as they often become the only supplier that can supply the specific products that the end-products are adapted to. So having this kind of relationship is important as it is expensive to switch these suppliers.

When the company decides what kind of relationship that is suitable with a supplier, Kraljic’s matrix is used. Asko have been using this matrix during the last ten years. The suppliers are being placed in the Kraljic’s matrix instead of the products. Most of the suppliers that the company uses only one supplier for are placed as “bottleneck suppliers” as the profit impact for one of these suppliers are relatively low and there is only one supplier that can supply the specific products.

Asko also tries to have long term relationships with the steel suppliers that are within the strategy where more than one supplier supplies the product, but not to the same extent as with the suppliers that supplies a product by them selves to the company. This as Asko is not that dependent on the steel suppliers. These suppliers are also placed as “leverage suppliers” as much steel is purchased from each supplier which means that the purchasing costs related to these suppliers are high. The steel suppliers are also
placed as “leverage suppliers” as there are a number of suppliers for this product. See Figure 4.3.

![Figure 4.3: Asko’s use of Kraljic’s matrix](source)

Source: Own modification from Van Weele, A (2005) p. 150

The agreements made with the suppliers are as the relationships intended to be long-termed as well. Most of the agreements are made for at least twelve months and continues as well after this if there is no circumstances that end the agreement. The agreements with the suppliers that alone supplies a product are more extensive than among the others. This as for example more emphasis in the agreement is given to plausible problems that may occur from the purchased products or components. If the products for example in any way cause danger to the end-customer, Asko have the right to return these products and get a compensation for all the costs that are related to this particular product.

Evaluations of the suppliers are mainly made for improving the relationship between the two parts. The results of this can either lead to that both the supplier and Asko need to improve within some areas or just one of them in order to improve the outcome of the relationship.

### 4.6 Whirlpool Sweden

Whirlpool Sweden is a part of Whirlpool Corporation which is the world’s leading manufacturer of home appliances including products within cooking, refrigeration,
dishwashers, and water filtration. These products are sold in nearly every country around the world under the brands Whirlpool, Maytag, KitchenAid, Jenn-Air, Amana, Bauknecht, Brastemp and Consul.\textsuperscript{141}

The company’s business is conducted through four segments which are defined geographically. These segments consist of North America (57\% of revenue), Europe (21\% of revenue), Latin America (19\% of revenue), and Asia (3\% of revenue).\textsuperscript{142}

Whirlpool Sweden is located in the city of Norrköping. Here Whirlpool has a facility that manufactures microwaves.

4.6.1 Sourcing strategies

Whirlpool Sweden has to a great extent one supplier for each purchased product. Approximately 80\% of the company’s purchased products are supplied in accordance to this. One example of a product that is supplied with only one supplier is a transformer that is a part of the company’s finished products. The company also purchases products that can not be supplied from more than one supplier. Products as special glass material and steel décor can be examples of these kinds of products. However, these products that only can be purchased from just one supplier do not represent a big part of the total number of purchased products, approximately three percent. Most of the purchased items can therefore be supplied from more than one supplier. Hence, the company has the ability to choose the supplier that best fulfills their requirements.

In most cases when a supplier is selected to alone supply a product to the company, the manufacturing process and microwaves of Whirlpool are then adapted to the supplier’s product. To replace these kinds of suppliers is therefore difficult. This is the case because negotiations with new suppliers and changes in the production are then needed which require both much time and costs from the company. An alternative supplier can therefore not immediately replace a chosen supplier that alone supplies products for which the end-products are adapted to.

\textsuperscript{141} http://www.whirlpoolcorp.com/about/overview.aspx (2009-05-11)
\textsuperscript{142} Whirlpool’s Annual Report 2008, p. 83
Whirlpool uses also at occasions a sourcing strategy where two suppliers are used to supply a product. The company can then play these suppliers against each other in order to get the best agreement as possible out of for example a price perspective.

Furthermore, Whirlpool Sweden’s sourcing of products can also be characterized by that several different suppliers supply products on an item group level and each product within these groups are supplied from only one supplier. This also applies to approximately 80 percent of the purchased products. Within the strategy, Whirlpool uses two different ways of sourcing. One supplier is used for each item. Then several suppliers on an item group level. However, it is single sourcing that is mainly used for each item, but to some extent there are a few suppliers that can supply products on an item group level as well. Having this strategy is justified by the fact that there is available supplier that can supply the whole item groups that are needed by Whirlpool.

4.6.2 Supplier relationships

Whirlpool does not determine the relationships that are going to be held with their suppliers based on how many suppliers that supply a purchased product. Instead the desirable relationships are based on other factors that the company determine as relevant when deciding relationship level with suppliers. One factor that impacts the classification of the suppliers is the purchasing volume. If the company purchases a big volume of products from one supplier, a more extensive relationship with this supplier is then prioritized than if the supplier just sells a small volume of items to the company. Based on the different factors taken into account, the suppliers are classified as strategic or non strategic suppliers based on the importance of the supplier. Whirlpool tries to have a more long-term and close relationship with the suppliers that are classified as strategic and less with the non strategic suppliers.

When supplier relationships and sourcing strategies are determined, Kraljic’s matrix is applied to a small extent. Even though the matrix is not used when supplier relationships are determined for a specific supplier, the same kind of thinking as the Kraljic’s matrix highlights are applied.
This chapter is divided in three parts. First the theories are compared to the empirical data concerning the sourcing strategies used in the studied companies, their reasons for having these strategies and the relationships they have with their suppliers. Then the companies within each industry are compared to each other. Finally the chapter ends with a comparison of the two industries regarding the practices in terms of sourcing strategies and supplier relationships.

Following is the first step of the analysis. The empirical data from every company are compared to the theory. This will enable to identify what kinds of sourcing strategies that are used in these companies and why they are being used. Additionally, the use of the Kraljic’s matrix in the studied companies will be analyzed in order to understand the links with sourcing strategies and supplier relationships. Furthermore the connection between sourcing strategies and supplier relationships will be discussed.
5.1 Sourcing Strategies

5.1.1 PEAB

When involved in a construction project, PEAB uses several suppliers to purchase 80% of the materials needed. This means that a multiple sourcing strategy is being applied at the company. The reason why the company uses a number of suppliers for one product is that one supplier may not always be able to deliver exactly the products that meet the end-customer quality specifications. Hence, this is linked with the theory that highlights the ability of risk elimination of non-fulfilled quality requirements when using multiple suppliers for one product.

A dual sourcing strategy is used when the company has two suppliers for supplying a product. In this case, one supplier can provide items to the company on a national level and the other one on a regional level. This strategy is used by PEAB to get more preferable purchasing due to the convenience of purchasing. The company’s main objective in using dual sourcing is therefore not the same reasons that are brought up in the theory.

In some cases PEAB uses one supplier that provides different products with similar characteristics. The company therefore uses single group sourcing. The company uses this strategy because they can then coordinate the purchasing and thereby reduce the administrative costs. PEAB also sees this as a convenient way of purchasing, which actually enables them to achieve economies of scale since large amounts of products are supplied by these suppliers. This outcome can be linked with the theory that highlights that economies of scale can be achieved by purchasing a high volume from one supplier. For some products like plaster that necessitate specific requirements, PEAB prefers to work with only one supplier to do some specific developments in order to meet the customers’ expectations. Hence, the applied strategy is single sourcing. This

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146 Ibid.
147 Ibid. p. 205
148 Ibid.
way of working closely with the supplier enables the company to use supplier’s knowledge to improve product development.\(^\text{150}\)

<table>
<thead>
<tr>
<th>Sourcing strategies</th>
<th>Reasons</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single sourcing</td>
<td>Specific products that need product development</td>
</tr>
<tr>
<td>Single group sourcing</td>
<td>Coordination of the purchasing, reduction of administrative costs</td>
</tr>
<tr>
<td>Dual sourcing</td>
<td>Convenience of purchasing national versus regional</td>
</tr>
<tr>
<td>Multiple sourcing</td>
<td>During a project, only one supplier cannot meet the requirements of the final customer</td>
</tr>
</tbody>
</table>

**Figure 5.2:** Sourcing strategies at PEAB

### 5.1.2 NCC Construction Sweden

Multiple sourcing is being used at NCC Construction Sweden as they have to a great extent several suppliers for supplying one product.\(^\text{151}\) The use of this strategy is motivated by the same reason as mentioned for PEAB. Likewise, it is linked with the theory that underlines the quality issues as a reason for using several suppliers for one type of item.\(^\text{152}\)

The company also uses dual sourcing as a strategy when two parallel suppliers are used to supply a product.\(^\text{153}\) NCC uses dual sourcing in order to develop an increased competition among suppliers and decrease its dependency on one supplier. This is also in accordance with the theory.\(^\text{154}\)

NCC also uses a sourcing strategy where one supplier supplies different products with similar characteristics. Hence, single group sourcing is being applied at the company.\(^\text{155}\)

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\(^{154}\) Ibid.  
\(^{155}\) Ibid. p. 205
The reasons why NCC uses this strategy are similar to the ones pointed out by PEAB. Similarly they are also linked with the theory\textsuperscript{156}.

The single sourcing strategy is also used when NCC uses one supplier per product\textsuperscript{157}. A single source is here used for enhancing the product development. This benefit is also highlighted in PEAB’s case which is recognized by the theory\textsuperscript{158}. Situations when only one supplier can supply a specific item also occur in NCC’s case. Therefore a sole sourcing strategy exists in this construction company\textsuperscript{159}.

<table>
<thead>
<tr>
<th>Sourcing strategies</th>
<th>Reasons</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single sourcing</td>
<td>Specific products that need product development</td>
</tr>
<tr>
<td>Sole sourcing</td>
<td>Only one supplier is available in the market</td>
</tr>
<tr>
<td>Single group sourcing</td>
<td>Coordination of the purchasing, reduction of administrative costs</td>
</tr>
<tr>
<td>Dual sourcing</td>
<td>Decrease dependency on one supplier, avoid material shortages</td>
</tr>
<tr>
<td>Multiple sourcing</td>
<td>During a project, only one supplier cannot meet the requirements of the final customer</td>
</tr>
</tbody>
</table>

\textbf{Figure 5.3:} Sourcing strategies at NCC

\textbf{5.1.3 Skanska Sweden}

Due to the large number of projects carried out by Skanska, multiple sourcing is applied at the company as they use several suppliers for the supply of one product\textsuperscript{160}. The reason that several suppliers are used due to the many projects is not in accordance with what is said in the theory about reasons for using several suppliers for one product\textsuperscript{161}.

\textsuperscript{157} Mattsson, S-A. (2000) pp. 243-244
\textsuperscript{159} Jonsson, P. & Mattsson, S-A. (2005) pp. 204-205
\textsuperscript{160} Ibid. p. 200
However the other reason for using several suppliers, the variance in the customer demands is in accordance with what has been stated by PEAB and NCC, whereas a connection can be made to the theory when it comes to the reasons for using this strategy\textsuperscript{162}.

The company also uses two suppliers in parallel for the sourcing of some products, which implies a use of dual sourcing\textsuperscript{163}. Skanska uses this strategy for securing supply and becoming less dependent on a supplier just as NCC does, and this is in compliance with the theory\textsuperscript{164}. Another reason for using dual sourcing in Skanska is because it makes it possible to standardize solutions. By using standardized solutions, the company is able to lower their number of suppliers. A smaller number of suppliers can then enable the company to reduce its total costs\textsuperscript{165}.

The use of a single supplier for the supply of an item, is also present at the company. Thereby the company also uses a single sourcing\textsuperscript{166}. The theory also states that single sourcing is used to gain a closer relationship with more collaboration which is used to benefit both parties\textsuperscript{167}. At Skanska the reason is another, they instead use a single source for gaining a lower price due to economies of scale. This however is also a reason for why companies use single sourcing\textsuperscript{168}.

At Skanska one product, bitumen is purchased by a single supplier only because there is no other supplier available on the market. Therefore there is also a use of sole sourcing strategy\textsuperscript{169}.

\begin{footnotesize}
\textsuperscript{162} Owens-Swift, C. (1995) p. 105
\textsuperscript{164} Ibid.
\textsuperscript{165} Mattsson, S-A. (2000) pp. 244-248
\textsuperscript{166} Ibid. pp. 243-244
\textsuperscript{168} Mattsson, S-A. (2000) pp. 244-248
\end{footnotesize}
5.1.4 Electrolux Laundry Systems Sweden

Electrolux Laundry Systems strategy is to have a minimum of two suppliers for each item to secure the supply of every item. This way of sourcing is in accordance with multiple and dual sourcing. However, the company does not work at the same time with all the suppliers, most of them act as reserve suppliers. It can thereby be argued that the reasons that motivate their strategy are not in accordance with what the theory states about dual sourcing. On the other hand, the fact that Electrolux uses several suppliers to secure the supply of products can be linked with the benefits of multiple sourcing. Furthermore, it can be seen that the company uses several sources on an item group level and a single source for the single items to an extent of 90 percent of the supplied products. This way of sourcing is in accordance with hybrid sourcing.

The reason for having hybrid sourcing as a strategy is that there is no supplier that can supply the whole item groups that are needed by Electrolux. By using this strategy, Electrolux is able to take advantage of the benefits of single sourcing to continuously improve product development. Simultaneously they also gain benefits of multiple sourcing.

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sourcing as they can secure supply of products. These benefits are highlighted in the theory about hybrid sourcing\textsuperscript{174}.

The remaining ten percent of the company’s sourcing is single sourcing as there is one supplier per product\textsuperscript{175}. The utilization of the strategy is justified by the fact that it facilitates to the use of the company’s IT system. This can be linked to the theory which states that single sourcing can enable to lower administrative and other purchasing related costs\textsuperscript{176}.

<table>
<thead>
<tr>
<th>Electrolux Laundry Systems</th>
<th>Sourcing strategies</th>
<th>Reasons</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Single sourcing</td>
<td>Lower administrative costs</td>
</tr>
<tr>
<td></td>
<td>Hybrid sourcing</td>
<td>No supplier able to supply the whole item groups</td>
</tr>
</tbody>
</table>

\textbf{Figure 5.5:} Sourcing strategies at Electrolux

\textbf{5.1.5 ASKO Appliances}

The white goods company Asko Appliances chooses to use one supplier per product for 75 percent of their purchasing value. Before a supplier for needed products is chosen by the company, more than one supplier is available on the market for these products. Still, Asko uses only one of these suppliers. Therefore it can be seen as single sourcing according to the theory. However, when the company chooses to purchase a product from one supplier, the manufacturing process and end-products are adapted to the supplier’s product. Other suppliers can not sell exactly the same products, the chosen supplier then becomes the only one that can supply the product. This is a self chosen decision made by the company. The strategy can therefore be classified as a sole sourcing strategy\textsuperscript{177}. The self chosen sole sourcing is also mentioned in the theory when one separate supplier is chosen to develop and manufacture a special item that is only interesting for the buying company\textsuperscript{178}. However, the fact that a company adapts the manufacturing process and end-products to the supplier’s product, which is the case for

\textsuperscript{176} Mattsson, S-A. (2000) pp. 244-248
\textsuperscript{177} Jonsson, P. & Mattsson, S-A. (2005) pp. 204-205
\textsuperscript{178} Ibid.
Asko, is not mentioned in the theory. Asko’s reasons for using sole sourcing that are highlighted in the theory are reduced administrative costs related to purchasing and achievable economies of scale when purchasing a large amount of products from one supplier\(^\text{179}\).

When raw material as steel is purchased by the company, more than one supplier is used to supply the product. The strategy multiple sourcing is then applied\(^\text{180}\). A reason for using this strategy is also that companies want to play out suppliers against each other in order to get a better price.\(^\text{181}\) This is also the case for Asko Appliances as the price is a big parameter when choosing steel suppliers.

<table>
<thead>
<tr>
<th>ASKO Appliances</th>
<th>Sourcing strategies</th>
<th>Reasons</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Sole sourcing</td>
<td>Only one investment in a supplier is needed for a product, cost efficiency</td>
</tr>
<tr>
<td></td>
<td>Multiple sourcing</td>
<td>Create competition between suppliers in order to have better prices</td>
</tr>
</tbody>
</table>

Figure 5.6: Sourcing strategies at Ask

5.1.6 Whirlpool Sweden
Whirlpool Sweden chooses to have mainly one supplier per purchased item. Approximately 80 percent of the purchased products are bought with this strategy. Since the manufacturing process and microwaves of Whirlpool are adapted to the supplier’s product, no other supplier is then able to sell a product that directly can replace the product of the chosen supplier. The chosen supplier therefore becomes the only supplier that can supply the product. This situation is in accordance with the sole sourcing strategy\(^\text{182}\). Whirlpool also adapts their manufacturing process to their suppliers, just as Asko does. Therefore it can be argued that they use a self chosen sole sourcing strategy. Sole sourcing is also used for a few products for which Whirlpool can not choose

\(^{181}\) Burk, G.J. et al. (2007) pp. 96-97
between different suppliers at all since there is only one supplier available on the market\textsuperscript{183}.

At occasions, the company uses two suppliers to supply a product. This way of sourcing products is therefore a dual sourcing strategy\textsuperscript{184}. Whirlpool Sweden uses this strategy in order to play these suppliers against each other in order to get the best agreement possible. This reason is also highlighted in the theory about dual sourcing\textsuperscript{185}.

Whirlpool Sweden also uses, to approximately 80 percent of the purchased products, several different suppliers supply products on an item group level and only one available supplier to each product within the groups. This is in accordance with the hybrid sourcing strategy\textsuperscript{186}. The reason for having hybrid sourcing as a strategy is that there is no supplier able to supply the whole item groups that are needed by the company. Using this strategy enables Whirlpool to take advantage of the benefits of single sourcing. Simultaneously they also gain benefits of multiple sourcing as they can secure supply of products. These benefits are highlighted in the theory about hybrid sourcing\textsuperscript{187}.

<table>
<thead>
<tr>
<th>Sourcing strategies</th>
<th>Reasons</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sole sourcing</td>
<td>Adapt to suppliers’ products and for some products only one supplier is available in the market</td>
</tr>
<tr>
<td>Dual sourcing</td>
<td>Create competition between suppliers in order to have better prices</td>
</tr>
<tr>
<td>Hybrid sourcing</td>
<td>No supplier able to supply the whole item groups</td>
</tr>
</tbody>
</table>

\textbf{Figure 5.7:} Sourcing strategies at Whirlpool

\textsuperscript{184} Ibid. p. 206  
\textsuperscript{185} Ibid. p. 206-207  
\textsuperscript{186} Ibid.  
\textsuperscript{187} Ibid. pp. 206-207
5.1.7 Summary of sourcing strategies in the studied companies

<table>
<thead>
<tr>
<th>Sourcing strategies</th>
<th>Single</th>
<th>Sole</th>
<th>Single group</th>
<th>Dual</th>
<th>Multiple</th>
<th>Hybrid</th>
</tr>
</thead>
<tbody>
<tr>
<td>PEAB</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>NCC</td>
<td>x</td>
<td></td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>SKANSKA</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>ELECTROLUX</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>ASKO</td>
<td></td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>WHIRLPOOL</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td>x</td>
</tr>
</tbody>
</table>

Figure 5.8: Overview of sourcing strategies in the studied companies

The above table gives an overview of the sourcing strategies used in the companies where this study is being carried out. Totally, it is noticeable that the practices differ from one industry to another, since some sourcing strategies are more used in one industry than in the other.

5.2 Suppliers Relationships

5.2.1 PEAB

The relationships with suppliers are not determined according to the types of sourcing strategies. Generally speaking, PEAB does not take any actions to create and maintain relationships with their suppliers. The supplier relationship can therefore be seen as having a moderate supplier contact, simple buyer-seller relationship and little sharing of information which can be found in the theory\(^\text{188}\). These characteristics refer to the traditional relation\(^\text{189}\). Moreover as there is no real cooperation or long term agreements between the company and its suppliers, these suppliers can be classified as conventional suppliers according to the theory about levels of relationships\(^\text{190}\).

Moreover PEAB thinks that due to its large size, it is up to the suppliers to do efforts to maintain the relationships. According to the theory about buyer-supplier relationship types, these relationships can be defined as adversarial arm’s length with the buyer.

\(^\text{190}\) Ibid. p. 228
dominance\textsuperscript{191}. Furthermore the power is in the side of PEAB because of its large size and its capacity to buy big volumes. Hence the supplier is dependent on PEAB.

However there is an exception for the single sourcing strategy when PEAB works with the supplier responsible of the specific developments needed for the plaster. In this case, PEAB needs to maintain the relationship since the plaster products are made on a continuous basis. The relationship here is therefore collaborative. In accordance with the theory about buyer-supplier relationship types, this relationship can be classified as non adversarial collaborative with an interdependence between the buyer and the supplier\textsuperscript{192}. Furthermore according to the theory about levels of relationships, this supplier can be classified as a partnership supplier since the relationship involves a close collaboration in plaster product development and a frequent exchange of information\textsuperscript{193}. This relationship also meets the characteristics of partnership relationship as presented in the theory\textsuperscript{194}.

<table>
<thead>
<tr>
<th>Sourcing strategies</th>
<th>Nature of the relationship</th>
<th>Type of supplier</th>
<th>Type of relationship</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single</td>
<td>Partnership relationship</td>
<td>Partnership supplier</td>
<td>Non adversarial collaborative (Interdependence)</td>
</tr>
<tr>
<td>Sole</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>S. group</td>
<td>Traditional relationship</td>
<td>Conventional supplier</td>
<td>Adversarial arm's length (Buyer dominance)</td>
</tr>
<tr>
<td>Dual</td>
<td>Traditional relationship</td>
<td>Conventional supplier</td>
<td>Adversarial arm's length (Buyer dominance)</td>
</tr>
<tr>
<td>Multiple</td>
<td>Traditional relationship</td>
<td>Conventional supplier</td>
<td>Adversarial arm's length (Buyer dominance)</td>
</tr>
<tr>
<td>Hybrid</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

\textbf{Figure 5.9:} Supplier relationships at strategies at PEAB

\textsuperscript{192} Ibid.
\textsuperscript{193} Jonsson, P. \& Mattsson, S-A. (2005) p. 228
\textsuperscript{194} Lysons, K. \& Farrington, B. (2006) p. 224
5.2.2 NCC Construction Sweden

In general the relationships of NCC with their suppliers are not determined according to the types of sourcing strategies. Instead the foundation of these relationships is the importance of suppliers in terms of costs for the company.

Due to fluctuating prices, bankruptcies among suppliers and to make sure not to face material shortages, short-term contracts are used at the company. NCC also tries to have a little distance to their suppliers in order to not become dependent on one supplier, which is shown by for example the use of dual sourcing. In some cases they also use their purchasing system to locate and make a purchase from a supplier suitable in this case without any larger efforts in keeping contacts. These factors show that within the company the traditional view of relationship is being used. However, this is not always seen in the relationships at the company. It is not always low collaboration because of the use of short-term contracts. Instead the level of collaboration can be high even when short-term contacts are used. As a result of the fact that the purchasing manager has as a strategic goal to lower the purchasing costs by five percent each year, collaboration is practiced with important suppliers. Together with these suppliers the company tries to locate ways of lowering the costs of purchased products. A closer relationship is practiced with these suppliers and more contact is utilized. These factors are in accordance with what the theory highlights about partnership relationships.

NCC has a collaborative way of working with mainly the larger suppliers that stands for the main part of the purchasing costs. Since the company together with these suppliers tries to find a way of lowering costs for both buyer and supplier, a win/win situation arises and the companies shares the surplus value that arises. This is what the theory calls a non adversarial collaborative way of working with suppliers. Nevertheless, the company also has suppliers that they do not have such a close relationship with and in some cases NCC even competes with these suppliers about the surplus value since they play them against each other. This way of working with suppliers is by the theory named as adversarial arm’s length with buyer dominance.

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198 Ibid. p. 138
NCC has different kind of suppliers. For example they have suppliers in their purchasing system that they make occasional orders to. With these suppliers the company has no cooperation or agreements with. The theory states this level of suppliers as conventional suppliers\(^{199}\). Even though long-term agreements are not being carried out, the relationships utilized are often long-term. Furthermore, the company has suppliers from which they have a continuous flow with when it comes to orders and deliveries. The companies also work together in order to lower costs. These characteristics are in accordance with what the theory call associate suppliers\(^ {200}\). Finally, the company has suppliers that have the same characteristics as the associate suppliers, but for which they also utilize a common product development. This level of suppliers is characterized as partnership suppliers in the theory\(^ {201}\).

<table>
<thead>
<tr>
<th>Supplier Relationships</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nature of the relationship</td>
</tr>
<tr>
<td>NCC Construction Sweden</td>
</tr>
<tr>
<td>&quot;Important&quot; suppliers</td>
</tr>
<tr>
<td>Occasional suppliers</td>
</tr>
</tbody>
</table>

Figure 5.10: Supplier relationships at strategies at NCC

### 5.2.3 Skanska Sweden

The relationships of Skanska with their suppliers can be linked to the sourcing strategies used to supply the products.


\(^{200}\) Ibid.

\(^{201}\) Ibid.
With the suppliers used for the single sourcing strategy, the company has only occasional contacts in order to improve the agreements decided for the products or services. This kind of relationship can be considered as traditional relationship, as it is a simple buyer-seller relationship characterized by a moderate supplier contact\textsuperscript{202}. Moreover this kind of suppliers is classified by the theory as conventional supplier since there is no real cooperation between the buyer and suppliers\textsuperscript{203}. Furthermore there is an arm’s length distance between Skanska and the suppliers, and the company is quite independent of the suppliers since the relationship does not create that much surplus value to be shared. According to the theory about buyer-supplier relationship types, this relationship is therefore an adversarial arm’s length with buyer dominance\textsuperscript{204}.

When it comes to the relationships used for the sole sourcing strategy, they are characterized by continuous contact with the suppliers, a closer collaboration in order to improve product development and production processes. These relationships can be characterized as close and intimate relationship, which is in accordance with partnership relationship\textsuperscript{205}. As a result, due to the product development and the frequent exchange of information between the partners, the supplier is identified by the theory as a partnership supplier\textsuperscript{206}. Moreover this close relationship enables Skanska and the suppliers to create a surplus value that can be shared by both parties. This is in compliance with what the theory says about non adversarial collaborative relationship with interdependence between the buyer and the supplier\textsuperscript{207}.

Regarding the dual sourcing strategy, due to the complexity of products, a close collaboration with suppliers is needed in order to enhance product development and lower the related costs. This kind of relationship is named a partnership relationship by the theory\textsuperscript{208}. Consequently, the supplier is classified as partnership supplier\textsuperscript{209}. Additionally the close relationship allows the company to collaborate with the suppliers and create a surplus shared value. This is defined by the theory about buyer-supplier

\textsuperscript{204} Cox, A. et al. (2003) p. 138
\textsuperscript{206} Ibid. p. 229
\textsuperscript{207} Cox, A. et al. (2003) p. 138
relationship types as a non adversarial collaborative relationship with interdependence between the partners\textsuperscript{210}.

As for the relationships with the suppliers used in the multiple sourcing strategy, there are casual and short-term oriented as they mainly last for the duration of the construction project. These kinds of relationships are named by the theory as traditional\textsuperscript{211}. Accordingly, the suppliers are classified as conventional suppliers as there is no cooperation or agreements established between the parties\textsuperscript{212}. Furthermore based on the relationship, the buyer is quite independent and do not rely that much on the supplier, what is called by the theory an adversarial arm’s length with buyer dominance\textsuperscript{213}.

<table>
<thead>
<tr>
<th>Skanska Sweden</th>
<th>Sourcing strategies</th>
<th>Nature of the relationship</th>
<th>Type of supplier</th>
<th>Type of relationship</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single</td>
<td>Traditional relationship</td>
<td>Conventional supplier</td>
<td>Adversarial arm's length (Buyer dominance)</td>
<td></td>
</tr>
<tr>
<td>Sole</td>
<td>Partnership relationship</td>
<td>Partnership supplier</td>
<td>Non adversarial collaborative (Interdependence)</td>
<td></td>
</tr>
<tr>
<td>S group</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Dual</td>
<td>Partnership relationship</td>
<td>Partnership supplier</td>
<td>Non adversarial collaborative (Interdependence)</td>
<td></td>
</tr>
<tr>
<td>Multiple</td>
<td>Traditional relationship</td>
<td>Conventional supplier</td>
<td>Adversarial arm's length (Buyer dominance)</td>
<td></td>
</tr>
<tr>
<td>Hybrid</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
</tbody>
</table>

\textbf{Figure 5.11:} Supplier relationships at strategies at Skanska

### 5.2.4 Electrolux Laundry Systems

At Electrolux laundry systems the sourcing strategies are not the basis for which relationship to keep with the different suppliers. Instead the importance of the product for the production process together with the availability of suitable suppliers are the main factors affecting the relationship.

\textsuperscript{210} Cox, A. \textit{et al.} (2003) p. 138
\textsuperscript{213} Cox, A. \textit{et al.} (2003) p. 138
The company does not have their focus on purchasing an item to the lowest price possible, instead they focus on the suppliers’ ability to deliver and a lower total cost. Furthermore they prefer to have long-term relationships with no predetermined end and also have a high level of supplier contact in order to avoid shortages of supply. These factors are in accordance with what the theory says about the use of partnership in a relationship rather than only a traditional relationship. However, the company uses reserve suppliers for each single item and for these reserve suppliers the relationship is different depending on the importance of the item. Some of the items are more critical for the production than others and these critical items need a close collaboration and high level of contact with the reserve supplier. Other items, that are not as critical for the production, do not need this high level of collaboration and supplier contact. Therefore the relationship utilized for these products is more in accordance with what the theory states about a traditional relationship. Moreover, as these items are not critical, the company is quite independent. This relationship is identified by the theory on buyer-supplier relationships as an adversarial arm’s length with buyer dominance.

The relationships exercised by Electrolux laundry systems with their suppliers are to a large extent characterized by long-term agreements, and orders and deliveries are made continuously. This is in harmony with what has been found in the theory when it comes to using associate suppliers. In some cases however, it has been noticed that the company do not have only an associate supplier relationship. In fact in these cases, the company and the supplier work together in order to develop the product supplied. This closer relationship enables Electrolux to take advantage of the supplier’s knowledge to enhance the product development. This way of working is supported by the theory, which classifies this kind of suppliers as partnership suppliers. Additionally, according to the theory about buyer-supplier types, this relationship can be considered as non adversarial collaborative with an interdependence between the company and the supplier, as the surplus value created during product development is shared.

\[215\] Ibid.
\[216\] Cox, A. et al. (2003) p. 138
\[218\] Ibid.
\[219\] Cox, A. et al. (2003) p. 138
As mentioned in the empirical data, Electrolux is using a matrix for determining sourcing strategies and supplier relationships. This matrix can be considered as a modification of Krajlic’s matrix since the profit impact can be compared to the product criticality, and the supply risk to supplier criticality\textsuperscript{220}. If a product is placed in the upper right box in the company’s matrix, it is an important product that requires a reserve supplier. This can be in accordance with the upper right box in Kraljic’s matrix as it refers to strategic products that have high technology that often implies closer interaction with the suppliers\textsuperscript{221}. When a product is placed in the bottom left corner in the Electrolux’s matrix it refers to products that are standardized and have a number of suppliers. Similarities can then be seen with routine products that are placed also in the bottom left corner of the matrix that also have many suppliers\textsuperscript{222}. For the other two boxes in the Electrolux’s matrix no similarities can be seen with the theory of Kraljic’s matrix\textsuperscript{223}.

<table>
<thead>
<tr>
<th>Supplier Relationships</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Nature of the relationship</strong></td>
</tr>
<tr>
<td>Critical product</td>
</tr>
<tr>
<td>Non critical product</td>
</tr>
</tbody>
</table>

**Figure 5.12:** Supplier relationships at strategies at Electrolux

### 5.2.5 ASKO Appliances

Asko Appliances tries to have close and long-term relationships with suppliers that are used in the sole sourcing strategies. This as the company is dependent on these suppliers

\textsuperscript{221} Ibid. pp. 150-151
\textsuperscript{222} Ibid. p. 151
\textsuperscript{223} Ibid.
when they become the only supplier that can supply the specific products that the end-products are adapted to. The relationships with the suppliers within the sole sourcing strategy can therefore be seen as collaborative because the company tries to have a close relationship and purchase much from the suppliers which means that the company is an important customer. The surplus of the relationship is also shared when using the sole strategy. This as Asko Appliance prefers to have one supplier per item from mainly a cost perspective and the suppliers get a big company as a customer that purchase large volumes. Hence, according to the framework for buyer and supplier relationships in the theory, the relationship can be seen as non adversarial collaborative\textsuperscript{224}. Asko Appliances also tries to have long-term agreements with the suppliers and are also dependent on them as their production process is adapted to the suppliers’ products. This is then in accordance with having partnership suppliers\textsuperscript{225}. The long-term agreements and close relationship makes it also a partnership relationship between the parties\textsuperscript{226}.

With the suppliers used in the multiple sourcing strategy, mainly steel suppliers, the company also tries to have long-term relationships and agreements but not as extensive as with the suppliers used for sole sourcing. Another thing that also differs from the suppliers in the sole sourcing strategy is that the price of the steel is also one of the biggest focuses when selecting supplier. The price aspect suits with the theory about conventional suppliers\textsuperscript{227}. The longer-term of relationship with the suppliers is in accordance with the partnership relation\textsuperscript{228}. However, the fact that the relationships with the steel suppliers are less extensive than the suppliers used in sole sourcing plus that the purchasing price has a bigger focus makes it more a traditional view of relationship\textsuperscript{229}.

Asko Appliances does not have partnership with the suppliers within the multiple sourcing strategy and the surplus value of the relationship is mainly on the buyer’s side. Furthermore, Asko is quite independent and do not rely that much on the supplier. This is named by the theory an adversarial arm’s length with buyer dominance\textsuperscript{230}.

\textsuperscript{224} Cox, A. \textit{et al.} (2003) p. 138
\textsuperscript{226} Ibid. pp. 220-221
\textsuperscript{227} Ibid. p. 229
\textsuperscript{228} Ibid. pp. 220-221
\textsuperscript{229} Ibid.
\textsuperscript{230} Cox, A. \textit{et al.} (2003) p. 138
Asko Appliances uses Kraljics’ matrix and place the suppliers in the matrix. The suppliers used in the sole sourcing strategy are placed as “bottleneck suppliers”. As mentioned before the company tries to have long-term partnership with these suppliers. This action is also in accordance with the actions of securing supply for “bottleneck products” that the theory presents\textsuperscript{231}. The suppliers used in the multiple sourcing strategy are placed as “leverage suppliers”. The company’s actions for these suppliers are also in accordance with the theory, as the price is in focus in front of partnership\textsuperscript{232}.

<table>
<thead>
<tr>
<th>Sourcing strategies</th>
<th>Nature of the relationship</th>
<th>Type of supplier</th>
<th>Type of relationship</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single Sole</td>
<td>Partnership relationship</td>
<td>Partnership supplier</td>
<td>Non adversarial collaborative (Interdependence)</td>
</tr>
<tr>
<td>Single S. group</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Dual</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Multiple</td>
<td>Traditional relationship</td>
<td>Conventional supplier</td>
<td>Adversarial arm's length (Buyer dominance)</td>
</tr>
<tr>
<td>Hybrid</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

\textbf{Figure 5.13:} Supplier relationships at strategies at Asko

\subsection*{5.2.6 Whirlpool Sweden}

Whirlpool Sweden does not determine the relationships that are going to be held with their suppliers based on the sourcing strategies. The company’s classification that makes a supplier strategic or non strategic is instead the main thing that determines what kind of supplier relationships that are going to be established. Whirlpool tries to have long-term agreements and close relationships with the suppliers that are classified as strategic. The relationships that are being exercised with these suppliers can therefore be seen as partnership relationships\textsuperscript{233}. The long-term agreements and the supplier

\textsuperscript{231} Caniels, M. Gelderman, C. (2007) p. 222  
\textsuperscript{232} Van Weele, A. (2005) p. 151  
relationships are also in accordance with the theory about partnership suppliers\textsuperscript{234}. Additionally, the relationships can be perceived as non adversarial collaborative with an interdependence between the company and the supplier as none of the parts can be seemed as dominant\textsuperscript{235}.

Whirlpool has less extensive relationships and shorter agreements for the non strategic suppliers. The relationships with these suppliers can therefore be classified as traditional relationships according to the theory\textsuperscript{236}. The shorter agreements are also in accordance with the level of conventional suppliers\textsuperscript{237}. Due to the fact that Whirlpool is less dependent on the non strategic suppliers, the relationship can be seen as an adversarial arm’s length relationship in the framework for buyer and supplier relationship\textsuperscript{238}.

<table>
<thead>
<tr>
<th>Supplier Relationships</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Nature of the relationship</strong></td>
</tr>
<tr>
<td>Strategic suppliers</td>
</tr>
<tr>
<td>Non-strategic suppliers</td>
</tr>
</tbody>
</table>

*Figure 5.14: Supplier relationships at strategies at Whirlpool*

\textsuperscript{235} Cox, A. \textit{et al.} (2003) p. 138  
\textsuperscript{237} Ibid. p. 229  
5.2.7 Summary of supplier relationships in the studied companies

<table>
<thead>
<tr>
<th>Companies</th>
<th>Supplier relationships</th>
</tr>
</thead>
</table>
| PEAB                  | **Single sourcing strategy:** partnership relationship, non adversarial collaborative relationship (interdependence)  
                          **Single group, dual and multiple sourcing strategies:** traditional relationship, adversarial arm's length relationship (buyer dominance) |
| NCC Construction Sweden | **"Important" suppliers:** partnership relationship, non adversarial collaborative relationship (interdependence)  
                                **Occasional suppliers:** traditional relationship, adversarial arm's length relationship (buyer dominance) |
| Skanska Sweden        | **Single and multiple sourcing strategies:** traditional relationship, adversarial arm's length relationship (buyer dominance)  
                          **Sole and dual sourcing strategies:** partnership relationship, non adversarial collaborative relationship (interdependence) |
| Electrolux Laundry Systems | **Critical products:** partnership relationship, non adversarial collaborative relationship (interdependence)  
                                **Non critical products:** traditional relationship, adversarial arm's length relationship (buyer dominance) |
| Asko Appliances       | **Sole sourcing strategy:** partnership relationship, non adversarial collaborative relationship (interdependence)  
                          **Multiple sourcing strategy:** traditional relationship, adversarial arm's length relationship (buyer dominance) |
| Whirlpool Sweden      | **Strategic suppliers:** partnership relationship, non adversarial collaborative relationship (interdependence)  
                          **Non strategic suppliers:** traditional relationship, adversarial arm's length relationship (buyer dominance) |

**Figure 5.15:** Overview of supplier relationships in the studied companies

The above table gives an overview of the supplier relationships used in the companies where this study is being carried out. Totally, it can be seen that these relationships do not necessarily have a direct link with the sourcing strategies. Moreover, some similarities and differences can be found between companies in each industry.
5.3 Comparison between companies

In this section, the second step of the analysis is presented. The main similarities and differences in terms of practices regarding sourcing strategies and supplier relationships among manufacturers within each industry will be underlined. Furthermore, the reasons that justify their choices will be discussed, as well as the links between sourcing strategies and supplier relationships.

Figure 5.16: Illustration of the second step of our analysis

5.3.1 Construction industry

Sourcing strategies

<table>
<thead>
<tr>
<th>Sourcing strategies</th>
<th>PEAB</th>
<th>NCC</th>
<th>SKANSKA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Sole</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single group</td>
<td>x</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Dual</td>
<td>x</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Multiple</td>
<td>x</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hybrid</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Figure 5.17: Overview of sourcing strategies in the construction industry

PEAB, NCC Construction Sweden and Skanska Sweden all use single, dual, and multiple sourcing strategies. PEAB and NCC have single group sourcing but Skanska has not. Additionally, PEAB is the only construction company that does not use sole sourcing as a strategy.
Both PEAB and NCC use the single sourcing strategy because of the specificity of some products. Using single sourcing facilitates a close collaboration with the suppliers, which is required for product development. At NCC products are developed continuously in collaboration with single suppliers. This enables them to lower costs and therefore achieve their strategic goal of reducing costs by a target of five percent per year. However, PEAB uses product development with the single suppliers mainly on an occasional basis. The only exception for this is that continuous development with a single supplier is made with the plaster products due to the customer requirements and legislation. For Skanska, single sourcing is also used for lowering costs since the company is then able to gain economies of scale when purchasing large volumes. It can be seen that NCC and Skanska have a common focus for the use of single sourcing, which is to reduce costs. However, a difference can be seen about the ways the two companies try to achieve this cost reduction. Skanska mainly focuses on gaining economies of scale due to ordering large quantities, while NCC takes it one step further by working closer together with the suppliers. Thereby a win/win situation is created between NCC and its suppliers. It can be argued that this way of working with single sourcing is preferable since a competitive advantage can be achieved\textsuperscript{239}. Going a step further by involving the single supplier in product development may enable Skanska to achieve similar benefits as NCC. On the other hand, it can be argued that PEAB could look further than only meeting legal requirements or customers expectations. By working more closely with the suppliers, the product development can be enhanced with a goal of reduced costs.

Regarding the dual sourcing, both NCC and Skanska use this strategy as a means for avoiding the dependency on a single supplier. However they differ in the sense that NCC’s other reason is to develop competition between suppliers to obtain better prices. On the other hand Skanska does it to secure supply and lower their number of suppliers in order to reduce costs. As for PEAB, their reasons for using dual sourcing differ from NCC and Skanska since their main focus is the convenience of purchasing. Apart from PEAB, the reasons highlighted by NCC and Skanska are in compliance with theory\textsuperscript{240}. 

Concerning the multiple sourcing strategy, the three companies have one reason in common to explain the use of this strategy, which is the fact that during a project the final customer decides about the products specifications. As most often one supplier is not able to meet those needs, several suppliers are therefore required. This sourcing strategy is also the most used one since it represents up to 80 percent of purchases at PEAB and NCC, and up to 60 percent for Skanska. However, Skanska is reducing the numbers of suppliers per product by offering standardized solutions for their customers. By doing this, Skanska takes advantage of economies of scale by buying large volumes from one supplier. Moreover, administrative costs for example can be lowered since the number of suppliers is reduced\textsuperscript{241}.

Similarities can also be found when using the sole sourcing strategy. But this strategy is only used by NCC and Skanska. At the two companies, this strategy is being used because there is only one supplier available in the market for one of their needed products. Therefore they are dependent on these suppliers.

Single group sourcing strategy is also being applied at PEAB and NCC. Both companies use it because it enables to coordinate purchasing, reduce administrative costs and achieve economies of scale since large volumes of products are bought from these suppliers.

\textsuperscript{241} Mattsson, S-A. (2000) pp. 244-248
Supplier relationships

<table>
<thead>
<tr>
<th>Companies</th>
<th>Supplier relationships</th>
</tr>
</thead>
</table>
| **PEAB**           | Single sourcing strategy: partnership relationship, non adversarial collaborative relationship (interdependence)  
                     | Single group, dual and multiple sourcing strategies: traditional relationship, adversarial arm's length relationship (buyer dominance) |
| **NCC Construction Sweden** | "Important" suppliers: partnership relationship, non adversarial collaborative relationship (interdependence)  
                     | Occasional suppliers: traditional relationship, adversarial arm's length relationship (buyer dominance) |
| **Skanska Sweden** | Single and multiple sourcing strategies: traditional relationship, adversarial arm's length relationship (buyer dominance)  
                     | Sole and dual sourcing strategies: partnership relationship, non adversarial collaborative relationship (interdependence) |

**Figure 5.18:** Overview of supplier relationships in the construction industry

Regarding the suppliers relationships, the three companies do not determine them according to the sourcing strategies. However, some parameters such as the suppliers’ importance or the companies’ goals when working with suppliers can influence this decision.

At PEAB, they do not focus on developing relationships with suppliers. They believe it should be the job of the suppliers. As a result partnership relationships are only developed with suppliers of single sourcing strategy because of the developments of products that are needed due to the specificity of certain projects and legislations. For the other sourcing strategies, the relationships are just traditional. Actions that are implemented to maintain and develop the relationships with the partnership suppliers are product development together with the suppliers, frequent exchange of information and utilization of a purchasing web-based portal to enhance transactions and deepen collaboration. For the other categories of suppliers, no actions are done.

Conversely NCC and Skanska aim to develop close relationships with their suppliers. At Skanska for example, they have partnership relationships with suppliers for sole and
dual sourcing strategies. The sourcing strategies where they have a traditional relationship are the single and multiple sourcing. Examples of actions to continue developing the relationships with partnership suppliers are close collaboration with suppliers to enhance product development, improve manufacturing process, maintaining long term relationships and utilization of the purchasing web-based portal for frequent information exchange. As for NCC, the company works closely with the suppliers that represent the highest costs for the company. They develop partnerships with these suppliers. Examples of actions implemented are renegotiation of agreements with suppliers, closer collaboration to improve and develop products in order to lower the purchase prices and improvement of manufacturing processes. For the products that represent less cost for the company, the level of collaboration with suppliers is often low, no efforts are done to keep contacts and the perspective is mainly short term oriented.

The main similarity within the companies is that they have more conventional suppliers and traditional relationships due to the high percentage of purchases realized with the multiple sourcing strategy. Regarding the differences, there are about the reasons that motivate what types of relationships are suitable to have with their suppliers. Additionally, it can be noticed that NCC and Skanska are more focused on having close relationships, whereas PEAB only has close relationships with the supplier for single sourcing because they are dependent.

It has been noticed in the three companies that the sourcing strategies were not necessarily linked directly to the supplier relationships. However, the desired benefits of companies affect the supplier relationships, and this can be linked to the used sourcing strategies. For example when companies aim to develop a product together with a supplier, collaboration and close relationship are needed. Hence, this can be achieved through a single sourcing strategy²⁴².

5.3.2 White goods industry

Sourcing strategies

<table>
<thead>
<tr>
<th></th>
<th>Single</th>
<th>Sole</th>
<th>Single group</th>
<th>Dual</th>
<th>Multiple</th>
<th>Hybrid</th>
</tr>
</thead>
<tbody>
<tr>
<td>ELECTROLUX</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>ASKO</td>
<td></td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>WHIRLPOOL</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td>x</td>
</tr>
</tbody>
</table>

*Figure 5.19: Overview of sourcing strategies in the white goods industry*

Similarities can be found here between Asko Appliances and Whirlpool Sweden that use sole sourcing strategy, and Electrolux Landry Systems and Whirlpool that are using hybrid sourcing strategy. The main similarity of these three companies is the use of a single supplier to purchase their needed products.

The use of sole sourcing at Ask and Whirlpool is a self-chosen decision since they decide to adapt their manufacturing process to the supplier products. This creates a dependence on the suppliers and a necessity to work closely with them. Electrolux also uses a single source for the supply of material. The difference is that Electrolux develops the design of products together with the suppliers, and then the suppliers’ production process is adapted to Electrolux needs. Furthermore, the company owns the design and can therefore easily replace the supplier with one of their reserve suppliers. This avoids them to become dependent on one supplier, which is the case for Asko and Whirlpool. However, a drawback with Electrolux’s strategy of securing a reserve supplier is that it takes much time and efforts. Asko and Whirlpool only need to concentrate on finding one supplier.

Hybrid sourcing is being exercised by both Electrolux and Whirlpool. They have a similar reason which is the unavailability of a supplier that can meet their needs in supplying a whole product group. Moreover, as this strategy combines both single and multiple sourcing, the companies can take advantage of the benefits brought by the different sourcing strategies.

Both Asko and Whirlpool use more than one supplier to supply a product. Asko uses the multiple sourcing strategy to play different suppliers against each other in order to get a
lower price. This is the same reason that Whirlpool has when they use dual sourcing as a strategy. Electrolux does not have more than one supplier per product but the fact that they have reserve suppliers can also enable them to play suppliers against each other. Electrolux is also securing supply of products by having a reserve supplier at hand, a benefit that also Asko and Whirlpool can receive when they use more than one supplier per product.

Supplier relationships

<table>
<thead>
<tr>
<th>Companies</th>
<th>Supplier relationships</th>
</tr>
</thead>
</table>
| **Electrolux Laundry Systems** | **Critical products**: partnership relationship, non adversarial collaborative relationship (interdependence)  
Non critical products: traditional relationship, adversarial arm's length relationship (buyer dominance) |
| **Asko Appliances**     | Sole sourcing strategy: partnership relationship, non adversarial collaborative relationship (interdependence)  
Multiple sourcing strategy: traditional relationship, adversarial arm's length relationship (buyer dominance) |
| **Whirlpool Sweden**    | Strategic suppliers: partnership relationship, non adversarial collaborative relationship (interdependence)  
Non strategic suppliers: traditional relationship, adversarial arm's length relationship (buyer dominance) |

Figure 5.20: Overview of supplier relationships in the white goods industry

Concerning the supplier relationships, they are determined by different factors between the three companies. For example at Electrolux the criteria for determining the supplier relationships are the importance of the product for the manufacturing process and the availability of the suitable supplier. When the product and supply are critical, there is a need to work closely with the supplier to avoid shortages. Therefore a partnership relationship is established. Examples of actions implemented are continuous contacts, product development by taking advantage of the suppliers’ knowledge. For the non critical products, the relationships with the suppliers are just traditional and no particular actions are made to enhance them.
For Whirlpool, the suppliers are classified as strategic or non strategic depending on their perceived importance by the company. As a result, the strategic suppliers are identified as partnership suppliers and the relationships are collaborative. For non strategic suppliers, the relationships are more traditional since Whirlpool is not that dependent on these suppliers. These relationships can also be characterized as adversarial arm’s length with the buyer dominance\textsuperscript{243}.

To some extent Whirlpool and Electrolux ways of working can be linked. Indeed, depending on the product criticality, Electrolux determines the importance of the suppliers. This suppliers’ importance can be linked to the notion of strategic and non strategic suppliers used by Whirlpool. It can therefore be argued that Whirlpool and Electrolux use a similar approach when it comes to decide what kind of relationships to have with their suppliers.

Asko chooses to have close relationships only with the suppliers of sole sourcing strategy. These relationships are also identified as non adversarial collaborative since an interdependence exists between the two partners. For the multiple sourcing strategy, the suppliers are just considered as conventional. This is explained by the fact that Asko just want to play out the suppliers against each other to gain better prices. It is noticeable that Asko works in a different way compared to Electrolux and Whirlpool since the company does not categorize the suppliers as much based on their own parameters and then decide the suitable type of relationship to be used. Instead Asko applies Kraljic’s matrix to a large extent when they categorize their suppliers and decide relationships with them. Nevertheless, Asko also modifies Kraljic’s theory as suppliers are being placed in the matrix instead of the products. Electrolux also uses a matrix for their parameters that can be linked to Kraljic’s matrix, but the axes and classification of the products are not exactly as the theory\textsuperscript{244}.

The main similarity within the companies in this industry is the close relationship they develop with their single supplier. This close relationship is explained by the dependence on the supplier and the necessity to continuously enhance the product

\textsuperscript{244} Van Weele, A (2005) p. 150
development. As for the differences, they rely mainly on the way the companies determine the relationships to be established with their suppliers.

The sourcing strategies in the three companies are not necessary linked directly to the supplier relationships. Instead the desired benefits with the suppliers that the companies have affect the supplier relationships. These expected benefits can be linked to the used sourcing strategies. For example when the companies aim to develop a product together with a supplier, collaboration and close relationship are needed. Hence, this can be achieved through a single sourcing strategy.

5.4 Comparison between industries

In this part, the last step of the analysis is presented. The main similarities and differences concerning the use of sourcing strategies and supplier relationships among manufacturers in the two industries will be highlighted. This will allow identifying patterns that exist in the two industries, and the links that can be found between sourcing strategies and supplier relationships. Furthermore, some areas where the two industries can learn from one another will be highlighted.

Figure 5.21: Illustration of the third step of our analysis

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Similarities
It has been found that companies within the two industries use several sourcing strategies when it comes to the purchasing of their products. None of them only uses one strategy. A possible reason for this might be the differences in product characteristics, which can lead to having different sourcing strategies since the desired benefits are not the same. For some specific products, a close collaboration with supplier will be needed for product development. Therefore it is easier to manage this with a single supplier. For standardized products without high value, companies will prefer to play out suppliers against each other to gain better prices. Hence a multiple sourcing strategy will be used for these kinds of products.

It has also been noticed that the companies have different relationships with different suppliers. There is a connection between the use of sourcing strategy and what kind of supplier relationship that is being exercised. However, it has been found that the sourcing strategy used do not determine what kind of relationship that is being exercised with the supplier. Neither is it the supplier relationship utilized that determines what sourcing strategy to use. Instead it is the different benefits the companies want to achieve that decide what relationship that is needed and thereby the sourcing strategy is also affected. The sourcing strategies therefore do not influence the supplier relationships.

Differences
As a starting point it is noticeable that in both industries companies use more than one sourcing strategy to purchase their products. However, in the construction industry four to five sourcing strategies are used per company whereas in the white goods industry only two strategies are used per company. A possible explanation for this difference might be the diversity of projects in the construction industry that leads to the necessity to have many suppliers and to mix the types of strategies used in order to have the best outcomes for the companies. This is shown by the fact that the multiple sourcing is the
most used strategy by the construction manufacturers. On the other hand, the fact that only few sourcing strategies are used in the white goods industry can be explicated by the tendency of a reduced number of suppliers and a higher degree of collaboration. This is highlighted by the extensive use of one supplier per item by Asko, Electrolux and Whirlpool. Although costs reduction is a subject of paramount importance in the two industries, it can be argued that it is easier to achieve this in the white goods industry since their first focus is to streamline the suppliers’ portfolio. This is a result of a closer and more collaborative relationship with their suppliers and their ability to work together, towards the goal of lowering the total costs. It can thereby be argued that such a close and collaborative relationship can lead to a competitive advantage on the market\textsuperscript{246}.

Another disparity that also can be highlighted is the use of sole sourcing strategy. It has been noticed that for the companies within the white goods industry, having a sole sourcing strategy is a self chosen decision. This is the case since Asko and Whirlpool adapt their manufacturing process to the supplier products. Therefore they choose to be dependent on the supplier, which can be questioned. The companies then take a bigger risk for their manufacturing process if the only supplier that they have is no longer reliable. On the other hand, for the construction manufacturers, the sole sourcing strategy is used simply because there is only one supplier available on the market.

Other differences can be found regarding the supplier relationships among the two industries. It has been noticed that in the white goods industry the relationships are closer and companies collaborate more with suppliers than the construction manufacturers do. This might be linked with the fact that the white goods manufacturers mainly have a single supplier per item. Moreover, the fact that Asko and Whirlpool use sole sourcing creates a dependence on suppliers that requires close relationships. On the other hand, as construction manufacturers use to a great extent several suppliers, it is may be more difficult to develop closer relationships with all the suppliers.

It has been found that the Kraljic’s matrix is used in the studied companies within the two industries. However, the white goods industry uses it to a larger extent than the

construction industry. For example, Asko uses the matrix as it is explained in the theory, Electrolux uses a modified version of the matrix and Whirlpool has the thinking of the matrix. Among the construction companies NCC uses the matrix for decisions in big agreements, Skanska uses the thinking of the matrix whereas PEAB do not use it. The main purpose in the use of Kraljic’s matrix also differs between the industries. It can be seen that companies within the white goods industry use it mostly in determining the relationship levels with their suppliers and the companies within the construction industry use it in determining sourcing strategies. A reason for this might be because the white goods companies use mainly the same suppliers. Hence, the relationships are highlighted in the matrix instead of the sourcing strategies. At the same time, the construction companies frequently use different suppliers and therefore highlight more the sourcing strategies in the matrix. Apart from Asko that uses the original Krajlic’s matrix, in the other companies this matrix is modified. It can be argued that this is done since the companies have to adapt it to the realities they are facing. Therefore this is not in accordance with the Krajlic’s theory\textsuperscript{247}.

\textsuperscript{247} Van Weele, A (2005) p. 150
6. CONCLUSION

This chapter presents the results of our study. It is divided in three parts. First the answers to the research questions are provided. Also further recommendations are presented. Then some reflections about our thesis are made. Finally some suggestions for further research will be discussed.

6.1 Answers to the research questions

- What similarities and differences can be found between manufacturers in the construction and the white goods industries regarding sourcing strategies and supplier relationships?

Similarities
- Manufacturing companies within the two industries use several sourcing strategies when it comes to the purchasing of their products. None of them only uses one strategy.
- The companies within the two industries have different relationships with different suppliers.

Differences
- The use of several suppliers for one product is more common in the construction industry whereas in the white goods industry a single supplier for one product is more used.
- Costs reduction is an important issue in the two industries, but it is easier to achieve in the white goods industry because they focus more on reducing the number of suppliers in their portfolio.
In the white goods industry the relationships with suppliers are closer and companies collaborate more with suppliers than the construction manufacturers do.

The use of sole sourcing strategy is mainly a self chosen decision among the manufacturers within the white goods industry while it is determined by the market for the companies in the construction industry.

The Kraljic’s matrix is used in a different way in the two industries. The white goods industry uses it to a larger extent than the construction industry.

**Why are these sourcing strategies being used and how do they influence the supplier relationships?**

The sourcing strategies are used by the manufacturers in order to achieve their desired benefits.

Although there is a connection between the use of sourcing strategy and what kind of supplier relationship that is being exercised in some companies, sourcing strategies do not influence supplier relationships. Instead it is the different benefits the companies try to gain that determine what relationship is needed.

**How can the manufacturers in the two industries learn from each other regarding the use of sourcing strategies and supplier relationships?**

The construction industry could take after the white goods industry and extend their collaboration with suppliers. By starting closer relationships with a higher degree of collaboration, the companies can reduce the costs together with the supplier which gives a win/win situation for all parties. Furthermore there is a possibility to reduce the number of suppliers when using single sourcing to a larger extent. Thereby also the administrative costs can be reduced.

Since the manufacturers in the white goods industry to a great extent use a single supplier, they can take after the construction industry when it comes to use more than one supplier in order to secure supply.
6.2 Further recommendations

In addition to learning from each others’ industries, the studied companies within the white goods industry could learn from each other when it comes to avoiding dependency. In the same way the studied companies in the construction industry can learn from each other when it comes to have a more collaborative relationship with their suppliers in order to achieve a win/win situation.

6.3 Criticism to our thesis

In this master thesis we have used three large companies from each of the two industries that have been studied. The study could have been more relevant and interesting with a broader sample of companies. It could have given more consistency to our conclusions. Moreover, we could also have interviewed more people in each company to validate more easily the credibility of the empirical data. Furthermore, as our study focuses on large companies within each industry, it might be difficult to apply the findings to all the companies within the two industries.

6.4 Suggestions for future research

In order to verify or revise the findings of this thesis, a more extensive empirical research could be conducted. As more interviews and companies are used in the research, a more accurate picture of the situation in the two industries would be presented. Furthermore, scenario simulations could be conducted regarding the supply of a product in order to see how a manufacturing company would be affected. This would be of value for companies as preparations for possible situations would be facilitated. Another suggestion for future research can also be to link sourcing strategies to other areas than supplier relationships. One example of this can be to do a case study at a company and try to find the most preferable sourcing strategy out from a cost perspective for a certain product or service. This would be interesting as the purchasing related costs are important to handle in companies.
References

Articles


- 89 -


**Books**


Electronic sources
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**Interviews**

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Purchasing Manager at PEAB South, Mikael Johansson, (2009-05-04)

Purchasing Manager at Asko Appliances, Peter Jonsson (2009-05-07)

Purchasing Manager at Electrolux Laundry Systems, Jan Svensson (2009-05-08)

Manager Portfolio Interior at Skanska Sweden, Per Stark (2009-05-18)

Purchaser of Whirlpool Sweden, Ola Jonsson (2009-05-18)

**Annual reports**

PEAB’s Annual Report 2008

NCC AB’s Annual Report 2008

Skanska’s Annual Report 2008

Electrolux’s Annual Report 2008

Whirlpool’s Annual Report 2008
Appendix

INTERVIEW GUIDE

1. What types of sourcing strategies do you use?

2. Why do you use these strategies?

3. What factors affect the choice of sourcing strategy?

4. What kind of relationships do you keep with the companies used in each strategy?

5. What do you do to create and maintain these relationships?

6. Is the relationships affected by the characteristics of your industry?

7. What criteria do you use when selecting the suppliers? Do you use theoretical models?

8. Do you use different selection criteria for each sourcing strategy?

9. What kind of contracts do you have with your suppliers?

10. Do you have different contracts for the different sourcing strategies or relationships?

11. Percent of suppliers or products using each strategy.