



LUND UNIVERSITY
School of Economics and Management

Supply Chains - A Study of Collaboration for Eco- labeling

A case study – Focused on products and services ‘going green’

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2009-06-12

Acknowledgments

First, to our tutor Christer Kedström for guiding us through the process of writing and encouraging us when we got stuck, you have been of tremendous help. To the library of University of Lund, for helping us find the right books and journals.

To Hans Widstrand and Christer Lundh, for taking time to discuss and explain the variation of problems that can occur and for helping us get started. To all the company representatives who took time off for interviews and providing us with the material this thesis is built on.

Last but not least, to our families for supporting us during this hectic time.

Thank you.

Lund, 2009

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SAMMANFATTNING

Examensarbetets titel: Supply chains – a study of collaboration for eco-labeling.

Seminariedatum: 2009-06-05

Ämne/kurs: Examensarbete Magisternivå, Inriktning Strategisk ledning/Strategic Management, FEP01.
(15 ECTS)

Författare: Marcus Malveholm, Maria Nilsson

Handledare: Christer Kedström

Fem nyckelord: Supply-Chain Management, Konkurrensfördelar, Miljö hänsyn, Value Streaming och Samarbete.

Syfte: Syftet med uppsatsen är att undersöka, kartlägga och analysera effekterna av utveckling utav miljövänliga produkter och tjänster inom en leverantörskedja. Baserat på resultaten av en pilot studie syftar forskningen att analysera och förklara det empiriska materialet, insamlat via intervjuer med representanter från företag involverade i en leverantörskedja.

Metod: Forskningen karaktäriseras utav ett abduktivt förhållningsätt till en kvalitativ studie. Den kännetecknas av en case studie, där data insamlingen är genomförd via semi strukturerade intervjuer.

Teoretiska perspektiv: Med utgångspunkt i resultaten från pilot studien bygger författarna en teoretisk referensram via etablerade teorier av författare såsom Ford, Håkansson, Snehota, Lemmings och Hines.

Empiri: Utöver pilot studien innefattar forskningen fem företag från hotell och restaurang industrin, där samtliga företag är del i en och samma leverantörskedja.

Slutsatser: Baserat på en analytisk diskussion har författarna identifierat sex faktorer som har stor inverkan på samarbete för att kunna Svanen märka produkter och tjänster. Dessa faktorer används för att bygga upp en modell som illustrerar sambandet dem emellan. Modellen används därefter för att besvara problematiken i uppsatsen.

ABSTRACT

Title: Supply Chains – A Study of Collaborations for Eco-labeling.

Date: 2009-06-05

Course: Master thesis in Business Administration, Strategic Management
(15 ECTS)

Authors: Marcus Malveholm, Maria Nisson

Advisor: Christer Kedström

Five Key words: Supply-chain management, collaboration, environmental friendly, competitive advantage and value streaming.

Purpose: The purpose of this thesis is to investigate, map and analyze the effects of development of environmentally friendly products and services in a supply-chain. Based on the results of the pilot study, the research aims to analyze and explain the empirics gathered from interviews with representatives from companies involved in the same supply-chain.

Methodology: This research is characterized by an abductive approach for a qualitative study. It is a case study, based on a pilot study, where the data collection was gathered through semi structured interviews.

Theoretical perspectives: With the starting point in results gained from the pilot study, the authors build a theoretical framework using established theories from known researchers such as Ford, Håkansson, Snehota, Lemmings and Hines.

Empirical foundation: Besides the pilot study this research consists of five companies from the hotels and restaurants industry, all involved in the same supply-chain.

Conclusions: Based on an analytical discussion, the authors have identified six factors that are of importance for collaboration with the intention of eco-labeling. These factors are then used for building a model illustrating the connection in between them and for answering the posed research questions.

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1. Research Prelude

This chapter presents an introduction to the research conducted in this thesis. It involves the background from which research questions were formed, the focus and purpose of the research, limitations made and ends with the outline of the dissertation.

1.1 The Environment

In recent years the issues of man's impact on the climate, nature and its inhabitants have become a hot topic. Pollutions, increased consumption and the growing population of humans are said to each be contributing to global warming effects, the extinction of animal species and even changes in the weather. This in turn has caused some governments and industries to take action to prevent further damage to our planet by increasing taxes on waste intense industries, increased awareness of recycling and through innovative thinking some have even found use for other people's garbage.

Some companies have chosen to differentiate their products by labeling them environmentally friendly, or "green". Green products or services sends the message to the market that a particular company is caring for the environment, however the processes involved in making the product can be the reasons for a product being labeled green. The production processes of the final stage company in a supply chain may not be the reason for a green label, but rather its suppliers' processes.¹ As such, by looking into the integration, collaboration and development in supply chains of green labeled products or services, one can identify where in the service/production processes the products or components gain the green label.

¹ www.svanen.se, 2009-05-10.

In this era of awareness, some companies have taken greater steps than others in terms of making their services or products more environmentally friendly.² This in turn poses questions to be answered regarding how development and implementation of environmentally friendly production processes is done, as well as what implications such processes may have on a supply-chain or single company. In order to gain some basic understanding of this a pilot study was conducted. The preliminary findings from the pilot study serve as a base for building a theoretical framework and to help narrow down the wide array of questions and either confirm or reject suspicions. Some of the questions requiring answers prior to proceeding are:

- Does the development of environmentally friendly production processes generate value for the focal company, the supply-chain and its clients?
- Do companies realize value in environmentally friendly services or production processes?
- Are companies actively working alongside suppliers and clients to develop production processes or products/services that reduce the impact the company, or the supply-chain, have on the environment?

In order to answer these questions one must first define value. There are two types of value; the tangible financial value and the intangible value seen in for example reputation, relationships or working conditions. This research accepts both the tangible and the intangible definitions of value as correct, combining the two into one: Value is seen as something derived from improvements made in either tangible or intangible factors in an organization or entire supply-chain.

1.2 The Pilot Study

The company taking part in the pilot study is Proton Engineering, a subsidiary to Proton Group. Proton Group is a corporate group consisting of four subsidiaries, Proton Engineering, Proton Technology, Proton Finishing and Proton Lighting. The interviewed company representative was the head of Proton Engineering,

² Svanen, Anja Grunberg.

Christer Lundh, whose company works mainly towards the furniture and automotive industry, specializing in tube bending and welding. The goal of the pilot study was to get information of a project, initiated in 2007 by Proton Engineering and one of their customers, to create a green labeled surface treatment process which would allow the customer to label its furniture products with the Svanen label. Proton Finishing, a surface treatment company in the corporate group, was to house this new process and was also highly involved in the development of it. For simplistic reasons, both Proton Engineering and Proton Finishing will henceforth be referred to as Proton Group.

The findings from the pilot study shed a lot of light on the effects of green labeled production processes and its effect on supply chain value streaming and on competition. The interviewed company representative was highly involved in the project of creating the first Svanen labeled chrome surface treatment process in Scandinavia. The underlying reason for creating such a process was mainly due to requests and initiative of a client in the furniture industry, whom was later also involved in the specifications and upstart of the project. Furthermore the prospects of competitive advantages, reduced impact on the environment and the challenge of developing the first Svanen labeled chrome surface treatment process in Scandinavia served as motivating factors to go through with the investment. A time plan was set and the development began, however the project encountered a few obstacles during development and this caused the completion of the project to be delayed by seven months. The delay had serious impact on marketing opportunities of the new production process since the project was not complete by the time big furniture fair took place in early 2008.

In retrospect, the respondent said, the marketing of the new production process was not done properly to begin with. Instead of only targeting clients and customers, the company should have also targeted other instances on the market, such as designers and end consumers. This is something the company has only recently begun with and the response their process has received is increased demand on green labeled furniture, much thanks to the designers influence over new products as well as an increased demand from end consumers.

Proton Group was the first company in Sweden to introduce a Svanen labeled chrome surface treatment process and since the completion of the project in June 2008, several competitors have also developed or started to develop similar processes. The respondent of Proton Group stated that the result the new process yielded initially were slim, but believed to be due to it being done when “the time wasn’t right” for the kind of products this process supports. Today however, the time is definitely right, he says.

“Our investment has caused the market to increase requirements on suppliers and the demand for Eco- labeling of furniture has definitely increased, which is evident for us since we are working with clients whom are also working with competitors of ours. The environmental awareness of consumers has not only caused increased demand for green labeled furniture, but also caused companies to reduce their impact on the environment by making changes in production processes.³”

The Svanen labeled chrome surface treatment process has led to increased co-operations with clients, both new and old, something which the respondent believes not only being due to Proton Group being first on the market with such a process, but also due to now being the right time for the market.

“Even though the project has encountered many obstacles on the way to where we are today, it has proven well worth the efforts.⁴”

1.2.1 Results of the pilot study

The pilot study shed a lot of light on the development process, the underlying thoughts and reasons for the investment as well as the nature of collaboration that enabled the completion of the development. Drawing on the results of the pilot study, the questions initially posed were answered as follows:

- Does the development of environmentally friendly production processes generate value for the focal company, the supply-chain and its clients?

³ Christer Lund, Proton Engineering.

⁴ Christer Luns, Proton Engineering.

Yes. The company participating in the pilot study found that not only does the development of environmentally friendly production processes generate value for them in terms of competitive advantages and new opportunities, but also for their clients whom can now offer their customer base new, green, products. Therefore the collaboration between the supplier, the focal company and the client, generated value for the affected companies in the supply-chain.

- Do companies realize value in environmentally friendly production processes?

Yes. By being first on the market to develop an Eco-labeled chrome surface treatment process, the focal company alone controlled the possibility for clients in the furniture to Svanen-label their products by using the new production process. The price for using the new process was higher than that of a normal, non eco-labeled treatment process. However the resulting product from using the production process, the eco-labeled furniture, would in turn yield increased revenues and new marketing opportunities for the clients.

Financial items apart, the development of the eco-labeled chrome surface treatment also reduced the focal company's impact on the environment, which in itself holds great value not only for the company and its clients, but also for the people and environment surrounding the factory.

- Are companies actively working alongside suppliers and clients to develop production processes or products that reduce the impact the company, or the supply-chain, have on the environment?

Yes. The development of the eco-labeled chrome surface treatment was a result of collaboration between client, focal company and supplier. The initiative to development along with the specifications of the project was done by the focal company and one of its clients. By working together both companies saw interest and opportunities borne in the prospects of being first on the market with such a production process. Once decided upon the specifications, the focal company engaged the best suited chemicals supplier to be part of the development. The sharing of information and expertise from

all three involved parties enabled the collaboration to bear fruit in the form of the first eco-labeled chrome surface treatment production process in Sweden.

The answers to the initially posed questions has allowed for a better understanding of the nature of development of environmentally friendly production processes in a supply chain. The collaboration between partners resulted in a production process that later on spread to competitors who may have felt compelled to adjust their own production processes in order to meet the new demand for eco-labeled furniture. However the pilot study alone is not enough for understanding the complexity of supply-chain collaboration or co-development. By adhering to theories and results from previous research the real building of a theoretical framework can begin.

Long-term relationships where experience is accumulated between partners can result in more efficient and effective collaboration. (Sobrero and Roberts, 2002) Partners adapt to each other as they learn more about each others' processes, capabilities and true requirements over time. This enables suppliers to provide suggestions to development, which in turn allows for improvement in design and performance of parts or entire products. Therefore supplier involvement may also improve the manufacturing company's ability to differentiate its products and gain competitive advantages. Gadde and Snehota (2000), Wynstra, Van Weele and Weggeman (2001) argues that this can also lead to another long term benefit for the involved companies, where the creation of permanent access to suppliers' new technologies can be of strategic importance for future product development activities.

Being able to provide the market with green labeled products can allow a company to gain competitive advantages or it could be a necessity in order to keep up with the competition. However the heavy investments some production processes require in order to fulfill the requirements set by organizations distributing green labels, such as the Swan in Sweden, may be discouraging. The costs may be too high and the benefits too few. Still there are companies that choose to invest heavily into new technologies in order to achieve certified green standards. These developments may have a tendency to be done through collaboration with both clients and suppliers where information and

expertise is combined and shared in order to get the best result possible. This can also increase the integration and general cooperation between companies in a supply-chain, which in turn will increase the competitiveness and strength of the supply-chain.

“Long-term collaboration benefits can only be captured if a company can build long-term relationships with key suppliers, with which it builds learning routines and ensures that the capability of both parties are aligned and remain useful for future joint ventures.” (Wynstra, Echelt, Duysters and Van Weele. 2008)

From a strategic supply-chain management perspective, aligning suppliers and clients appears to be the best option when developing environmentally friendly production processes. In turn this can also cause value creation to spread throughout the supply chain, benefitting all participating companies. The conducted pilot study has granted a general idea of what affects co-development and value spreading in supply-chains, but it does not explain the complex nature of these actions. It has however, laid the ground for further research on this subject as well as generated research questions on which to build this thesis.

1.3 Research question(s)

How does the development of environmentally friendly products or services create and spread value for companies?

What parties are involved in the development of said products or services and how does the outcome affect them?

1.4 Research Purpose

The purpose of this thesis is to investigate, map and analyze the effects of development of environmentally friendly products and services in a supply-chain. Based on the results of the pilot study, the research aims to analyze and explain the empirics gathered from interviews with representatives from companies involved in the same supply-chain.

1.5 Creating the future today

The Nordic Ecolabel vision is a sustainable society, in which future generations can benefit from the same conditions and opportunities as we ourselves do⁵.

The Nordic Ecolabel or as it is called in Swedish “Svanen” or the SIF (in this research the definition will be Nordic Ecolabel, Svanen or SIF), is currently ever so present in the Nordic countries. It was introduced by the Nordic Council of Ministers and it has the mandate to promote a more sustainable consumerism with the goal of creating a sustainable society. It is directed to give the customer information about the products which they consume. If a product is labeled with the Nordic Ecolabel, then the product should have fulfilled certain criteria’s making it a good choice as considered the environment. The criteria’s include environmental, quality and health arguments and the system is based on voluntarism. To keep the label updated the license is only valid for four years, after which the company needs to reapply to get a new license. In by doing so the development can be held constant, and companies are not allowed to live on old merits.⁶

The Nordic Ecolabel has in recent years become a good source for competitive advantages. The increased environmental awareness amongst consumers and industries has lead to more products bearing the Nordic Ecolabel to emerge. Because of the constantly evolving criteria’s posed by the Nordic Ecolabel organization, companies seeking to attain this attractive label are forced to constantly develop better production processes, resulting in less impact on the environment.⁷ As such the Nordic Ecolabel is one major cause to why developing environmentally friendly production processes can result in both competitive advantages and value spreading in supply-chains.

⁵ www.svanen.nu 090418

⁶ www.svanen.se 2009-04-01

⁷ Respondent, Anja Grunberg, Svanen.

1.6 Dissertation out-line

As already registered by the reader this dissertation starts with an introduction to the dilemma of environmental products, its influences on business climate and its supply-chains. To further discuss and research this area, we have considered different methods of conducting the study and those are presented in the second chapter “how to conduct a study”. From doing to discussing is what chapter three is all about, here you as a reader will gain an insight to the academic world and theories discussed in the business area, with focus on strategic management, supply-chains and environmental innovations. In chapter four and five is where all the fun starts, collected material is presented, main problems/differences are discussed and an analysis is conducted. In the last chapters, we as authors discuss the analysis, the result, if the result is valid and how this the research has contributed both to the academic world as well as to the business world.

2 The Research Procedure

In this chapter the methodology is presented. First a discussion of the applied research philosophy and approach is presented, followed by choice of study, data collection, validity and credibility. It ends with a short summary.

2.1 Dependency on subject and what method to use

Once the investigation or research focus is established, one is to consider what kind of method to use when gathering data, what kind of data would be interesting to focus on and which answers are needed. Since this research has its focus objectives on the strategic management of environmental aspects in a supply chain, and how it could influence its involved parties. The authors have chosen to work with a qualitative method, to look deep into the researched area⁸. Comparing this method to the quantitative which is often used when collecting data in a broader perspective, we as researchers have decided that a more in-depth knowledge would be interesting for understanding and explaining the problems and questions surrounding the chosen topic.

As the research design is formed one have asked what is research design, and Yin (1989) commented as follows; *The design is the logical sequence that connects the empirical data to a study's initial research questions and, ultimately, to its conclusions. (p.28)*

To fulfill the statement made by Yin, we have chosen different types of approaches, which will enable the study to gain the best out-come. Decisions are made from this comment, how to connect the empirics with research questions to gain a conclusion.

⁸ Saunder *et alt.* 2007

One approach which is chosen in order to gain knowledge and to search into the problematic in a case study is as an interpretive perspective. This is commonly used in business and management research, as this. The interpretivist is focused on the complexity and differences between humans and their social roles⁹. This could be key-concepts when investigating a case or problem which is based on people's or managerial decisions and strategic acts, which is our case.

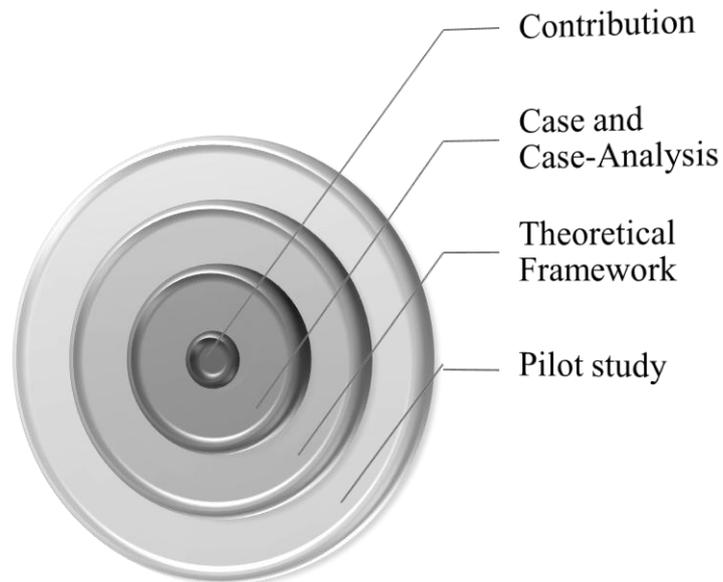
2.2 Usage of theory

Supply-chains and value steaming is a rather well researched area. This is to be considered when one is to search through and chose amongst the models and theories already established. Then one needs to think about how it would be interesting to further develop, test or contribute to them. In this research the theories are used as platforms, to sort out which theories are of most importance for the cases. For this reason the pilot study was of great help when forming the theoretical framework.

A discussion about how to search for information and theories about the environmental influences followed, which lead to the choice to consider research studies/theories, international laws and organizations which set environmental standards, such as the Nordic Eco-label. The chosen theories, the pilot study and the final cases are to interact with one and other to build the foundation for the analyzing of differences, similarities and to connect theory with reality. This is done in order to gain knowledge and to contribute to theoretical as well as managerial aspects. The figure below illustrates how this thesis is built.

⁹ Saunders *et alt* 2007

Figure 2.1 How to use the theory.



(Figure constructed by Marcus Malveholm and Maria Nilsson, 2009-05-17)

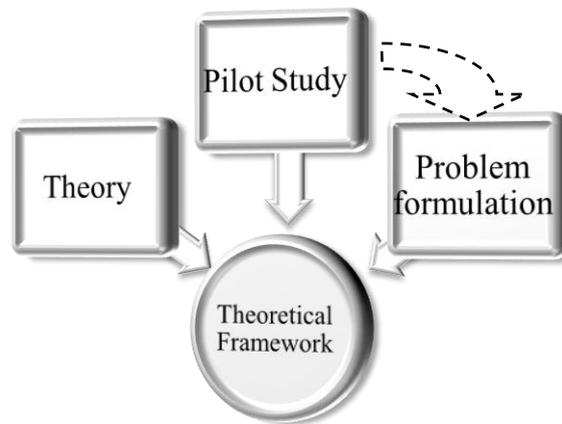
2.3 What kind of research

Combining research methods could be confusing, but while browsing extremist views such as the deductive- and the inductive approaches it is clear that this research will not abide to one of the two, but rather a combination. The research basically starts from theory, since it would be irresponsible of us to claim the discovery of a never before considered phenomenon. Some basic theoretical understanding was present prior to conducting the pilot study. Thus the choice of building the problem formulation and theoretical framework on a pilot study is not to be considered as an inductive approach¹⁰. Neither should the basic theoretical pre-understanding constitute a deductive approach. Since this research does not take on the identity of either of these two extremist views, even though there are signs of both being used, a combination of them is best suited. Thus this research

¹⁰ Saunders, *et. alt.* 2007.

takes on the identity of an abductive approach¹¹. The figure below demonstrates the mix of research approaches and the forming of the theoretical framework.

Figure 2.2 How to shape the theoretical framework



(Made by Marcus Malveholm and Maria Nilsson, 2009)

Building the theoretical framework, the foundation for analysis and contribution of this research, not only on existing theories, but also on practical problems and interests identified through the pilot study, the abductive approach becomes self-evident.

2.4 A Case Study

In order to further investigate the area of environmental influences and value streaming in the supply-chain, the way to conduct and search of empirics was discussed and concluded with a case study approach. This approach was chosen due to the fact that one supply-chain can be considered as a case. To search within the supply-chain and how the choice of being environmental friendly could influence different participant.

¹¹ Saunders *et. alt.* 2007.

A description of a case study;

By giving special attention to totalizing in the observation, reconstruction and analysis of the cases under study. Accordingly, a case study is an in-depth study of the cases under consideration, and this depth has become another feature of the case approach¹².

2.5 Respondents and Case Selection

For this research we chose a purposive, or judgmental, sampling which enabled us to use our judgments when selecting cases that would best match the research questions and objectives¹³. This form is most commonly used in small case samples studies where researchers select cases that are particularly informative (Neumann, 2000)¹⁴. The case profile is to be representative within its field. In order to find companies that would be representative; we contacted the ministry of Eco-labeling in Stockholm, which presented us with information of companies that could be representative. This could also be considered as a multi-stage sample¹⁵, which can be used in a specific group, as the population of companies presented by the Nordic Ecolabel. Whereas in multi-staging the groups are then divided into sub-groups, from which the final samples were chosen. The chosen companies are located in Sweden, they are all Eco-labeled companies and their supply-chains are a part of that. These companies were narrow down by the multi-stage approach through information from Anja Grunberg at the Nordic Ecolabel. The respondents of each company were chosen through area of expertise, which in this case was affiliation with eco labeling and its origin. Examples of such respondents were to be the CEO, marketing manager, environmental accountant/purchasing manager, salesperson and the end-customer. These are chosen because of their approach to environmental friendliness and their knowledge in this field.

¹² Jacques Hamel, Stephan Dufour and Dominic Fortin, Case Study Methods, *Qualitative research methods series 32*, Sage Publications, 1993.

¹³ John W Creswell, 1997.

¹⁴ Saunders *et alt*, 2007

¹⁵ Saunders *et alt*, 2007

2.5.1 A short presentation of the industry and respondents

The pilot study was focused in the furniture industry and thereby we had the intention to follow that industry in this research. However due to unforeseen circumstances the first choice of companies pulled out. This led us to contact the Nordic Ecolabel and with the help of them we were presented with companies active in the hotels and restaurants business. This business is rapidly accepting the idea of thinking-green, which made it a perfect choice for this research. One example is Swedish Meetings, which are labeling their conference facilities all over Sweden with the Nordic Ecolabel¹⁶ (shall be ready in 2010). Comparing that to the fact that in 2007-2008 there were only a handful of Nordic Ecolabel restaurants, hotels and conferences in Sweden, the development is going forward fast.

The respondents were chosen due to their expertise and their work experience in Eco labeling of their and other companies. The respondents are as follows;

- Hans Wiberg Diskteknik (Salesperson)
- Ulrika Jupiter (Purchasing and Environment) Cleano Ab
- Christian Giertha (Marketing) Swedish Meetings
- Ellika Mogenfelt (CEO) Villa Sjötorp
- Anja Grunberg (PR- Information) at the Nordic Ecolabel

A more detailed description of the respondents and their companies is to follow in chapter four.

2.5.2 About the interviews

The interviews were based on the knowledge gained from the pilot study, which helped forming the structure and objectives. However since the industries and answers vary a semi-structured, or so called open approach¹⁷, is recommended here. Being flexible will also give the respondent the freedom to speak out and talk freely on the subject, allowing for knowledge from a broad, in-depth perspective can be gathered. Since the respondent is to be considered the practical expert in the area, the knowledge they can provide will grant in-depth

¹⁶ www.svenskamoten.se 2009-05-10

¹⁷ Saunders *et al*, 2007.

understanding for the interviewers. Interviews were conducted by phone. One common issue with phone interviews is that the interviewer cannot see the respondents' body language and the interview becomes stricter. We have overcome these types of problems through clear communication and introducing phone calls as well as preparing the respondent with example questions to make her or him as comfortable as possible. Another important aspect to gain as much information as possible, has been made through convincing the respondent that they will be able to make changes in the information of they would like to.

2.5.3 Interview approach

Semi-structured interviews are conducted through lists of themes and question which are to be covered in the interviews. The themes and questions could vary between the interviews, depending on the respondent and the interviewers approach. This means that the interviewers may omit some questions to a respondent, given a specific organizational culture in order to encounter relations and variables to the research topic¹⁸. These semi-structured interviews grants the research a laid back approach and gives the interviews a more open mindset, giving the respondent a chance to speak more freely and the interviewers a chance to adapt to the moment without drifting away from the subject. As the subject is covering both effects of other parties and the effect of the respondent it is of importance to have the influences of themes in the background but also the freedom to change questions as follows. The research could go in a direction which one had not thought about from the start and most commonly new research is conducted when the approach is change during the way. For instance many inventions have been discovered through mistakes and by taking new directions.

One problem which was considered in this approach is that additional interviews might be needed in order to explore the research question and objective within a particular organization¹⁹. This has been covered through usage of introducing

¹⁸ Saunders *et alt*, 2007.

¹⁹ Saunders et alt, 2007 p 312.

interviews, whereas the authors have conducted pre-interviews via telephone and thereby gathered specific information about the organization.

2.5.4 Interview objectives

Since the interview approach is formed through semi-structured interviews one has chosen to gather information through objective and themes. We have chosen the following themes to gain further knowledge of the areas in supply-chains and environmental influences in such.

Themes and objectives are as follows:

- Strategy
- Collaboration
- Environment
- Value creating/Value destroying
- Interaction
- Relationships
- Customer

Through these objectives an interview will take form and questions are openly formed after these objectives²⁰, meanwhile the interview takes place.

2.6 How to process data?

The process which is chosen here is to gather material through the previously mentioned interviews, where openness and structure has a clear standing point. This simplifies the processing of data, providing a clear structure gives a more easy going process where the listener follows one clear concept and theme. The recorded material and notes taken from the interviews allows the researchers to process and chose which data is of importance and which is not. The chosen data is that which is found within the subject areas, which in this research are value streaming and environmental aspects. Once this is done the processing begins and

²⁰ Holstein and Gubrium, 1995.

will be presented in the empiric's chapter, first as a presentation of the respondents and their contributed knowledge.²¹ Once presented a comparative analysis follows in order to detect where and how the development or improvement of environmentally friendly production processes has affected the supply chain. Later on in the actual analysis, these findings are discussed and analyzed from the perspectives of the chosen theories. The interview transcripts are to be presented as appendixes, in order to convince the reader that there is no tampering with material.

2.7 Validity and Credibility

Validity and credibility is all about the trustworthiness of the research. This is discussed in this section of the research, where the authors argument for why this particular research is both valid and credible.

A short description of validity, by Saunders (2007);

Validity is concerned with weather the findings are really about what they appear to be about. Is the relationship between two variables a causal relationship?

Robson (2002)²² has contributed with some threats to validity which this research will discuss, regarding how to overcome them; *history, testing, instrumentation, mortality, maturation and causal direction*²³. The history is of course a major issue in this research, since there is a financial crisis present, an issue of great importance right now. This was taken into consideration as follows, the respondents were asked to look back a half a year or longer when answering the posed questions. Since investments are less likely to take place in these times, the respondents were asked to think back to when the financial crisis was not present when answering questions regarding new investments and/or developments. One may say that answers were given in a retrospective way. However the current market situation will still affect the given answers.

²¹ John W Creswell, 1997.

²² Saunders *et alt.* 2007.

²³ Saunders *et alt.* 2007.

The analysis will also consider and discuss these perspectives and the empirical data is to be formulated carefully, as is should not only focus on the crisis but one should also consider the positive influences which might appear from the crisis. Testing, how this research could influence the parties involved, it is the researchers task to convince the respondents that this is promising for them as well to get a good collaboration. This was done by providing information about the research prior to conducting the interviews.

Instrumentation depends on the instruments or resources with which the company works. If for instance the computer program with which the company makes purchases is changed during the research, then this might influence the result as changes are conducted during gathering of primary data. The authors have chosen to ask the respondents if any changes were conducted lately or new resources gained recently, in order to gain knowledge about possible disruptions that may influence the answers.

Mortality on the other hand is discussed when participants drops out of the study and the authors needs to reconsider the research and gathering of primary data. This is mainly an issue when conducting long-term studies, but also an issue in this study, where some companies can go out of business during the collecting of data, due to the financial crisis. This was taken into consideration; however the authors have no ability to predict the future for company that won't survive these rough times. The authors attempted to counter this by having focused on a branch which has not been overly affected by the financial crisis yet.

Maturation, this is connected with the history aspect, as old events might influence the management, the organization or the employees. Being open-minded during interviews gives the respondent a more relaxed situation, which was the intention - to make them comfortable enough to talk about changes or effects which might affect the out-come. Ambiguity is to see the relationship between two or several parallels/parameters and to find out what influences what and how the relationship is affected. It may be so that increasing revenues are due to the company performing environmental improvements, gaining eco-labels, or investments in developing environmentally friendly production processes being

the result of previous profit peaks. As such ambiguity is of great importance for any research and will be covered in the analysis chapter of this thesis.

2.7.1 Generalisability

Generalisability is sometimes referred to as external validity, and focuses on whether or not the research results can be generalized²⁴, which in turn means whether the findings may be equally applicable to other research settings, such as other organizations. Since this is a case study the idea is not to generalize or to present a theory applicable for the larger mass, but rather for similar cases and/or industries. It is focused on explaining phenomena which is ongoing and on the specific cases. Thereby this research does not claim to be eligible for generalization.

2.7.2 Operationalization

In order to investigate whether this research has operationalization or not, one should first consider what is operationalization? One definition is presented below, which is used in this research.

Organizational research or practice often deals with ideas or concepts that cannot be directly observed or measured (such as cooperation's, dishonesty, work motivation etc.). To facilitate observation, description, good measurements or policy, one frequently selects a specific observable indicator to represent such concept. An operationalization (or operational definition) then, is the publicly shared and reproducible operations necessary to define or measure phenomenon²⁵.

Since this research is not focused on numerical measurements, one needs to consider what kind of concepts that could be measured what is the conceptual out-come of the empirics. That taken in to account, the measurability

²⁴ Saunders *et alt*, 2007

²⁵ Nicholson, Nigel.; Schuler, Randall S.; Van de Ven, Andrew H The black well encyclopedic dictionary of organizational behavior, p355.

lies in the analysis of the models. Since the gathered material are analyzed and conceptualized through the theoretical framework (TRF) and thereby are the concepts in TRF to be considered as the measurable factors. Common definitions are to 'go green' and these are to be considered as certifying the SIF standard. From that standing point one would consider this research to have operationalization in the aspect of gaining measurable concepts. One example concept which could then be a measurable factor is the continuity aspect, if there is continuity in the relationships or not. Thereby to gain the operationalization this research uses multiple indicators to gain a measurable result and conclusion. *Good operationalization is clearly defined, captures the essential qualities of a concept, are found acceptable by people who are affected by its use*²⁶.

2.8 Criticism

There are both negative and positive aspects of making choices in what methodology to use but as researches our work is to compare the pros and cons. One aspect which is vital in any research is how the data or material is gathered; in this research the primary data was gathered through phone interviews. The interview approach was based on experience and the convenience of the respondents. Through the first contact with the respondent the question were asked whether to use a phone interview or a face-to-face interview, the phone interview where preferred due to the fact that many of the respondents are travelling and had difficulties to book a face-to-face meeting. The phone interviews have been done in such manner as the interviewers taking notes as well as recording the conversation. Directly afterwards the material was transmitted into a manuscript and sent to the respondent, which were allowed to make changes or remarks. The respondents have on the other hand not made any remarks and the trust between the authors and respondents was seemingly high. Because of this the respondents were able to speak more freely, knowing that they can make changes to the transcript.

²⁶ Nicholson, Nigel.; Schuler, Randall S.; Van de Ven, Andrew H The black well encyclopedic dictionary of organizational behavior, p355.(**The Blackwell Encyclopedic Dictionary of Organizational Behavior**, <http://www.netlibrary.com.ludwig.lub.lu.se/Reader/> 2009-05-30).

Another aspect which can be criticized is the choice of respondents, which were made through a list of already registered or soon-to-be eco-labeled companies. Thereby they could be biased, but the respondents need to match our intentions of looking into a supply-chain. To choose a company which collaborates with the Nordic Ecolabel to go green, their customer, clients and suppliers are of high interest for us and thereby the choice was made to search in that direction.

To overcome difficulties in measurements in a qualitative study, this study focuses on different perspectives and common features in the cases. The perspective and features are presented in the theoretical chapter. The scale is considered as whether the cases have low, medium or high influences of them. Whereas the low is low influence or hardly any, medium means that the influences are mediocre but not too complex and the high shows that we have been able to find a clear constellation of that feature and that it influences changes in, for instance collaboration.

2.9 Summary Methodology

Table 2.1 summarizes the different stand-points which is considered and chosen as the method in this research. The decisions are made from the standing point of how to gain the best result, how to gain empirics and of course of how to analyze it. Thereby the following decisions were made, and below is the methodological aspects presented.

Table 2.1

Research Philosophy	Interpretivist	Case selection	Multiple-stage
Research Approach	Abductive	Respondent selection	Area expertise
Research study	Explorative/Explanatory	Interviews	Semi-structured
Research Strategy	Case study	Analysis	Discussion & Categorization
Method	Qualitative	Credibility	Yes
Secondary data	Journals, books, statistics	Validity	Yes
Primary Data	Collected material	Generalisability	No
Data collection	Interviews	Operationalization	Yes

3 Which theories are of interest in supply-chain and environmental influences?

This chapter offers a presentation of chosen theories and the reasoning behind them. Building on the pilot interview, the forming of a mind-map took place, which illustrates the theoretical criteria's that were identified as suitable for analysis of the problems presented in chapter one. The mixture of theories and models presented will be connected through discussion; leading up to a summary before the venture into chapter four begins.

3.1 Starting Point: The Pilot study

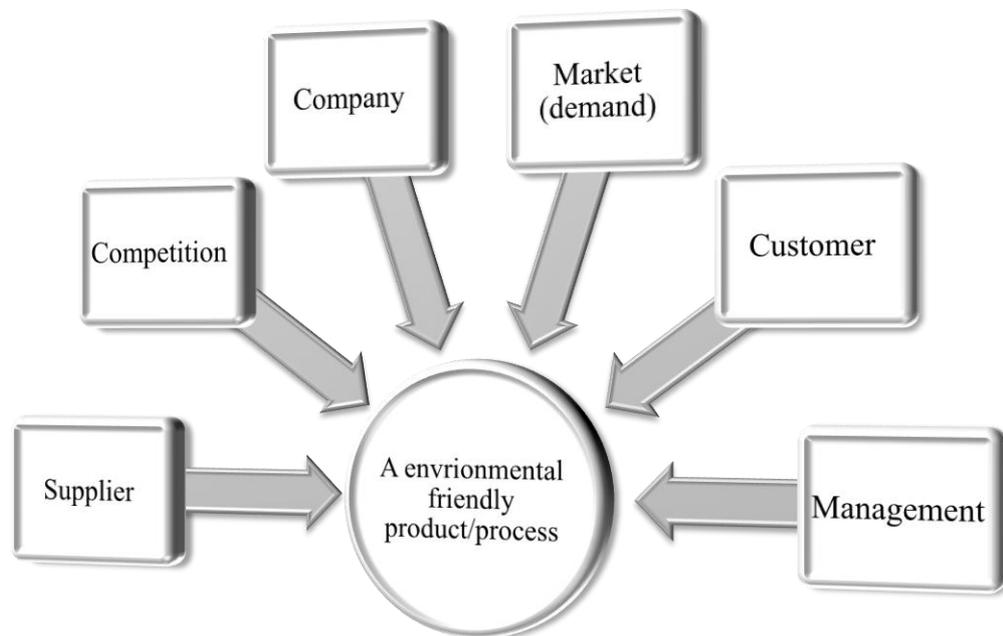
The conducted pilot study helped identifying several factors influencing the decisions to develop environmentally friendly production processes, as well as the actual development process. These factors are:

- The customers - have a lot of influence when deciding on developing new production process. When determining the specifications of the development, the customer is a key resource and should be integrated in the planning stages of the development process.
- Suppliers – that are incorporated in the development process often possess knowledge and expertise in areas that are associated with performance, capacity and which materials are best suited for the project. Sharing information and integrating suppliers in the development process allows for better prevention of future problems, while also acting as a supply-chain relationship strengthener.
- Management – makes the decisions, approves of specifications and deals with the initial communication with customers and suppliers. Furthermore it is up to the management to appoint the most suitable people to the project or development teams. The management's attitude towards change, financial expenses or general environmental thinking, can greatly affect the outcome of the development.

- Company Policy – relates back to management, but also involves the rest of the company. The company’s view on aspects like; collaboration with customers and suppliers, differentiation on the market, following the competition or the creation of new processes/products, reflects in the company policy. As such this has an impact on the development of new processes or products.
- Competition – is one of the deciding factors when it comes to new developments or new thinking. The competition can shape the technology standards of an industry, but the development of new products or processes can also shape the competition. As such competition can force a company into developing new production processes, or it can allow for new thinking/differentiation through the development of said processes.

The identification of these factors resulted in the construction of a figure, displaying the interaction that leads up to the development of an environmentally friendly production process. This model serves as the base for finding suitable existing theories for analyzing and explaining the empirical material of this research. Figure 3.1 presents the areas for which theories will be applied to elaborate on each of the six affected factors. Thus for the continuation of this chapter this first figure will have each factor replaced by theories, which are to be extended into several “expansion-categories”. This in turn will help pinpoint the most important theoretical factors, which will lead to the development and assembly of a new model, presented in the final chapter of this thesis.

Figure 3.1 Influential factors from the pilot study.



3.2 The interaction process

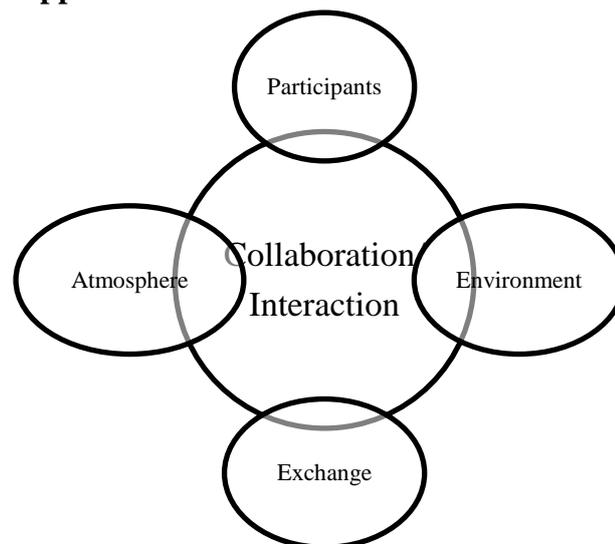
When looking into supply-chains one of the most important aspects is the interaction between participants. How communication is done, what affects it and who does it, are some of the aspects the Interaction Model by David Ford and the IMP Group (2002) brings up. Adhering to this model when analyzing the development of environmentally friendly production processes allows for an in-depth understanding of how interaction is done in supply-chains. It also brings up aspects associated with industrial purchasing, which is also incorporated in supply-chain management. The interaction model itself is divided into four elements, which in turn consists of several sub-categories.

1. The interaction process: *Product exchange, Information exchange, financial exchange and Social exchange.*

2. The participants in the interaction process: *Technology, Organizational size, structure and strategy, Organizational experience and Individuals.*
3. The environment in which the interaction takes place: *Market structure, Dynamism, Internationalization, Position in the manufacturing channel and the social system.*
4. The atmosphere affecting and affected by the interaction: *The economic dimension and the control dimension.*

All of the presented elements and sub-categories are of interest for supply-chain studies, however in this study the main aspects considered are: Information exchange, Technology, Organizational Experience, Market Structure as well as The Control Dimension. All of these were identified in the conducted pilot study, thus it makes sense to use these aspects when discussing and analyzing the other empirics gathered. Furthermore the understanding of how interaction is done is vital for the understanding of how collaboration in the development of new products or processes is affected by, not only participants, but also by the surrounding elements. Below is an illustration showing the general idea of this approach.

Figure 3.2 The approach of collaboration



(An interpretation of the Interaction Model²⁷, Maria Nilsson and Marcus Malveholm, 2009.)

²⁷ David Ford and the IMP Group (2002).

3.3 Collaboration as Interaction

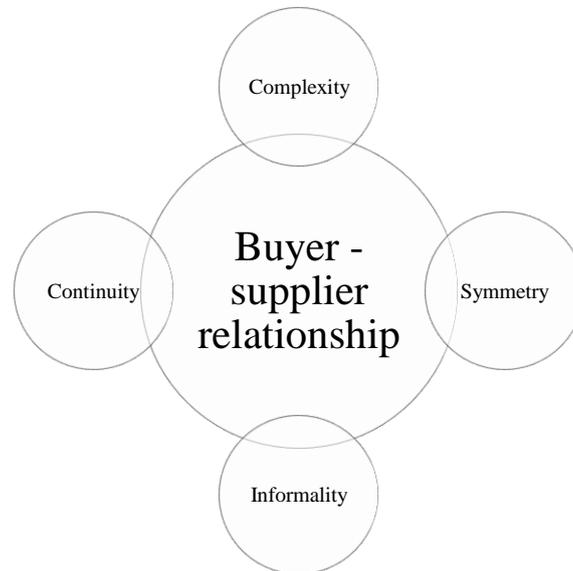
Another important aspect in this research will be unlocking value in collaboration are there collaborations which has lead to the environmental improvements, on a higher level one could say yes, since the regulations of higher environmental standard has become legalized by the European union. But since this research is focusing on initiatives made by the companies one could look into the subject unlocking value of collaboration, discussed by Day Webb and Hughes²⁸, these authors discuss how value should stream from a collaboration and how to unlock value which is caught by the companies, this has been located through a survey an examples are given from two interesting cases. This research would focus on what the authors call breakthrough partners - *a small number of suppliers which are strategically important and absolutely critical to success*²⁹. Is it through this breakthrough partners that value could be streaming in the supply-chains of our companies that is for us to figure out.

²⁸Marc Day, Mark Webb and John Hughes, Unlocking the Value of Collaboration *CPO Agenda* Winter 2007-2008

²⁹ Marc Day, Mark Webb and John Hughes, Unlocking the Value of Collaboration *CPO Agenda* Winter 2007-2008

3.4 The buyer-supplier relationship

Figure 3.3 Buyer-supplier Model



(Based on; Håkansson and Snehota, Developing Relationships in Business Networks, 1995, p. 7)

We have chosen the theory of comparative advantage in industrial purchasing (Håkansson & Gadde 1993) to understand the complexity of the buyer-supplier relationship. The theory involves aspects of trade, for example price, quality and quantity, all of which are reasons as to why companies are buying from for example, an environmental labeled company or product. Håkansson and Snehota (1995) have identified a few structural characteristics of the customer-supplier relationship that are readily evident. Those characteristics are: Continuity, Complexity, Symmetry and Informality. These characteristics are the cornerstones of purchasing and explain how the communication works in a customer-supplier relationship. This is of great interest when investigating a single supply-chain where follow-ups and constant improvement is required in order to retain an eco-label over long periods of time. While investigating collaboration for development and the communication of increased demands or requirement posed by the eco-label organization, all four characteristics are of importance for understanding the relationships between the companies involved in this study.

3.4.1 Describing the characteristics: Complexity, Continuity, Symmetry and Informality

3.4.2 Complexity

Complexity relates to how complex a business relationship is. In order to measure this one looks at the individuals involved in the communicational aspects of the development processes. More specifically the number, type and contact pattern of the individuals as well as how the company uses established relationships to gain competitive advantages in their line of business. For example, if there are several individuals from different departments involved in the development process, the level of complexity is considered high.³⁰

3.4.3 Continuity

Business transactions between two companies often stretch over a long period of time and involve continuous contracting, delivery, post-delivery assistance and service. Continuity is in this model defined as the companies' intentions to continued use of the same suppliers. The level of continuity is determined by looking at how and if companies are striving to attain stability and continuity in business relationships, as well as previously established long-term relationships. For example: if the relationships are mutually beneficial to the companies and have led to development and change, this would indicate a high level of continuity.³¹

3.4.4 Symmetry

Differences in resources such as human-knowledge, finance and technology are often superior on the buyer-side of a business relationship. Who has the power in a relationship can be judged by the amount of resources controlled by a company. The company with the most power often controls the relationship and has the most possibilities to influence and promote changes within it. However in this

³⁰ Håkansson and Snehota 1995.

³¹ Håkansson and Snehota 1995.

research the power is mainly in the hands of the eco-label organization, which sets the new standards and requirements to be met in order to gain access to its label. This leads to the symmetry being measured in terms of mutual gains for the companies in the supply-chain relationship. For example, if one company has complete control over a relationship and influences the other participant to adjust to their standards and norms, then this relationship is considered more symmetrical than if both companies are trying to gain control.³²

3.4.5 Informality

Formal contracts are commonly occurring in business relationships, but their use is often limited and ineffective in dealing with uncertainties, conflicts and crises that occur. Informal mechanisms are better suited and more effective for building trust and confidence in a relationship, which are important for the development and retaining of business relationships. The level of informality can be measured in terms of documentation, supervision of ongoing production or development, social interactions and adaptations in communication. For example, if the eco-label organization demands a lot of documentation and supervision of ongoing development, one may argue that there is a lack of trust in the relationship and this would result in a low level of informality.³³

This description is interpreted from Håkansson and Snehota (1995) and will serve as a thread for us whilst discussing the relationship and value between buyer and supplier. Its function is to guide the relationship and to classify it within these frames, which will give an explanation of the companies and their organizational structure. To further discuss if their relationships could influence the value - or non value stream in the supply-chain.

³² Håkansson and Snehota 1995.

³³ Håkansson and Snehota 1995.

3.5 Collaborations and Synergies

Collaborations are one part of interaction between organizations and people. There are different types and names of collaborations and their out-come, to gain a definition of it we will introduce the definition made by Itami and Roehl³⁴. This will give an explanation of how collaborations and synergies act.

Collaboration is to achieve better results and to gain a competitive advantage; Itami and Roehl chose to call collaborations, *synergies*. Synergies are described as the process of making better use of resources. These resources can be divided into physical and invisible assets. Examples of physical assets are such as manufacturing facilities, plants, labor and the invisible could be introduced as brand image, customer knowledge, customer satisfaction of the product, technical expertise or the corporate culture and standing points. It is when the company exploits its resources that it achieves an synergy effect. *Synergy, according to Itami and Roehl, is a “free ride” because the invisible assets developed in one part of the company can be used elsewhere without being depleted.*³⁵ These synergies can further be developed into four mechanisms of how to create synergy value³⁶:

- Shared resources/activities
- Spill-over benefits of marketing and R&D
- Similar businesses
- Shared image

This is of large interest in this research if these types of mechanisms are present in the cases and their collaborations. If that is the case how or have they created value. This will be considered in the discussion of theories in the analysis chapter.

³⁴ Jari Juga Organizing for network synergy in logistics- A case study, *Turku School of Economics and Business Administration, Turku, Finland*

³⁵ Jari Juga Organizing for network synergy in logistics- A case study, *Turku School of Economics and Business Administration, Turku, Finland*

³⁶ Jari Juga Organizing for network synergy in logistics- A case study, *Turku School of Economics and Business Administration, Turku, Finland*

3.6 The Value Stream Analysis Tool

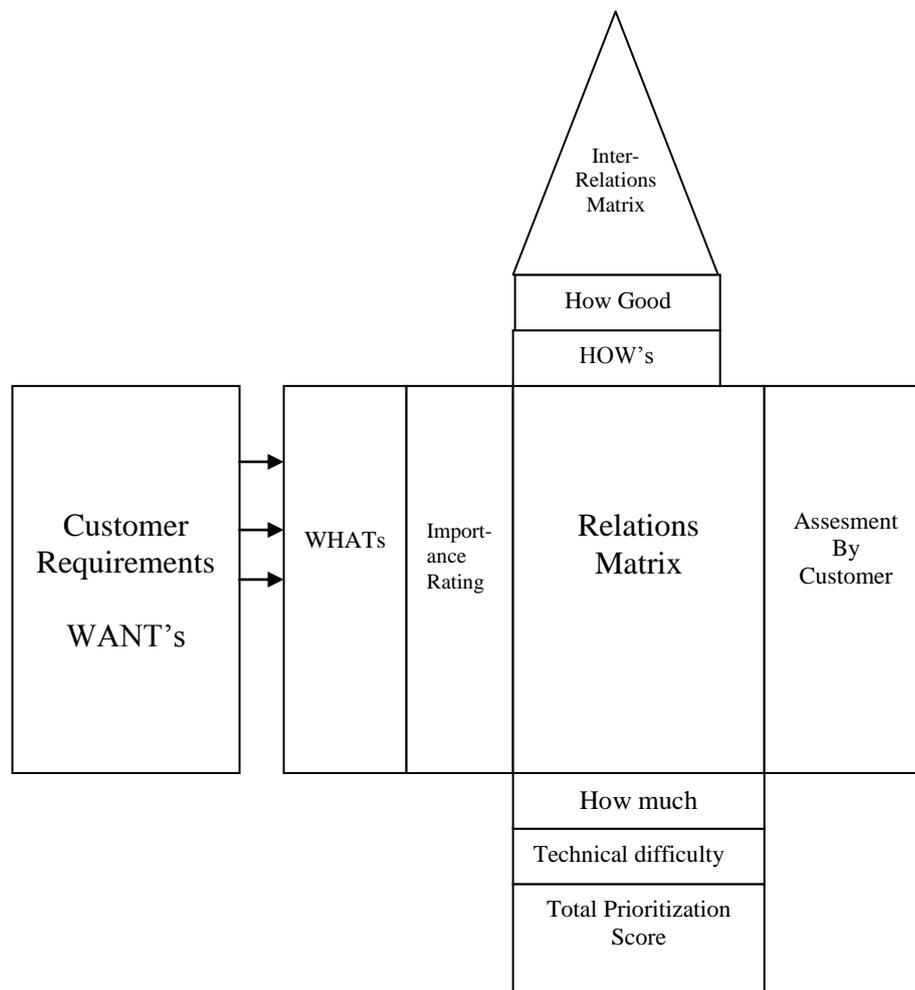
The initial stages of development of new products or processes involve specifying what the desired result shall include, this include things like the capacity, quality and project deadline. These are may be decided by the customer, supplier and focal company, or by the focal company alone. However the decisions are affected by the surrounding environment, structure, market, networks and by the experiences of the people involved. If the development processes involves combining the expertise of suppliers and customers together with the in-house knowledge, the collaboration may result in value creation across the supply-chain. This in turn can be labeled as value streaming.

The value stream analysis tool or VALSAT (Hines, Lamming, Rich, Cousins and Jones. 2000) was designed to understand how the most important resource of companies today, knowledge, spreads and generates value in supply chains. The model consists of several steps which, when applied to companies in a supply chain, can be identified as the WANT's, WHAT's and HOW's. In short terms these three factors can be explained as follows:

- WANT's: Consists of two different perspectives, the customer's and the company itself. The customer's WANT's are the customer requirements, specifications and needs, whereas the company's WANT's are described as what it wants to do in areas such as production, development, sales, product quality and product quantity.
- WHAT's: This factor consists of what the company needs to do in order to fulfill its own WANT's, or those of the customer.
- HOW's: How is the company going to fulfill the WANT's and WHAT's.³⁷

³⁷ Hines, Lamming, Rich, Cousins and Jones. 2000

Figure 3.4 The VALSAT Matrix



(Hines, Lamming, Jones, Cousins and Rich. 2000)

This model will serve as a mean to single out, identify, objectify and explain how the development processes and production processes are initiated, executed and followed up on. By adhering to the matrix illustrated above a mapping of functions and decisions, as well as the understanding for how and why they are that way, can be drawn and allow for further analysis of the acquired material and create a basis for conclusions.

3.7 The Four Pillars

To further understand how and why some companies choose to develop environmentally friendly production processes, one must first understand the contextual environment in which these companies exist. Rich and Hines (1998) developed a “Four Pillar” model which describes how supply chains form an integral element of operational and strategic competitive advantage in the consumer market. The Four Pillars model consists of:

1. The cascading of strategic management direction to the daily improvement activities of employees through *Policy Deployment*.
2. The formalization of *Cross Functional Management* to create an improvement activity of lateral integration between vertical functional specialism.
3. The development of a *standardized production system* that involves a routinized and efficient means of controlling the production system within highly defined and visualized standards.
4. The integration of the supply base and the productive capacity held by suppliers, through the use of *supplier integration* techniques and use of supplier association.³⁸

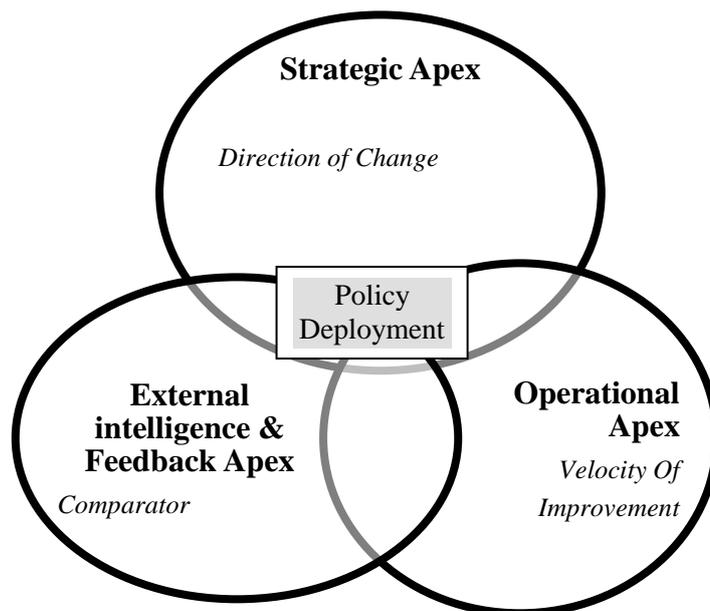
3.7.1 Policy Deployment

The concept of policy deployment can be considered as an application of a “total quality” philosophy of the strategic management of a company and serves as a mean to re-define the senior management’s role. The new roles help create value in activities concerning the preparation of the business to manage and control increasing customer demand over a long term period. Through determining key competitive measures, and targets for each of these measures during certain time periods, that must be achieved in terms of customer service satisfaction, the management can create and implore new policies to cope with market- or company changes. Customer service includes business aspects such as development of product ranges, factory site allocation, financial return planning,

³⁸ Hines, Lamming, Jones, Cousins and Rich. 2000

and compliance of the company to external regulations as well as quality, cost and delivery issues that are part of customer service transactions. Thus the policy deployment approach to the strategic management of the business contains the main environmental scanning routines of the business as well as the feedback of information on a routinized basis³⁹. As such the policy deployment approach is to be considered a group activity where managers from all affected departments, as well as involved suppliers and customers, all play an important part in the creation and execution of business policies.

Figure 3.5 The Policy Deployment Model



(Hines, Lamming, Jones, Cousins and Rich, Value Stream Management, 2000, p.116)

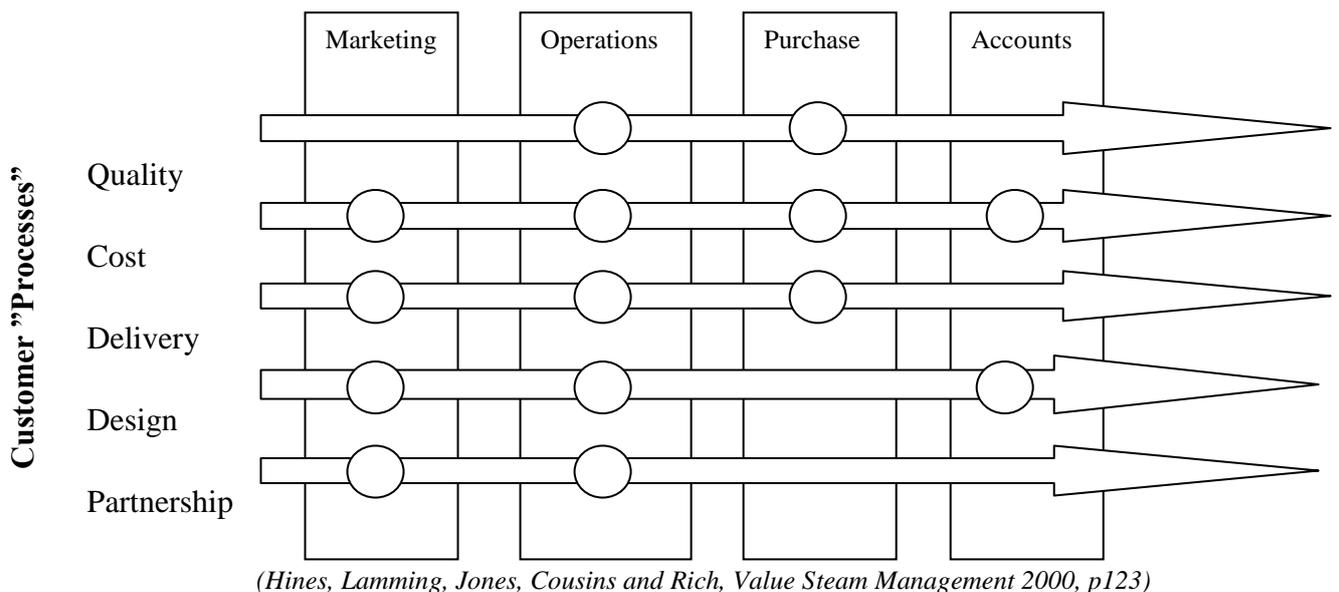
3.7.2 Cross-functional management

Cross-functional management – the management of customer service by optimizing the quality, cost and delivery of activities across the business – consists of a coalition of interest groups that share the same targets. These interest

³⁹Hines, Lamming, Jones, Cousins and Rich. 2000

groups include all departments of the company along with key suppliers and customers⁴⁰. Cross-functional management activities typically cause internal adjustments in the operating systems of the organization by highlighting and eroding internal conflicts, but equally these activities can be externalized to incorporate the customer, the supplier or the entire supply chain. As such the cross-functional management is tightly related to the policy deployment of the company, where established or in-development policies shape the engagement in externalization by the company. The use of cross-functional management can be considered a key to the health of the organizational improvement programmed, an element of annual renewal as new targets are deployed and personnel change over time.

Figure 3.6 The cross functional nature of key processes
Functional stacks



3.7.3 Standardized production and operations

The third pillar is the conversion process and control of daily management of customer service that unites the strategy and structure of the business. Control of the conversion process is an essential part of the strategic planning processes and ensures that the resultant policies are founded on facts rather than predictions and expectations. By standardizing the procedures that govern the production systems

⁴⁰ Hines, Lamming, Jones, Cousins and Rich. 2000

operations, these processes serves as a means of creating discipline and self-regulatory control and is supported by written and formalized standards. This in turn creates stability and uniformity in the management of the input-conversion-output equation⁴¹. This stability is the means for controlling and improving production processes and acts as the basis for increasing efficiency using the total quality approach to the elimination of cost and prevention of failures⁴².

3.7.4 Supplier Integration

The fourth and final pillar of this model consists of a mechanism which incorporates suppliers in a manner that allows the supply-chain to become integrated in the strategic processes of the company. This acts as an attempt to reduce uncertainties of the supply-side dependency and to develop supplier relationships with similar skills, characteristics, terminology and standard procedures as that of the focal organization⁴³. This concept implies that suppliers that are faced with dependency relationships with their customers can become motivated to engage in joint activities, and in the absence of vertical integration it can also lead to transparency in operations for all involved parties.

The supplier association structure is similar to the externalization of the cross-functional management concept, where the creation of a forum for exchange and relationship building between the focal organization and a collective of suppliers, allows for the creation of networks consisting of regular and formalized opportunities for integrating customers, the focal company and suppliers in a three-dimensional linking structure.⁴⁴ Unlike the internal cross-functional management, the supplier association is a permanent structure appropriate to the long-term integration and working agreements between the supplier and customer. It adopts a process of coordination amongst involved companies and serves to externalize the standard production concept and the externalization of controls which regulate the conduct and improvement of

⁴¹ Hines, Lamming, Jones, Cousins and Rich. 2000

⁴² Rich, 1998

⁴³ Hines, Lamming, Jones, Cousins and Rich. 2000

⁴⁴ Hines *et alt*, 2000.

activities within supplier factories⁴⁵. In summary, this final pillar of the model is a process of integration and socialization through which the focal organization attempts to harness the total resources of the entire supply chain, where all involved parties benefit. This allows for the sharing of resources and practices in order to create and sustain competitive advantage as well as compressing the amount of time associated with learning curves and lead times, providing a quick reaction to market changes across the supply-chain.

3.8 Summary theoretical framework

Using several theories each involving different aspects of supply-chain management, product development and purchasing, a broad base for analysis is built. The authors argue that by first looking into the Complexity, Symmetry, Continuity and Informality of the companies involved in one supply-chain, as well as the Interaction processes characterizing both the supply-chain and development processes, in-depth knowledge and understanding for how these factors are integrated can be presented. These models will mainly serve as the first step of the analysis, setting the foundation for further discussion through the VALSAT and the Four-Pillar theories. This setup was chosen due to the four different theories were viewed as intertwined. The Interaction Process and the Buyer-Supplier Relationship complete each other, while at the same time the VALSAT and the Four-Pillar theories help explain one and other.

3.8.1 Theory integration

The continuity of organizational relationships is closely related to the amount of information sharing and the organizational experience. If previous experiences in terms of purchasing, collaboration and/or other organizational interactions can be classed as good, the authors argue that there is less resistance towards further organizational interaction. This in turn can result in increased sharing of information and more likelihood of further collaboration between the

⁴⁵ Hines, Lamming, Jones, Cousins and Rich. 2000

involved organizations. This is also affected by the complexity of the relationships, since the involved individuals of each organization play an important role for the overall interaction. Furthermore some organizational interactions, such as the development of new production processes, may also require several people from different departments, which would increase the complexity of the interaction. The more people involved in the interaction, the harder it is to supervise the sharing of information between them. The control dimension of an organizational relationship serves as a supervising-tool for each of the involved organizations, which for example can be seen in guidelines set by management or by conducting follow-ups in order to ensure that agreed terms are followed. This in turn can depend on the symmetry levels of the relationship, where the organization with the most power may require more control of ongoing interaction or collaboration than the other involved parties. A stronger need for control by one party may result in reluctance for sharing information by the other.

The elements of the Interaction Process and the factors of the Buyer-Supplier Relationship are affecting and affected by each other in a continuous interaction. This makes them both suitable for analyzing the collaboration between companies seeking to attain an eco-label.

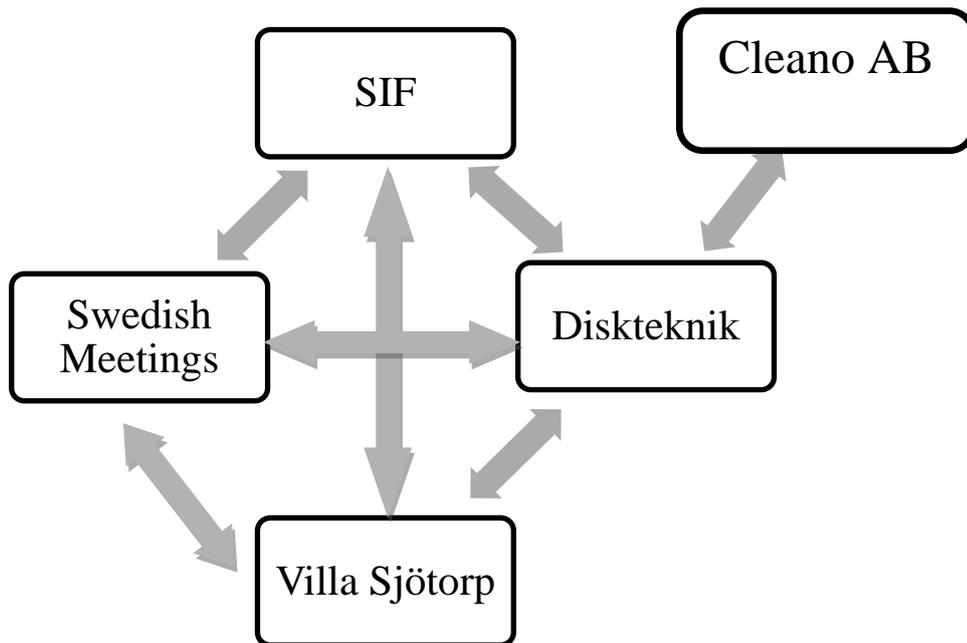
A similar interaction also exists between the VALSAT model and the Four Pillars model. Defining the *wants*' leads to the identification of *what* needs to be done in order to achieve them. These *wants*' are then achieved through use of company policies and the integration of suppliers, while the cross functional management serves the purpose of making sure all departments are working together.

4 Case Presentation

Appearing in this chapter is the presentation of the empirical material. Each company is independently introduced and the information gathered from the conducted interviews follows. This then results in a cross-company discussion where variables, both similar and different, are brought to the surface and presented, building up to the analysis chapter which follows.

The empirical material will be presented through discussion and comparison, rather than raw data. This in order to capture and point out the different identified factors that are to be analyzed in the next chapter. To generate a perspective of how the different companies interact with one and other, figure 4.1 demonstrates the relationship:

Figure 4.1 The Companies Relationships



(Constructed by Marcus Malveholm and Maria Nilsson 2009-05-20)

4.1 The Nordic Eco-label

4.1.1 The organization and respondent

In the late 80s the Swedish government and the Nordic Foundation founded the Nordic Ecolabel/SIF as a control function to supply consumers with an environmental label which was independent from the business environment. The independency is of high important since it is to gain the consumer trust. SIF is still partly financed by the Swedish government, which owns 10 % of the organization, another organization owns 10 % and the rest is financed through license deals. SIF a non-profit organization, which is an important aspect as an independent part, and they are considered as a type one consumer label, while a type three label is when the company itself sets standards and labels.

After the decision taken by the Nordic foundation, the Nordic Ecolabel was formed in 1991 and started out as a small company with only 2-3 employees. The main focus was to form the label as its vision “a sustainable society, a sustainable consuming” and it started with labeling laundry detergents and the paper industry. To get the vision out to the public they used different types of PR, but something that we all probably remember is the label’s association with Swedish celebrities such as Lennart Svan and Gunde Svan, as well as the laundry detergent TV-commercial involving a little girl somewhere in the middle of the Stockholm archipelago. Today there are about 40 employees at the Swedish headquarter in Stockholm and the SIF is labeling ranges from detergent to restaurants and hotels.

The respondent Anja Grunberg is working at the Nordic Ecolabel/SIF. Her deployment has its location at the main office in Stockholm and her job title is communicator/informative spokesperson, with the main tasks to inform about the SIF labeling and its criteria’s.

Competitors to the organization are; Bra Miljöval, KRAV, ISO-certifications and Naturskyddsföreningen, though the SIF consider these companies and organization to be more of a complementary nature, since they are working towards similar goals and helps them to improve their game. There have

even been some collaboration between the competitors and SIF, for instance SIF can pose a criteria for KRAV labeled food from restaurants who are applying for the Nordic Eco-label.

4.1.2 The work

The criteria and aims of SIF are to look into the whole life cycle of a product or service. Through that approach the aim is to spot WHERE and HOW in this process the company or branch has the largest environmental effect and how it can be improved. Thereby the development of criteria's is done through use of specialist groups. The specialist are representatives from various fields, depending on branch and issue, and they are usually representatives from both the Nordic Ecolabel as well as experts from the branch or business. Typical expert fields are environmental, branch, process, chemical, landscape and some innovative experts. These people will discuss and work out the criterions for one specific product/service part, and then these are published at the Nordic Ecolabel webpage for the public to respond and comment on. If the criterion is approved, the companies/businesses that want the label/certificate needs apply for the certificate and accomplish the set criterion. One important aspect is that the certificate is only viable for four years, then the company needs to apply for a new one. That enables the SIF to develop their criteria's, to improve and develop the standards step by step in all branches to achieve the best out-come.

4.1.3 Strategy

The whole organization is strategically influenced by an environmental friendly approach. One aspect which is deemed important by the Nordic Eco-label is looking at the whole natural circuit, from climate to environment, from mankind to animals and so on. This is done in order to bring knowledge to both consumers as well as companies, showing them how to improve their habits.

4.1.4 Industry and collaboration (supply-chains)

The industries and branches in which SIF is working, there are collaborations of different types, such as projects, work-shops and discussion groups. One particular project which was conducted in the restaurant business, where nine restaurants received the Svanen-license, was made possible through a collaboration with *Diskteknik* and the restaurants.

This collaboration was one case where the Nordic Eco-label could influence several steps in the supply-chain and label the whole process in the restaurants.

4.1.5 The future

It is not possible predict the future, but during the last years the awareness and media had influenced the public towards a higher environmental friendly approach. The consumers have become more aware and the demand for environmentally friendly products is increasing, thus it is believed that the demand will continue to increase.

4.2 Cleano AB

4.2.1 Respondent and the company

Ulrika Jupiter works with the environment and quality at Cleano AB, which is a family owned company. The company started in 1972 and today Cleano Group AB consists of Diskteknik Oy, Diskteknik AB, Lubeco AS, Jasico AB and Cleano AB. The head office is located in Vallentuna, Stockholm and that is where Ulrika is located. The corporate group had a turnover at 29 million Euro 2008 and 180 employees⁴⁶. The group is found in the service industry, as 'HoReCa' and 'Private Label'. HoReCa offers knowledge and products which hotels, restaurants and catering need for a clean wash-up and hygiene. Private label develops and produces hygienic- and detergent products for both business and private persons.

⁴⁶ www.cleanogroup.com

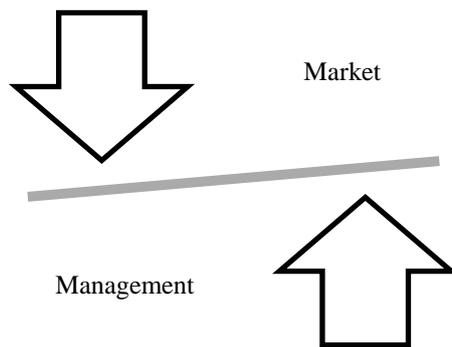
Ulrika is as mentioned accountable for the environmental and quality aspect of Cleano AB. To further elaborate what Ulrika works with, here are some examples; revision, environmental quality in the group, follows-ups on strategies and aims, project follow-ups and accounting of the environmental work.

4.2.2 Strategies and aims

Since the start up in 1970 the focus has been on the environment and to economize with the resources that you got. Since the owner is a former “smålänning”, working to economize comes naturally. From the early days recycling was on the agenda and from there the goals and aims where formed. Today Cleano works with monthly and annual environmental goals. The aim is to be the leading edge, which they have been so far. Examples of projects which have been conducted in the environmental work/objectives are; eco-driving courses, driving sales cars on canola oil, environmental chemicals, reduced consumption of water and so on. Every year the group and each company sets its own environmental objectives and these are followed-up at the end of the year. Since Cleano produce some of the products as chemicals on their own (Jasico), they have the possibility to control and supervise the production to suit their aims. The whole Cleano Group works hard on putting pressure on suppliers to fulfill the criteria’s of environmental friendliness. If the suppliers do not, Cleano will go to someone else who will meet their standards. If one looks into the differences in HoReCa and Private Label, there are more products and process within wash-up industry compared to the cleaning industry.

The process of developments and ideas come mainly from the top of the organization, but there is an interaction between the management and the employees, which reflects on the decisions. The picture below describes the market and managements interaction to build decision and strategies and how they weight up one and other.

Figure 4.2 Decision Making



“One important factor in our work is to continuously improving, step by step. “
(Ulrika Jupiter, Cleano AB. 2009)

One example of how Cleano work to be first is that the management constantly stays up to date with new standards, laws and political decisions, taking them into consideration for the development of their own products and processes.

A chemical which is soon to be labeled as cancerogenic, is a chemical that we have removed from our products but also at our clients. Which we did as soon as we learned about it, we do not wait until the decision is made - we take immediate action. (Ulrika Jupiter, Cleano AB. 2009)

4.2.3 Collaboration

Cleano AB is working with the SIF labeling, and takes pride in helping clients to become SIF-certified. This is mainly what Diskteknik, a subsidiary to Cleano AB, is working with.

Recently Cleano was approached with an interesting suggestion from SJ, the government owned Swedish Railroad and Train organization, to help reduce the distribution and traffic costs and pollution. SJ and the public transports have shown an interest in develop this further. Collaboration is conducted together with AGA gas. The service buses used by Cleano are gas driven and working

together with AGA has led to the improvement of the distribution platforms for bio-gas in the Stockholm area. This was partially done by Cleano demanding improvement and faster approach from the suppliers. These collaborations have been very productive and successful thanks to the fact that all involved parties' works together. The employees' work with the strategic settings and goals, they set the goals that determine the out-come. The development department is integrated with suppliers and customers in order to be innovative and reach the best possible results.

The amount of clients and the demand for Cleano AB's products and services has increased during the past years. This is because of their work with environmentally friendly products and services, but also due to the association and collaboration with known certification/licensing organizations, such as SIF.

There have been different types of value creation, some that are measurable and some that are not. For example Diskteknik, which has reached a broad audience thanks to its environmental work. Another example is the Cleano AB employees, who have shown a positive view and provided feed-back on working with environmental friendliness, are feeling that that are making a difference. Through improved environmental work, value has been created for suppliers and reduced the overall pollution of the entire supply-chain.

Being first with something often costs more than it benefits, but the innovative spirit is a large part of the company and it drives the strategic and competitive edge. By revising existing targets annually, Cleano AB is able to constantly work with improving old targets and developing new ones.

4.3 Diskteknik AB

4.3.1 The Respondent and the Company

Diskteknik is a Swedish family owned company that was founded in 1972 by Lars Barkström. The company works towards the hotel and restaurant

business and are unique in the sense of being able to offer a complete hygiene team, which includes everything from dish and laundry to general cleaning. The company is a subsidiary to Cleano AB and currently employs 85 people nationwide. Over 8000 hotels and restaurants are on their list of clients and approximately 96% of Diskteknik's sales in chemicals is made up by "green-labeled" products.

The respondent is Hans Wiberg, the head of sales for the Swedish west coast district. His main responsibilities lay in sales, service advising, keeping track of new laws regarding environmental aspects as well as increasing efficiency in hygiene related issues for restaurants and hotels in his district.

Diskteknik mainly works with hygiene aspects in the hotel and restaurant business as well as helping clients achieving the posed criteria's for labels such as the Nordic Eco-label. The company itself is very committed to environmental issues and takes pride in making good use of eco-driving, bio-gas cars and logistical solutions involving eco-transportation.

4.3.2 Collaboration

The respondent was the person taking the initiative for eco-labeling restaurants and hotels through collaboration with the Nordic Eco-label. Diskteknik had been working together with the Nordic Eco-label prior to this collaboration, mainly involving the green-labeling of their own products, such as detergents and soap. Together the two organizations managed to more than double the amount of eco-labeled restaurants and hotels, from 2-3 to a total of 12, all in one year's time.

One of the standards posed by SIF for this particular industry is that 70% of all purchased material and products must be certified according to environmental standards, something which is easily achievable by Diskteknik since 96% of their products are labeled environmentally friendly. Another criterion is to have the right dosage of, for example, detergents or water. Diskteknik offer its clients advice and services in these areas, providing a

complete solution, which helps restaurants and hotels to achieve the criteria's posed by organizations such as the Nordic Eco-label. Furthermore Diskteknik work in a similar manner to the Nordic Eco-label, where development and step-by-step improvements are a necessity for sustainable competitiveness as well as for keeping up to date with the new criteria's, laws and standards that appear. *"It's all about being one step ahead of everyone else"*.

Previously the clients have had difficulties marketing their businesses as environmentally friendly, but due to a rising demand for environmentally friendly products and services this is no longer a major issue. Being green-labeled creates competitive advantages, but only if the company sporting this achievement is doing it better than competitors.

4.3.3 Strategy

Diskteknik was first on the market, and even the world, with the eco-labeling of chemicals used for washing dishes. It is fairly obvious that competitors have followed their lead. However the respondent says:

"It's not like our competitors could not have beaten us to being first, it's just that our company has always been first on the market with this kind of labeling and we have always seen the opportunities hidden within it. Because of this we have managed to position ourselves well on the market".

Most of the clients of Diskteknik have, in retrospect, found that the eco-labeling has been fruitful. They feel like the green-thinking has not only granted them competitive advantages, but also enabled them to sustain stability. Furthermore the environmental awareness has spread throughout most organizations, making not only the companies, or management, more environmentally friendly, but also affected the employees whom have taken a very positive attitude towards green thinking. Two of Diskteknik's clients are Villa Sjötorp and Swedish Meetings.

The attitude towards environmentally thinking has also spread thoroughly amongst Diskteknik's employees, something which the respondent finds to be very positive. *"The more people become engaged in the vision of the company, the better we can become"*. Engaged employees create a better working environment as well as making them work harder. The positive attitude to green-thinking may also have a word-of-mouth effect, spreading to people outside the organization, creating more demand for eco-labeled products.

4.4 Villa Sjötorp

4.4.1 Respondent and Company

"Villa Sjötorp - a House by the sea"⁴⁷

Ellika Mogenfelt is the CEO of the restaurant and hotel called Villa Sjötorp, which was one of the restaurants that got the Nordic Eco-label through the previously mentioned project, which resulted in 9 Swedish hotels and restaurants becoming eco-labeled. Villa Sjötorp has since the start up in 1995 focused on an environmental friendly approach. This has been introduced through Ellika and her own lifestyle; she mentions that the environmental and free trade thinking is a life style in both her life and her business. *"It has been an interesting journey from the start when people would consider one to be crazy asking for free trade coffee until today when everyone will catch the green ride as a competitive edge."*

Today the focus on being environmental friendly or having an eco-label has become more of hype and is too commercial. To label the company with the Nordic Eco-label was for us a defensive approach; *"We saw bad times coming and took the safer way"*. Since the SIF labeling has a high type of commercial value it, would work as a security towards the municipality and customer. Achieving the criteria's of the SIF, has cost lots of money and time. During the last couple of years Villa Sjötorp has received a lot of PR, since they have been in

⁴⁷ www.villasjotorp.se, 2009-05-15

the leading edge. It has been both positive but in some degree negative since that's not their aim, but rather their lifestyle.

One example which Ellika mentioned as the difference between Villa Sjötorp and other companies was last year when they (her and the employees) were at a conference organized by the Nordic Ecolabel. *“My staff reacted to the climate and to the way discourses focused mostly on the way to make money. It was discussions on cash flows, competitive advantages and sales, not on the key-concept The Environment which made my staff a bit upset.”*

For us at Villa Sjötorp the environmental friendly belief and free trade is a way of life⁴⁸.

4.4.2 Strategy

“As a manager I cannot force my staff to think in my terms, but I have chosen to work with people who have a similar view to me. This is how this company has managed to keep a passion for the environment throughout the organization”. The result of this approach allows Villa Sjötorp to make organizational choices based on its accepted environmental standards.

The purchasing process of Villa Sjötorp consists of buying local, ecological and as environmental friendly products as possible. Since they work with a small restaurant, the focus is not change the supplier or to pressure them, instead they search for suppliers that suit the set standards and criteria's. If the suppliers cannot supply Villa Sjötorp with products that suit the set standards, they are asked to come back should those products ever appear in their arsenal. In by doing so Villa Sjötorp attempts to influence the environmental awareness of local suppliers, which has been successful with some supplying companies.

I have seen large improvements or changes during the last couple of years. From the beginning in 1995 when I searched for free traded

⁴⁸ Ellika Mogenfelt

coffee and the only one in Sweden using it was the Swedish Church, thereby their supplier became ours. Since then that way of thinking has spread amongst companies⁴⁹.

4.4.3 Collaboration

Through different types of projects and collaborations Villa Sjötorp's network has expanded and today they work with several local "green" suppliers. Unfortunately some have chosen to stop being certificated with different organizations, such as the SIF and KRAV, due to the administrative and time consuming effects.

Their own label or certification started through a project by municipality in 1995-1996, where 40 local restaurants were invited to 'go green'. The environmental office sat the criteria's and only seven got the diploma, among them Villa Sjötorp. Last year Villa Sjötorp attended a project together with SIF and some suppliers to get a SIF certification. One of the suppliers, and also the driving force behind the project, was Diskteknik. Another important factor in this is the customer, which has been loyal to Villa Sjötorp, they have been willing to pay a higher price for the products and services offered. The introduction of these concepts has always started from the CEO and then downward in the organization.

4.5 Swedish Meetings

4.5.1. Respondent and Company

The respondent of this interview is Christian Gietta, Market Manager at Swedish Meetings (SM). SM is a company which divided into two segments; a booking segment and a member organization. The member organization is the main income source and works with different kinds of deals,

⁴⁹ Ellika Morgenfelt

procurements, tax, purchasing and facilities are some examples. Conferences are the largest part of SM, and there are today 100 facilities with which they work.

Swedish Meetings is going through a SIF certification of all member facilities, their member facilities shall in 2010 be SIF-labeled. It will then become the largest SIF labeled conference/meeting chain in Sweden. This means that the facilities need to incorporate long-term environmental thinking and management reduction as a whole. The main focus is to reduce energy and water consumption, adapt to environmental friendly decoration, furniture, cleaning, waste management, wash-ups and detergents. The focus on the environment started 28 years ago, at the same time as SM was founded. The facilities were located close to nature and thereby the concept to keep the peaceful haven the environment it supplied started. To managed that, they worked with environmental certifications and labels within the company, to set aims and build strategies. Even these criteria's have been developed through collaboration with the SIF, but not under the SIF-label. One year ago the decision was made to hire an external partner to certify the facilities and the choice for this collaboration was SIF. The decision was taken by the members of the company, through votes. Even the suggestion was thought up by the members, through different types of work-shops and investigations.

Through this decision the aim to give the clients and customers a clear concept and a trustworthy profile in the environmental work developed. The most important part is that the clients knows of and can compare the facilities and associated labels of SM, with those of the competitors. There has been a lot of positive feed-back from the customers regarding the collaboration with SIF. The decisions in SM are by from the management, who are also well informed and involved in environmental related questions.

Another positive aspects which SM has noticed through their work, is that the employees have a very positive attitude towards the environmental engagement of the company and work really hard to improve the daily routines. They have grown with the assignments and the satisfaction at work has increased.

4.5.2 Collaborations

Initially there were no SIF-labeled conference facilities, but the collaboration with SIF has led to the development of labeling an entire conference, meaning both activities, restaurants and hotels being SIF labeled. This is a step-by-step process, meaning that there are criteria's for each part of the conference being developed.

Another collaboration of SM's, regarding purchasing policies, is under progress along with an organization called Norup. It involves each of the member organizations of SM having one collective purchasing deal. Thereby, as a collective, they can put pressure suppliers to improve their environmental thinking or prices. Swedish Meetings have been able to influence suppliers to deliver 'green' products, there is also a register aligned with this deal, where the members can see what the suppliers do in their environmental work and what they deliver.

There are some of the suppliers which are far ahead in their environmental work, which have positively influenced SM to work harder, for example Diskteknik and The Nordic Eco-label; these are also part of the Norup deal.

4.5.3 Strategies

In order to get all facilities to follow the set aims and guidelines, SM has chosen to work with sub targets. This to see which facilities may not reach the desired targets on their own so that SM can step in and help out. No one should be left behind and by doing this SM also shows both members and clients that they are serious in their efforts to improve all aspects of the business.

4.6 Summary of differences and similarities

The differences in industries between the pilot study and the companies in the empirics are vast. Proton Group is part of the metallurgic production industry, focusing on the furniture and the automotive industry, whereas the other companies participating in this research are mainly part of the service industry, hotels and restaurants. However these differences appear to play little to no role in terms of development of environmentally friendly production processes or services. The whole process of development is characterized by collaboration and the building of long-term business relationships.

The key player in these collaborations is the Nordic Eco-label, or SIF. Since SIF sets the standards and grants the right to label a product, process or service green, collaborating with them is more or less necessary in order to meet the requirements. Furthermore the Nordic Eco-label has gained an immense trust amongst consumers over the years, making the label highly desirable by companies that seek to position themselves in the environmentally friendly segments.

Diskteknik's business idea is to help hotels and restaurants achieving the requirements for environmental labeling. They also work with improving quality and standards in that industry, constantly trying to introduce more hotels and restaurants to adapt to green thinking. Thus the company has chosen to work intensely with the SIF organization, constantly adapting to new standards and improving their own work.

The environmental focus of Diskteknik and Cleano AB has seemingly rubbed off on the very companies they offer their services to. Looking at Villa Sjötorp and Swedish Meetings, the going green concept has rooted itself deep in the respective company's strategy as well as the minds of their employees. Going green thus becomes more than a way to position the company on the market, or differentiating from competitors, but rather a way of life. Coped with the increased demand for environmentally friendly products and services, this creates a kind of chain-reaction, causing more and more companies to follow this route. One can argue that this would lead to less competitive edge being gained by

going green, however as stated by the respondent from Diskteknik the competitive edge lays not in the achievement of a green label, but rather in doing it better than competitors.

All companies participating in this research have experienced the whole concept of environmental friendliness rubbing off on employees, eventually characterizing the entire organization. This has lead to employees becoming more engaged in the visions of the company which, as stated by Diskteknik, makes improving the work of the organization easier. It has also lead to employees getting a feeling of making a difference, both in their work and in private.

Swedish Meetings, Diskteknik and SIF have taken this one step further by collaborating with an organization called Norup. By working on the purchasing policies and including all member organizations of Norup, the idea is to influence suppliers to adapt to a more environmentally friendly approach. As a collective of companies, the purchasing power is vastly increased, granting them the ability to influence suppliers and even demand changes to be made.

The Eco-label is only viable for four years, after which companies need to reapply for it. Because of this, constant improvement and development is required by the companies applying. This in turn has lead to both Diskteknik and SIF establishing long-term relationships with almost all clients. New standards, requirements or information of new products are communicated throughout the supply- and customer networks.

5 Analytical Discussion

This chapter combines the theoretical framework with the empirics. Through discussion the empirical material will be analyzed from the different perspectives of each selected theory. The purpose is to single out and lift up the most influential aspects and factors, creating the setting for the final chapter – the conclusion.

5.1 Analysis structure

The analysis begins by introducing the discussion through the Buyer-Supplier Relationship model. This is done in order to visualize the supply-chain structure of the participating companies, creating a base for further analysis through The Interaction-Process model. Analyzing and visualizing the structural, communicational and social aspects of the supply-chain will then allow for a more elaborative analysis through the VALSAT- and the Four-Pillar models, which will form the main part of the analysis discussion.

5.2 The Buyer-Supplier Relationship: Complexity, Continuity, Symmetry and Informality

5.2.1 Complexity

The overall complexity of the participating companies' supply-chain relationships was found to be quite similar. Going back to the pilot study, Proton Group was collaborating with both suppliers and customers for the development of the eco-labeled production process. The individuals involved in the process itself consisted of experts from each of the involved organizations, as well as the managers of each company. In other words the amount of people involved was neither high nor low. This in turn indicates that the development process had a medium level of complexity.

While looking at the SIF's relationship with organizations applying for the eco-label, the amount of people involved in the communication of requirements, standards and criteria can be considered low. However this in itself does not indicate a low level of complexity, since the SIF organization also collaborate, gather feedback and conducts follow-ups on the companies that either apply for their eco-label, or have just received it. This requires a high amount of involvement from many of the organization's employees, and adding to this is at least as many people from the client-organizations. Thus the level of complexity here is considered very high.

Though the SIF, in a standalone analysis of complexity levels, is considered high, the relationship the company has with each supply-chain company is not characterized by the same level of complexity. The collaborations between SIF, Cleano AB and Diskteknik does not involve a large amount of individuals participating in the intra-collaborational communication. Instead there are rather simple way of communicating between the organizations, and usually involves the management in Cleano AB and Diskteknik interacting with representatives of SIF. This causes a down ranking of the complexity level of SIF, from very high to high. At the same time it indicates medium levels of complexity for both Cleano AB and Diskteknik, since the amount of involved individuals is neither high nor low.

The relationships between Diskteknik and two of its customers, Swedish Meetings and Villa Sjötorp, are characterized by cross-communication. This however does not mean that the level of complexity is high. Diskteknik have a set amount of people assigned to one district and the customers located within that district, communicates with them. In the case of Villa Sjötorp, where the CEO of the company is the link between them and Diskteknik, the levels of complexity are low. Swedish Meetings however are present on many different geographical locations and due to this, the amount of individuals involved in the communications with clients or Diskteknik are quite a few. However the complexity does not reach high levels for neither Diskteknik nor Swedish Meetings in this aspect. Instead the average complexity levels for both these organizations are considered of medium character.

5.2.2 Continuity

In the pilot study, the collaboration between Proton Group, its supplier and customer, lead not only to the completion of the development project, but also to strengthening of business relationships. Both the supplying company and the customer benefitted from the collaboration. The results for the supplier was increased sales and continued work with Proton Group, for the costumer the possibilities of Eco-labeling its products as well as exclusive rights on that particular production line for some time. For Proton Group all of this resulted in a stronger market position, first on the market with an eco-labeled chrome surface treatment process and increased volumes from the customer. This makes the collaboration beneficial for all involved parties and lead to continued cooperation. This in turn results in the levels of continuity being rated as high.

SIF constantly works with improving and developing its criteria's and standards. This constant evolvment of its business is not done alone; it relies on feedback from companies, political organizations and consumers, as well as making follow-ups on approved companies. The collaboration between SIF and Diskteknik is beneficial for both companies. SIF receives help with improving and developing standards as well as knowing that there's a partnering firm helping Eco-label-applying companies achieving the set criteria's. At the same time Diskteknik gains from this relationship in terms of being considered a respected partner of SIF, automatically granting Diskteknik good reputation and making them an attractive consultant option for companies seeking to eco-label. The relationship between these two firms has proven to be fruitful in the long run and both companies wish to continue working closely together. As such the relationship as a whole is to be considered of high continuity.

Companies that have achieved an eco-label will have to continuously improve in order to keep it. Thus it is important for those companies to remain in contact with SIF in order to learn of new criteria's and standards to meet, should they wish to keep the eco-label. This makes the continuity levels of SIF very high.

Diskteknik is in a similar position as SIF. Through constant follow-ups and actively working together with clients to improve operations, Diskteknik strives to maintain all customer relationships long-term. This in turn is evidence of high continuity in their operations.

Swedish Meetings are in the same seat as Diskteknik. The organization is surrounded by collaborations in all directions. Working together with SIF and Norup in order to create a better environment and better purchasing conditions for the member organizations of Norup. All this is done with the long-term aspects in mind. Furthermore SM is also working together with the facilities associated with their conference business, constantly trying to improve and develop the environmental impacts of the conferences they offer. Continuity is part of their everyday operations, and that in at a high level.

5.2.3 Symmetry

When looking at the symmetries of these businesses, it quickly becomes clear that SIF are clearly the organization with the highest level of symmetry. Not only do SIF set the requirements for branding a product, process or service with the Eco-label, but their constant work to improve the very same requirements puts them in a position of power. In contrast to this, Diskteknik and Swedish Meetings are in a very different position. Their power in a supply-chain or development process is limited to what their respective client demands and what requirements SIF set. This causes their influence on business relationships to depend on either new clients looking to employ their services, or their own ability to quickly adapt to new environmental standards in order to offer existing clients ways of improvement.

These different positions result in differences in symmetry levels. SIF have a high level of symmetry in the supply-chains and relationships, whereas Diskteknik and Swedish Meetings are dependent on a two-way-demand, both from clients and environmental organizations. Thus the levels of symmetry in these two companies are considered to be medium. Villa Sjötorp is also considered to be in the medium levels of symmetry, due to their organization not

being reliant on the services offered by Diskteknik, nor overly dependent on the regulations and criteria's of SIF.

5.2.4 Informality

The social interactions between the presented companies are highly formal. SIF communicate the new criteria's and standards through publications and articles. In turn both Diskteknik and Swedish Meetings take a similar approach to delegate changes and offer new services to their clients. The criteria's of the Eco-label are not very dependent on documentation of the development processes, nor by supervision of ongoing processes, but rather by the functionality, stability, quality and maintenance of the result of development. The same goes for the follow-up and feedback processes, which are mainly done through formal reports. This indicates low levels of informality.

Diskteknik and Swedish Meetings make better use of informality in their operations. Mainly due to the nature of the business, since there is a need for marketing and selling services and products. Besides this there is also a lot of face-to-face interaction between sales personnel and clients. Because of the presence of this interaction, one can assume that there is some informal interaction in these relationships, more than in that of SIF. Thus the level of informality is classified as medium.

5.2.5 Buyer-Supplier Relationship Summary

The different levels of Complexity, Continuity, Symmetry and Informality, show of similarities and differences between the participating companies of this research. While the above discussion argues for why the levels of each variable was classified as either low, medium or high, the below presented matrix clarifies those findings.

Table 5.1 Summary Buyer-Supplier Relationship

	Continuity	Complexity	Informality	Symmetry
SIF	high	high	low	high
Diskteknik	high	medium	medium	medium
Cleano AB		medium		
Villa Sjötorp				medium
Swedish Meetings	high	medium	medium	medium
Proton	high	medium		

5.3 The Interaction Process model

The Interaction Process serves as an extension of the Buyer-Supplier Relationship model presented above. Previous findings will be further analyzed in this model.

5.3.1 Information Exchange and Product Exchange

One of the key factors to successful collaboration has proven to be the information being exchanged between the participating companies. Looking at SIF and its process of labeling companies with the Eco-label, the main information being shared is that of the required criteria's to be fulfilled in order to qualify for the label. At the same time the companies applying for the label report back what possibilities they have of achieving the different stages of eco-labeling. Since the collaborations and day-to-day operations of SIF are characterized on feedback and follow-ups, these information exchanges are very important. Adding to this is the continuity aspects of SIF. Since all the approved companies are intended to be on a long-term basis, this information sharing becomes what shapes the organization's success. Furthermore the average consumer has been given a fair amount of information regarding what the Eco-label is and what it stands for. This has caused the Eco-label to gain the consumers trust and any deviant approved product will harm this trust. The high levels of symmetry of SIF are the

result of the organization's work for maintaining a good reputation and trustworthiness.

Diskteknik and Swedish Meetings are also characterized by information sharing. Diskteknik share information with both clients and SIF, which enables the company to provide its services at the best of its abilities. While there is a lot of information sharing going on, there is also product exchange in terms of Diskteknik's own products, which incidentally have been eco-labeled through collaboration with SIF and other environmental organs. The products are a large part of the services they provide because of this. By swapping to these products, clients take an easy first step towards achieving some criteria's for the Eco-label

Swedish Meetings on the other hand deal mainly with information sharing regarding the facilities used for the conference business. Combined with the collaborations with Norup, the overall information sharing of Swedish Meetings is vast and important for several instances of its network. It has amongst things resulted in better purchasing power for the member organizations of Norup, as well as the eco-labeling of several conference facilities.

For a company like Villa Sjötorp, the information sharing is an important aspect for the collaborations with Diskteknik and the labeling processes with SIF. However the major part of this sharing consists of marketing and selling of its services. The product, or service, Villa Sjötorp requires both the attention of consumers and the approval of environmental organizations. Thus the information sharing is slightly different from that of Swedish Meetings or Diskteknik, since it targets the individual consumer as well.

5.3.2 Technology and Organizational Experience

Technology is the key to improving the environmental impact of organizations. Through improvement of technological aspects, Proton Group managed to develop an entirely new chrome surface treatment process, which in turn lead to competitors developing similar processes. The organizational experience in co-development of Proton Group also played a major part in the

success of the development project. Relating back to information sharing, organizational experience affects the will and ability to share the proper information and previously established trust between the involved organizations.

While SIF generally do not develop new technologies themselves, the organization still takes into account what changes are reasonable and achievable when eco-labeling new or improved technologies. This can be related to the organizational experience of SIF, which is characterized by the sharing of information through feedback and follow-ups. The constant evolvement of criteria's and standards depends heavily on this information sharing and the development of new technology on the market, and both these aspects are affected by the organizational experience of both SIF and the companies applying for the Eco-label.

Technological developments enable companies to produce new or improved products, which is the case for Diskteknik. The eco-labeled assortment of products is the result of technological advancements. Once again this is related back to the information sharing aspects of collaboration, which in turn also affects the organizational experience in terms of will and ability to share information with suppliers, clients and partners. The continuity of collaboration relationships is based on the organization's experience with partnering firms and organizations, either creating trust or distrust. Looking at the collaboration with SIF, trust has been established and the result is seen in the assortment of eco-labeled products and the ability to help clients achieve the standards for eco-labeling. The close association with SIF also grants Diskteknik advantages in terms of competition, since the Eco-label in itself is a trusted brand, being associated with it automatically sends the message of Diskteknik also being trustworthy.

The same applies for Swedish Meetings, though the technology aspect of the company is not as influential here, as it relies mainly on the eco-labeled products of other organizations. Still it is the organizational experience and relationships with environmental organs that enables Swedish Meetings to help conference facilities to gain green-labels. Having gained favor both amongst supplying organizations and green-labeling organizations, the collaboration aspects of Swedish Meetings have resulted in a stronger position on the market

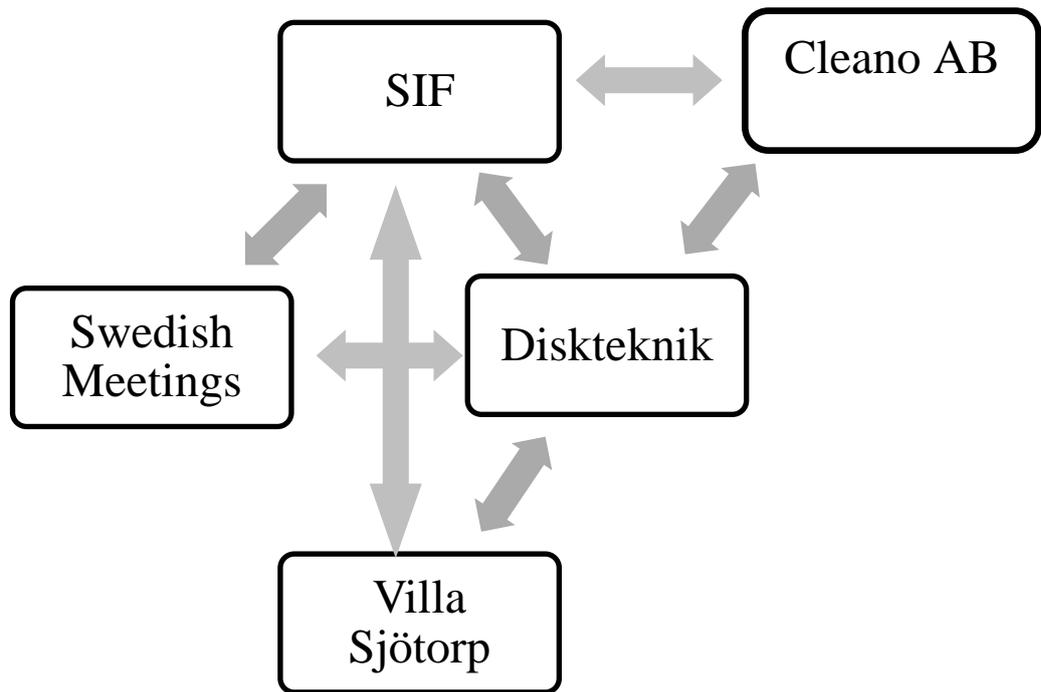
and gained the trust of clients. This in turn affects the continuity of relationships with other organizations, where long term relationships are formed in order to generate a broader clientele and a stronger position on the market.

The organizational experience of Villa Sjötorp is characterized by environmental thinking and very influenced by the CEO's own vision of a better environment. While the green-labeling of the organization is a major part of its daily-operations, the idea to profits simply from going-green is thought of as wrong. Villa Sjötorp takes great pride in portraying themselves as environmentally friendly independently from profit thinking.

5.3.3 Market Structure and Position in the manufacturing channel

The increase in demand for environmentally friendly products and services has increased in the last few years. This in turn has caused some companies to focus more on the environmental impact aspects of their business, or even differentiated as being environmentally friendly. The positions in the manufacturing channel of the investigated supply-chain can seem slightly complicated. To simplify the presentation of the structure of the supply-chain it, the figure below provides a visualization of it.

Figure 5.1 Structure of the Supply Chain



(Made by Marcus Malveholm and Maria Nilsson, 2009-05-20)

5.3.4 The Control dimension

The company with the most need of control in the investigated supply-chain is SIF. Their Eco-label is the trademark of the organization and should approved products or processes fail to maintain the required quality, it reflects badly onto SIF. However this is countered by conducting follow-ups and by only approving a product or process for four consecutive years, while at the same time developing and improving the criteria's to be met. SIF also have the option of refusing, and even blacklisting, companies applying for the eco-label. This puts SIF in control of what, who, if and when companies may use the eco-label.

Proton Group also had elements of control affecting the development of the chrome surface treatment process. However the control dimension was somewhat different. Here the set project budget, project life time, quality, performance and the interaction between the involved parties was the focus for supervision. The process of development as such requires a different kind of control, where the financial aspects and the element of time are of great

importance. This was mainly done by the project leaders, as well as the managers involved in the process.

In the case of Diskteknik, the elements of control are not quite as significant. While their services depend on their ability to help clients achieve the criteria's set by SIF, the end responsibility falls on the client company answering to SIF. However the products produced by Diskteknik do require regular control and supervision to ensure each batch hold the required quality, as well as to SIF. The constant development of standards and requirements set for the eco-label also require Diskteknik to keep control over maintenance of their production processes, while at the same time staying up to date with new standards and continuously encouraging improvement of their own processes. In this aspect Diskteknik have to answer to the parent company, Cleano AB.

5.4 The VALSAT model

The pilot study revealed information regarding how the development process was initiated and executed. Proton Group received requests from a client regarding developing an environmentally friendly chrome surface treatment production process, specifying what qualities and specifications were wanted. This is the first set of WANT's in the mentioned development. The next set is what Proton Group wanted to achieve with this development. Having listened to the client's request the opportunities in being first on the market with such a process, the possibilities of increased volumes from the very same as well as other clients and the reduced environmental impact this process would indulge were taken into account and put down as WANT's. This was followed by starting a dialogue with the client as well as with suitable suppliers, looking into what needs to be done in order to achieve the desired result – a combination of HOW's and WHAT's. The collaboration that followed was characterized by information sharing, knowledge integration and supervision of ongoing development. By integrating both suppliers and the client in the development process, Proton Group made sure the result had the specified requirements for immediate use once the project was finished.

The collaborations between Diskteknik, SIF and clients, such as Villa Sjötorp and Swedish Meetings, are similar to that of Proton Group. The clients of Diskteknik require either help with achieving the criteria's for an eco-label, or the green-labeled products they offer. These are the clients WANT's. Diskteknik on the other hand want to supply the clients with both services and products. What needs to be done in order to ensure the above mentioned WANT's, is specializing in the eco-labeling processes while at the same time producing eco-labeled products. This was done by entering collaboration with SIF, which lead to increased in-house knowledge for the requirements of eco-labeling, as well as association with a very trustworthy organization. Through this collaboration Diskteknik has the possibility of being part of the development of new eco-label criteria's, which is definitely an advantage since their products have become a part of the whole eco-labeling service they provide. In the same manner SIF has gained from this collaboration by having a trusted partner helping organizations applying for the eco-label and who also actively pursue other organizations to become environmentally friendly.

Swedish Meetings' collaboration with Norup was initially a way to improve the buyer-power of both their company as well as the facilities with which they work. The specific WANT's would be an increased supply of environmentally friendly products, leading to increased competition amongst those suppliers which presumably resulted in lowered prices. So by partnering with other firms, the gain lays in increased purchasing power for the collective of organizations involved with Norup.

Villa Sjötorp wanted to improve the environmental aspects of its business. While the organization was already considered environmentally friendly, the association with established green-labels was required in order to reach out to more customers. By employing the services of Diskteknik and applying for several approved green-labels such as the Eco-label, Villa Sjötorp became more obviously environmental friendly. Connecting the organization to trusted environmental labels lead to increased publicity and revenues for their business.

SIF wanted to reach out to as many consumers and organizations as possible in order to increase the environmental awareness. In order to do so they needed to create both publicity and trust for the eco-label, which was done through marketing campaigns and by entering collaborations with companies of a similar mindset, such as Diskteknik. These collaborations have led to what can be described as outsourcing of searching for new clients. This in turn allowed SIF to focus on improving and expanding the eco-label across more industries.

5.5 The Four Pillars

5.5.1 Policy Deployment

The term Policy deployment is described as a “total quality” philosophy. This kind of philosophy is highly evident in some of the companies presented in this thesis. SIF’s idea of a more environmentally friendly world has resulted in the creation of an eco-label which has become trusted by consumers and companies alike. The organization itself is of the non-profit kind and is characterized by the devotion to the environment. This is all related to the existing policies of SIF and how they have spread throughout the organization and been accepted by its members. The success of the Eco-label has resulted in an increased interest amongst companies and organizations to meet the requirements for the label. Thus SIF has influence over what the applying companies need to change in order to become certified. If a company wants to be associated with the eco-label it has to adapt to the changes required by the SIF.

Villa Sjötorp is in a very similar situation. The CEO chose to hire people with a similar mindset, which has led to the environmental policies of the company being less of a guideline and more of a lifestyle. In turn this has led to the employees committing to the cause and feeling a sensation of making a difference for the environment. The mindset at Villa Sjötorp also affects its choice of suppliers and by having high requirements on what products to purchase, they can also influence the supplying organizations.

Influence on suppliers is also something which Swedish Meetings has done through policies and by collaborations. The company has made a lot of impact on supplying organizations by forming and being part of a collective of

similar companies, increasing the purchasing power of the collective as a whole and generating enough influence to demand changes on behalf of the supplying organizations. In by doing so the supplied assortment of environmentally friendly products has increased while at the same time the prices have decreased. This has made “going-green” an economically viable option, rather than just a differentiating option. The result for Swedish Meetings is an increase in interest from conference facilities to achieve eco-label status, which means more business for Swedish Meetings.

Diskteknik has always been characterized by economizing. The founder and CEO of the company have always had a strong disliking for any kind of waste, which is also seen in the company’s policies. The choice to focus on the environmental aspects of the hotel and restaurant industry, has allowed Diskteknik to specialize in reducing waste and provide services for achieving eco-label criteria’s. The collaboration with SIF was a natural step for the organization, since the mindset was of similar nature and a partnership would be mutually beneficial.

5.5.2 Cross-functional Management

Cross-functional management activities typically cause internal adjustments in a company’s operating systems. The criteria’s and requirements set by SIF is cause for adjustments for all companies applying for the eco-label. Coped with the constant improvement and development done by SIF, all companies which have previously qualified for the eco-label have to abide to changes posed by SIF in order to maintain the label. As such the external influence of SIF is very high and puts them in a position of power in the supply-chain.

For companies like Diskteknik cross-functional management is of great importance in the daily operations. The products and production processes have to be gradually improved in order to meet SIF’s requirements, while at the same time Diskteknik is involved in providing feedback from their clients to SIF. In order to optimize this, Diskteknik has chosen to appoint responsibility of districts to its sales- and service personnel. Since the policies of the company are deeply rooted in the minds of these employees, keeping up to date with changes

and requirements set by eco-organizations is done by genuine interest rather than being seen as tedious extra work.

Swedish Meetings is one of the companies which are in the middle of this process, introducing the SIF labeling to its members. It will be vital to act through the organizations and its different areas in order to adapt towards the criteria set by SIF. Another important aspect in the cross-functional management is how to “get everyone on board”, this has been introduced by asking the members and co-workers what they want, in work-shop and surveys. This has shown that the majority wants to go green. It is a smart way to overcome common cross functional problems, as “we and them”. It has given the member a good feeling, where they have taken a part of the decision/future and the “we” feeling is introduced as all functions work together towards the same aim.

As Villa Sjötorp is a quite small organization compared to the other ones, the cross functionality is more of a daily work between employees. Through short communication channels the cross functional management should exist on a daily basis, for instance between the kitchen and the waiter, between the booker and the housekeeper. Communication will be the main element, but as Ellika mentioned in the interview. The communication between employees is good and that the strategy is influential in both the organization as well as in people’s mind.

5.5.3 Standardized Operations

Since the companies exist mainly in the service industry a standardization would not be as commonly used in the way as it is described in this model. We will instead focus on the control aspect and give a short description of different mechanisms which could occur. One control aspect could be the way that feedback is used both from the public as well as from the clients. The SIF works hard with these types of public and control areas. They also work with follow-ups and controls of the clients’ environmental work. In that sense one could argue that their product is standardized in its certification.

5.5.4 Supply Integration

Supplier integration is arguably the most important aspect of intra-organizational collaborations. Looking at Swedish Meetings and the collaboration with Norup it is clear just how big an impact supplier-integration can have. The same applies for Diskteknik and SIF, where the cooperation has benefitted both organizations. This in turn creates a desire to belong to the same network amongst other companies who see the potential of being part of a well integrated supply-chain. The existence of information exchange, social exchange and co-development offer much potential to the involved parties.

What the collaboration with Norup has shown is that a lone company has little power over its surroundings, while a collective of companies embodies the power of the pack - together they are strong. Such collaboration requires all involved parties to participate and show interest in the better for the collective. The same applies for a well functioning supply-chain. Relating back to Proton Group and the pilot study, the development process made good use of the expertise of the supply-chain. Rather than relying entirely on in-house knowledge, Proton Group combined it with that of the most suitable members of its supply-chain. In by doing so the co-development lead to strengthen its organizational relationships while at the same time ensuring future orders from the client and continuous good purchasing conditions from its suppliers.

5.6 A Summarized Analysis Discussion

The analysis views the empirical material through the eyes of the theoretical framework. The identification and explanation of why some of the empirical material fits one or more theory aspects, allows for displaying of the authors interpretation of the gathered empirical material.

While the differences in company size and position in the supply-chain or organizational network varies, the overall conclusion of the analysis discussion is that all organizations are affected by what is decided by SIF. Having chosen to eco-label products or services, the presented companies have also, to some extent, subdued themselves into abiding to requirements posed by SIF in

order to maintain the trusted and valuable eco-label. While this may seem to be a harsh way to go green, the organizations' association with SIF is highly valued and not likely replicable. Thus one can determine that there is value in becoming more environmentally friendly, besides that of a better environment. Diskteknik for instance, has specialized in helping other organizations achieving the criteria's of SIF, while at the same time providing their own eco-labeled products as a mean to going green. The continuity and information sharing that characterizes Diskteknik's collaboration with SIF has borne fruit for both participants. At the same time Villa Sjötorp, which has always been considered an environmentally friendly company, had to apply for established eco-brands, due to the consumer's trust in those labels.

Table 5.2

	Continuity	Complexity	Informality	Symmetry
SIF	high	high	low	high
Diskteknik	high	medium	medium	medium
Cleano AB		medium		
Villa Sjötorp				medium
Swedish Meetings	high	medium	medium	medium
Proton	high	medium		

Looking at the identified levels of continuity, complexity, informality and symmetry, one can see similar levels for most companies in three of the factors. The high levels of continuity indicate that the longevity in a business relationship is of high importance for collaboration. The identified complexity share similar levels for most companies, however while the complexity may have some impact on how the communication between companies is done, the authors argue that the end result of collaboration, the eco-label, is the same no matter how many individuals are involved. Thus complexity is not considered as highly significant and will not be further presented in this research.

Informality levels vary from low to medium for the three companies in which it was identifiable. Similar to the approach on complexity, informality is also considered of low significance. The authors argue that while the manner in

which information is communicated is important for some collaboration relationships, the processes resulting in eco-labeling of products or processes are not characterized by this. The information sharing required for achieving or maintaining an eco-label does not depend on the manner in which it is communicated.

Symmetry levels vary between the investigated companies, but it is apparent that SIF maintains the highest level and that this factor is important for their work. As such the symmetry factor is deemed important for collaboration in eco-labeling. Without allowing SIF to hold the most influence and power over the relationship there will be no eco-labeling.

Table 5.3 Factors identified

Factors	SIF	Diskteknik	Cleano AB	Villa Sjötorp	Swedish Meetings
Information Exchange	High	High	Medium	Medium	Medium
Experience	High	High	Medium	Medium	Medium
Control	High	Medium	Medium	Medium	Medium
Want's	The government	The CEO	The CEO	The Founder	The members
What's	Sustainability	Sustainability	Sustainability	Green thinking	Eco label
How's	Society	Customer	Customer	The business	The market
Policy Deployment	High	Medium	Medium	High	High
CFM	High	High	Medium	High	Medium
Standarization	Low	Low	Low	Low	Low
Intergration	High	High	Medium	Medium	High

Table 5.3 illustrates a summary of the different factors identified in the analysis chapter for the participating companies. These factors are all deemed as important factors for collaboration, however some are considered more important than others for eco-labeling.

The information exchange is very important for eco-labeling. The sharing of information leads to continuous development of the criteria's and processes associated with the eco-label. It is also an important variable for

determining *how* to achieve an eco-label, where the *experience* of companies such as Diskteknik, Swedish Meetings and SIF enables smaller, less experienced companies to take part of their expertise in the area of eco-labeling. *The information* sharing also serves as an important factor which enables SIF to maintain *control* over their label and make sure the requirements for it are kept. *The integration of suppliers* is important for companies seeking to eco-label, as well as for attaining favorable prices on purchases. Looking at the Norup collaboration, where several smaller companies have joined forces, the purchasing power has increased for the participating companies, enabling them to pose requirements on the suppliers.

Cross functional management is very important as it allows for supervision and *control* of the different stages and participants of collaboration. It is also important for the focal company to make sure all involved departments are functioning as desired and to make sure the requirements posed for the eco-label are fulfilled throughout the granted label-period.

6 Concluding Research Remarks

Chapter six includes the conclusions drawn from the research conducted, answers to the research questions, and theoretical, managerial and methodological implications of this thesis as well as suggestions for future research. It ends with a few concluding words.

6.1 Conclusions drawn based on the analysis

While all presented aspects in chapter five play important roles in collaboration and developments, some distinguish themselves as more important than others. The analysis chapter identifies these aspects as follows:

- Continuity
- Organizational experience and trust
- Information sharing and supplier integration
- Cross-functional management
- The elements of control
- Symmetry

Continuity relates to the intentions of creating or maintaining long-term organizational relationships. This is considered to be the first and foremost important aspect for initiating and continuing successful collaborations. Evidence of this is found in the fact that the Nordic Eco-label only being viable for four years, after which renewal is required and that during that time SIF conducts follow-ups to ensure that the requirements are still met. Even though four years time can be considered short-term, the prospects with which SIF approves of use of their label, is of long-term character.

The second important aspect is the organizational experience and trust. Previous encounters with an organization shape the perceived image of their accountability and its trustworthiness. This is evident in the collaboration between SIF and Diskteknik, which has been going strong for many years now. The relationship has evolved many times and Diskteknik is now considered one of the

primary collaboration partners in terms of helping SIF eco-label hotels and restaurants.

The integration of suppliers and the sharing of information in-between partnering companies are third on the menu. In particular the sharing of information is a vital part of collaboration and for gaining the trust of participants. Once again the relationship between SIF and Diskteknik provides a clear example of this. It is in the interests of SIF to share information with Diskteknik in order for them to help clients achieve the posed criteria's for the eco-label. In the very same manner it is in the interest of Diskteknik to provide feedback to SIF, since it allows them to be part of the development and improvement of new criteria's. The importance of integration of suppliers is evident in the case of Proton Group, where the development process included the best suited suppliers in order to achieve the best possible result. This also led to strengthening the organizational relationships and continuous collaborations.

The fourth aspect is the cross-functional management. In order to manage a collaboration one first need to manage the focal company. If the company structure is not optimized for best performance, there is little chance that collaboration with this company will result in the best result. Thus prior to partnering with other companies it of importance to make sure the focal company operates at its best. In the same manner it is also important to incorporate the employees in the vision and aim of the company. This was achieved by Swedish Meetings, through the use of workshops and in-house surveys. If the employees feel part of the company and its vision, changes will be more easily introduced.

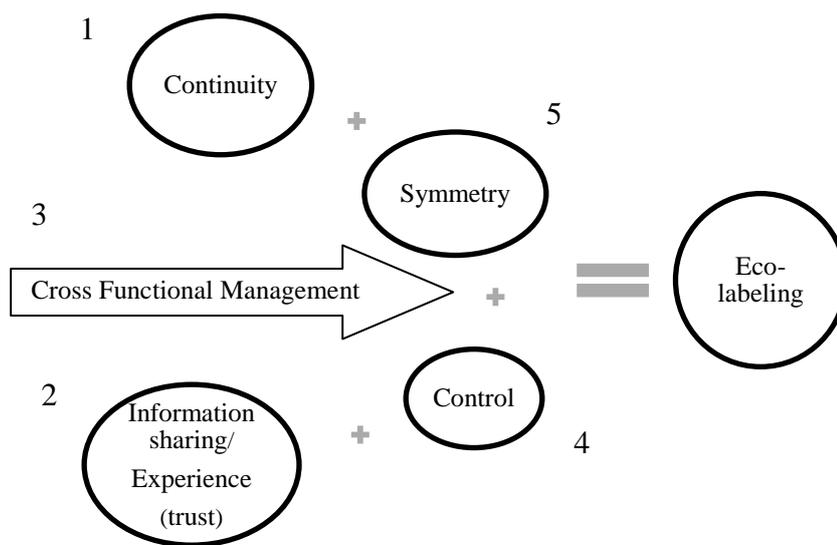
The elements of control serve the purpose of staying on schedule, within budget means and to make sure there are no deviances in quality. Coming in fifth on the chart, it is still an important aspect. SIF have to continuously conduct follow-ups on the companies approved for an eco-label, making sure the set requirements are being met for the duration of the label's lifetime. Should any deviances in product quality arise it would reflect badly on SIF and that is something they wish to avoid.

Last but not least is the symmetry of the organizational network or supply-chain. This aspect is important for the organizations providing green-

labels. This is due to the fact that they have the power to refuse companies applying for labels. Should a company not meet the requirements in time, or have vast environmental impact in other part of its operations than that which they seek to eco-label, the labeling organization has the right to not approve them. However let's pretend Proton Group's development project took too long time to finish, it is in the client's interests to be able to cancel its part of the collaboration if the time schedule is not met.

In order to display the interaction between these aspects in collaboration for eco-labeling, a model was constructed. It presents how continuity, symmetry, control and information sharing, coped with organizational experience and trust, lead to eco-labeling and how it is all affected by cross-functional management.

Figure 6.1 Collaboration for Eco-labeling



(Made by Marcus Malveholm and Maria Nilsson, 2009-05-25)

6.2 Answering the Research Questions

This research was built on the research questions presented in the introduction chapter. So far this thesis has resulted in the building of a model, which will be used for answering the second research question.

1. How does the development of environmentally friendly products or services create and spread value for companies?

Environmentally friendly products or services are value creating in several ways. In this research the development of said products is characterized by collaboration between two or more organizations. Information sharing is one factor of value creation, where the knowledge of each involved company is combined and the organizational relationships is strengthened. This in turn can lead to increased efficiency, both in terms of production and logistics.

There is also value creation to be found in eco-labeling, where the label not only works as a mean to differentiate a product or service, but can also provide the product with a built-in-consumer-trust associated with the eco-label.

Furthermore there is also value to be found in the process of developing environmentally friendly products or services in the form of satisfaction and approval from the members of the organization. Eco-labeling can lead to increased appreciation of the work of the organization, leading to employees identifying more with the strategic visions and aims of the organization.

Apart from the value creation for the company, there is also value to be had for the community surrounding the organization. The more environmentally friendly a company is - the higher the probability of people outside of the organization associating the company with something positive - is.

2. What parties are involved in the development of said products or services and how does the outcome affect them?

The involved amount of parties may vary depending on the nature of the development. However there are at least two organizations involved – the focal company and a green-label organization. Each involved party is affected in terms of:

- Continuity – The long-term or short-term relationship is affected by the outcome of the development.

- Information sharing, trust and organizational experience – The exchange between the involved companies affects the knowledge of each individual company. It also affects the trust the companies have towards one and other and the overall organizational experience with each other and with collaboration.
- Control – The company approved, or in the process of being approved, for an eco-label will be subject to control and follow-ups in order to ensure the posed requirements are always being met.
- Symmetry – The company applying for a green-label is affected in terms of having to accept and achieve the requirements posed by the labeling organization. This may also include having to constantly improve the company's operations in order to maintain the rights to the distributed label.
- Cross-functional management – Gaining an eco-label is the result of collaboration between partners and departments. Cross functional management serves the purpose of aligning the participants and ensuring that all involved departments function correctly. Thereby the model defines the importance to incorporate Cross-functional management throughout the process.

6.3 Managerial implications

The managerial implication of this research is the model which was constructed based on the findings of the analysis and gathered empirical material. This model can be used as a mind-map for how to go about business when seeking to attain an eco-label or as a step-by-step checklist to make sure the presented variables are taken into account.

6.4 Theoretical implications

The theoretical implications would be the construction of a model, which works as a mean to visualize the factors affecting the process of eco-labeling. It also displays the interaction between the important variables of collaboration identified

in this research. As such it may present other researchers with new ideas of how collaboration can result in not only improved organizational relationships, but also generate value for the atmosphere and environment surrounding the companies.

6.5 Methodological implications

The methodological implications would consist of how and why to choose different approaches when conducting research. The pilot interview has been vital for this research and granted the authors much information and a pre-understanding to work with from the start. It also provided information resulting in the problems and focus of this research, while at the same time complemented the other empirical material in the analysis chapter. This has given the research a perspective both from the producing- and the service industry.

7 Future research and suggestion

For future research we suggest a more long-term study whereas one could follow a couple of companies and see how this collaborations and thinking develops. Will SIF labeling maintain the trustfulness and competitive edge in their certification? If companies which have chosen to certificate their products or services will continue to improve their environmental influences or not?

Another interesting aspect would be to compare differences in environmental labels and to compare this between countries.

Bibliography

Books:

Albaum, G, Duerr, E & Standskov, J, 2005, *International marketing and export management*, fifth edition, England: Pearson Education.

B. Gudykunst, William, 2003, *Cross-Cultural and intercultural communication*, United States: Sage Publications.

Carliss Y, Baldwin & Kim Bark, 2000, *Managing in an Age of Modularity*, United States, Harvard Business Review

Ford, D, 2002, *Understanding business markets and purchasing*, third edition, England: Thomson Learning.

Gadde, L & Håkansson. H, 1993, *Professional purchasing*, London & New York: Routledge.

Gadde, L & Håkansson, H, 2000, *Supply Networks Strategies*, United Kingdom: John Wiley and Sons.

Hill, W, Charles, 2005, *International business competing in the global marketplace*, fifth edition, New York: McGraw-Hill/Irwin.

Hines, Peter, 1994, *Creating World Class Supply Chains – unlocking mutual competitive advantages*, UK, Financial Times Pitman Publishing

Hines, P, Lamming R, Jones D, Cousins P & Rich N, 2000, *Value Stream Management – Strategy Excellence in the supply chain*, UK, Pearson Education.

Håkansson, H & Johansson, J, 2001, *Business Network Learning*, United Kingdom: Elseiver Science.

Håkansson, H & Melin, L, 1978, *Inköp*, second edition, Lund: P A Nordstedt & Söners.

Håkansson, H & Snehota, I, 1995, *Developing Relationships in Business Networks*, London & New York: Routledge.

Kaminsky, P & Simichi-Levi, D, 2003, *Designing and Managing the Supply Chain, concepts, strategies and case studies*, second edition, New York: McGraw-Hill companies.

Miljöledning vid upphandling & inköp, 2004 Stockholm, Jure Förlag AB

Rosengren, Karl-Erik, 2000, *Communication and introduction*, Great Britain: Sage Publications.

Saunders M, Lewis P & Thornhill A, 2007, *Research Methods for Business Students*, fourth edition, England: Pearson Education.

Van Weele, A.J, 1997, *Purchasing Management, analysis, planning and practice*, United Kingdom: International Thomson Business Press.

Van Weele A.J, 2005, *Purchasing & Supply Chain Management*, fourth edition, London: Thomson Learning. 71

Yin. K, Robert, 2003, *Case Study Research Design and Methods*, third edition, UK, India, California: Sage Publications.

Articles:

Axelsson Björn, BA., Buying Business Services: Analyzing the service-buyer provider interface. [Online] Erasmus Research Institute. Available at: <http://www.impgroup.org/> [Accessed 16 September 2008] search word: Björn Axelsson.

Eisenhardt M.Kathleen, KE., 1989. Building Theories from Case Study Research, *The academy of Management Review*, [online] 14, (4), p. 532-550, <http://pages.cpsc.ucalgary.ca/~sillito/cpsc-601.23/readings/eisenhardt-1989.pdf> [2009-04-15]

Heuvel van den Willem-Jan, WH,. 2002. Cross-organizational workflow intergration using contracts. *Elsevier*, [online] 33, 247-265, <http://www.sciencedirect.com/science> [2009-03-30]

Henschel David, and Puckett M Sean, 2005, Refocusing the Modelling of Freight Distribution: Development of an Economic-Based Framework to Evaluate Supply Chain Behaviour in Response to Congestion Charging, *Transportation*, [online] Vol. 32, (No. 6), p. 573-602, <http://springerlink.metapress.com.ezproxy.bibl.hkr.se/content/q1265x707585w041/?p=b0fb4a170ae04f34aaee59d183396dfc&pi=10> [25 September 2008]

Håkansson, H., Östberg, C. 1975, "Industrial marketing. an organizational problem?", [journal sample] *Industrial Marketing Management*, Vol. 4 No.1/2, pp.113-23. Ordered from the library. [20 September 2008]

Lee Li, LL., 2004. Networks, Transactions, and Resources: Hong Kong Trading Companies' Strategic Position in the China Market. *Asia Pacific Journal of Management*, [Online] Volume 18 (Part 3), 279-293, <http://springerlink.metapress.com.ezproxy.bibl.hkr.se/content/kj260643937u6xp6/?p=1a351590d60640f2a4f699c834381e96&pi=10> [17 September 2008].

Nakayama Makoto, MN. 2003. An assessment of EDI use and other channel communications on trading behavior and trading partner knowledge. *Information & Management*, [Online] Volume 40 (Issue 6), P. 563-580, <http://www.sciencedirect.com> [2009-04-15] search word: title.

Owen M. J. , Lee L., Sewell G., Steward S. and Thomas D. 1999, Multi-agent trading environment, [online] *BT Technology Journal*, Vol 17, (no. 3), p. 33-43, <http://springerlink.metapress.com.ezproxy.bibl.hkr.se/content/h063613826272558/?p=ead1443c7ed24b139ff8a52852d37a6c&pi=2> [2009-03-30].

The Blackwell Encyclopedic Dictionary of Organizational Behavior , Nicholson, Nigel.; Schuler, Randall S.; Van de Ven, Andrew H, *Cambridge, Mass. Blackwell Publishers*, 1998, <http://www.netlibrary.com.ludwig.lub.lu.se/Reader/> 2009-05-31
Valuing prices in present of network effects, Dingkun Ge, USA, *Journal of product and brand management*, p 174-185, vol. 11 no. 3, 2002, www.emerald.com 2009-04-25

Organizing for network synergy in logistics, Jari Juga, Turku School of Economics and Business Administration, Finland, *International Journal of distribution and logistics management*, Vol. 26, No 2, 1996, p.51-67. www.emerald.com 2009-04-25

Appendices

Appendix 1.

Questions which the interviews are based on:

Why choosing to niche within eco-labeling?

Who or what has been the factor to eco-labeling?

Customers respond?

Value creating/Value destroying?

Affect through the supply?

Collaborations?

Managed/Introduction?

Trust?

What's the out-come?

Future work or satisfied?

Strategic decision? Aims and values in culture?

High investment costs?

Feed-back?

The process from start to end?

Has this changed your supply process?