Digital Strategies and Strategic Alignment

The Existence of Digital Strategies and Their Alignment with Business Strategies for Small and Medium-sized Swedish Manufacturing Firms

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Acknowledgements

Abstract

Increased digitalization and increased use of digital technologies in a multitude of applications affect companies and their environments. Adapting to the change is important to keep competitive advantage. Generally, small and medium-sized enterprises (SMEs) as well as the manufacturing industry are lagging behind in digitalization and digital maturity in comparison to larger companies and other industries.

The purpose of the study was to investigate how SMEs within the manufacturing industry are affected by and work with digital technologies, and especially if they have digital strategies and how those digital strategies are aligned with the overall business strategy, given their existence.

Through a qualitative and abductive approach, a multi case-study was performed with six participating manufacturing SMEs based in the region of Skåne, Sweden. Through qualitative interviews with key executives empirical data was retrieved from the case companies which together with a literature study gave the data input for the study.

When analyzing the empirical data, the Strategic Alignment Model by Henderson and Venkatraman and especially the derivatives of the model proposed by Luftman and Gutierrez and Serrano respectively were used.

It was found that the case companies generally lacked digital strategies and had a low level of strategic alignment according to the theoretical models employed. However, although the case companies, according to the theoretical frameworks, generally did not work with explicit digital strategies and had a low level of strategic alignment, it was found that they utilized digital technologies to various degrees and viewed digital technologies as tools to achieve their overall strategic goals. Further, it was found that the specific term 'digitalization' was generally not used by the case companies. During the project, it was found that the theoretical frameworks used for the analysis were not fully applicable for SMEs in the manufacturing industry, and subsequently an evaluation of the framework was performed. A number of factors and drivers explaining why the case companies had not developed specific digital strategies, but also explaining what prioritizations had been made when investing in and developing digital technologies, were also found.

Keywords: Strategic Alignment, Digital Strategy, Strategic Alignment Model, Strategic Alignment Maturity Model, Digitalization, SMEs, Manufacturing Industry.

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List of Acronyms

CAD	Computer Aided Design
CEO	Chief Executive Officer
CFO	Chief Financial Officer
CIO	Chief Information Officer
CRM	Customer Relations Management
ERP	Enterprise Resource Planning
EU	European Union
FY	Fiscal Year
GDP	Gross Domestic Product
GVA	Gross Value Added
ICT	Information and Communication Technology
IS	Information Systems
IT	Information Technology
MSEK	Million Swedish Krona
ROI	Return on Investment
SAM	Strategic Alignment Maturity
SAMM	Strategic Alignment Maturity Model
SME	Small and Medium sized Enterprise

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1 Introduction

This chapter aims to introduce the study, describe the context of it and elaborate on why it is an important area to study. The chapter is divided into five sections. First, the background to the study is described, followed by a problem formulation. The third section presents the purpose of the study. The fourth section describes the delimitations that apply to the study, and lastly the thesis outline is presented.

1.1 Background

1.1.1 A Digital Transformation

We are currently in the midst of the development from an industrial society to a digital society, where digitalization is one of the drivers behind the development (Digitaliseringskommissionen 2016). The digital transformation is present in most aspects of everyday life and throughout businesses in various applications, and the development has been increasingly rapid since the mid-1990s when the internet started to reach the broader masses (Näringsdepartementet 2011). In the business application, the term digitalization is often used for the increased use of digital technologies, and as Gartner (2017a) defines it, "digitalization is the use of digital technologies to change a business model and provide revenue and value-producing opportunities".

Digitalization is one of the most important megatrends currently influencing the world economy (Blix 2015). In the digital economy there are several more specific trends that play important parts in the development of our society, as for instance cloud computing, social networking, mobility and big data analytics (OECD 2014). The trends and the digital technologies are changing companies' ways of doing business, which Kane et al. (2015) investigated. The result of their study shows that the driver for digital transformation is not necessarily the technologies per se, but rather questions concerning leadership and governance, such as strategy, culture and competence. Bharadwaj et al. (2013) report similar results and state that successful digital strategies are less about implementing new technology and instead more about restructuring businesses to be able to use the information that the new technology enables.

Previously, theory has proposed that the focus for companies should be on having a digital strategy that is coherent with the overall business strategy. But the digital strategy has always been subordinate to the business strategy. Due to the increasing importance of digitalization in the economy, voices are now raised for a need of merging companies' digital strategies with their overall business strategies, resulting in a digital business strategy (Bharadwaj et al. 2013).

The concept of merging or integrating digital and IT strategies with business strategies is called strategic alignment (Henderson & Venkatraman 1989). Strategic alignment has been an important research area during the last decades, and has been rated among the top concerns and challenges for executives (Avison et al. 2004, Gerow et al. 2014, Coltman et al. 2015). A number of frameworks has been presented, developed and validated to enable the assessment of strategic alignment within enterprises (Henderson & Venkatraman 1989, Luftman 2000, Gutierrez & Serrano 2007).

1.1.2 Implications for Swedish Businesses

Sweden has during the last few decades been through a technological revolution based on developments within Information and Communication Technology (ICT). The way we produce products and services has to a large extent been influenced by new technological opportunities. Companies have made great ICT investments, which has led to that Sweden today has a world leading ICT sector. Companies that do not adapt to this development are facing the risk of extinction. Digital technologies are helping companies to improve productivity, decrease costs, reach new markets, change their business processes and create new businesses and job opportunities (Tillväxtanalys 2016).

A study made by Tillväxtanalys (2016) analyzes the digital maturity of Swedish companies. The study concludes that a number of industries, such as ICT, retail and services, are more digitally mature in comparison to other industries, but also that smaller companies generally lag behind larger companies regardless of industry or company function. Small and medium sized enterprises (SMEs) are of great importance to economical ecosystems, both on regional, national and international levels as they represent a vast majority of total enterprises, employ a majority of the workforce and add a significant part to countries' gross domestic product (GDP) (Eurostat 2016). Kane et al. (2015) find that companies that are more digitally mature generally has other goals with their digital strategies than the less mature. What separates the more mature companies from the less mature ones is that the first group has realized that the digitalization is changing the entire business and that they are actively working with this change.

Technological developments have during the last hundred years mainly led to higher productivity, better jobs and increased wages. Especially the digitalization during the last decades has changed several industries significantly. A lot of new opportunities for work has been created in the service sector. On the other hand, hard and rigorous jobs like the ones in manufacturing and construction have, to a large extent, disappeared due to new technology. The fast pace of digitalization and technological development of today has the potential to outrun humans. An increased number of jobs and tasks in manufacturing are at the risk of being automated (Blix 2017).

The Swedish manufacturing industry faces a lot of challenges. Digitalization is pushing the already fast changes and pace of adoption in the manufacturing industry. It opens up for new possible business models and diminishes others. Keeping up with the rapid technological change is especially challenging for small companies. Digitalization in the manufacturing industry together with the industrial companies' ability to create new business models is vital for the manufacturing industry's future success (Näringsdepartementet 2015).

1.2 Problem Formulation

The need of developing and implementing a digital strategy becomes important for companies to be able to keep up with the competition in today's digital economy. The literature is not only talking about the need of having a digital strategy, but the importance of integrating or merging the digital strategy with the overall business strategy (Bharadwaj et al. 2013). How companies are working with digital strategies today, however, is unclear. Do

companies even have specified digital strategies? If so, where are they placed in the organizations and who is in charge? And if not, why? To what extent is the digital strategy aligned with the business strategy in the organizations? Since SMEs in Sweden are lagging behind in their digital maturity but are vital for the economy, and since the Swedish government points out that it is the small companies, and especially within the manufacturing industry, that faces great challenges in the technological development, it is especially interesting to investigate those specific companies.

1.3 Purpose

The purpose of this study is to describe and analyze the existence of digital strategies and their alignment with the overall business strategies for Swedish small and medium sized enterprises (SMEs) in the manufacturing industry.

1.4 Delimitations

The study is performed as a master's thesis, limiting the time frame of the project to 20 weeks. The result is based on findings from a multiple case study consisting of a limited number of companies, in this case six, and a literature study. The study is limited to investigate the presence of digital strategies and their alignment with overall business strategies for Swedish SMEs within the manufacturing industry. More specifically, the study only includes companies based in the region of Skåne. Further, the thesis is limited to only analyzing qualitative data from the interviews with the participating case companies.

1.5 Thesis Outline

Chapter 1: Introduction
The first chapter of the thesis introduces the study to the reader and has the purpose of describing the context of it. The chapter discusses why it is an important research area and problematizes the subject. The purpose and the delimitations of the study are also presented shortly.

Chapter 2: Methodology
The second chapter presents and elaborates on the methodological choices to how the study was conducted. The chapter describes the research strategy of the study, how the study was performed and data collected as well as presenting the research process and credibility of the study.

Chapter 3: Theory
The third chapter presents the theoretical framework of the study by presenting relevant theoretical concepts. Firstly, the term strategy is explained and the Three Levels of Strategy is described. Secondly, theory regarding digitalization is discussed and the development and definition of a digital strategy is presented. The third section of the chapter describes different organizational structures and hierarchies within companies. Lastly, the concept of strategic alignment and the Strategic Alignment Model is introduced, together with the development into the Strategic Alignment Maturity Model.

Chapter 4: Empirics
The fourth chapter presents the empirical findings that were gathered during the study. The chapter is divided in sections according to the participating case companies. For each of the companies, a short introduction is given, how their organizations and strategic work is structured is described as well as how they are affected by digitalization and if they are working with digital strategies.

Chapter 5: Analysis
Chapter five presents the analysis performed in the study, which is divided in three sections. The first section includes the analysis and assessment of strategic alignment maturity of the studied companies. Further, factors and drivers affecting how the companies work with digitalization, digital strategies and the level of their strategic alignment are discussed. Lastly, an analysis of the practical use of the theoretical framework is performed.

Chapter 6: Conclusions
In the sixth chapter the study is summarized and concluded with the most important findings from the analysis, with the aim of satisfying and answering the purpose of the thesis.

Chapter 7: Reflections
The seventh and last chapter of the thesis presents final thoughts and reflections. Firstly, it presents the authors' own reflections on the results and conclusions of the study. Further, it elaborates on the thesis' contributions to academia, the case companies and Tillväxtanalys. Finally, the chapter finishes the report by presenting ideas for further studies.

2 Methodology

The aim of this chapter is to describe the methodological choices to provide transparency to how the study was conducted. The chapter is divided into five sections which describe the research strategy of the study, the characteristics and use of case study, how data was collected, the research process and a discussion about the credibility of the study.

2.1 Research Strategy

2.1.1 Methodological Approach

When conducting an academic study there are four types of methodological approaches. These are descriptive, exploratory, explanatory and problem solving. Which approach to choose for a research project depends on the goal and character of the study, since the different methodological approaches have different purposes. A descriptive approach aims to find out and describe how something works or is executed. An exploratory study instead has the purpose to deeply understand how something works. Explanatory studies aims to search for causal links and explanations for how something works, and a problem solving approach aims to find a solution to an identified problem (Höst et al. 2006).

The methodological approach for this study was chosen to be both descriptive and exploratory. Since one part of the purpose of the study is to describe and analyze the existence of digital strategies, a descriptive approach was chosen in order to describe and gain an understanding of the field, the organizations and their strategic work. To get an even deeper understanding and to be able to perform a thorough analysis regarding the second part of the purpose, alignment between overall and digital strategies, an exploratory approach was also chosen.

2.1.2 Research Logic

Research projects can also have different logical approaches, where the most common are deductive or inductive, or a combination of the two, called abductive (Bell 2006). A deductive research approach starts with performing a literature review, draws conclusions from the studied literature and presents the conclusions in propositions and hypotheses which are tested empirically and then presented in a general conclusion. An inductive research method has the opposite work process. In the inductive research method the knowledge and theory available is not enough, so the approach instead starts with empirical observations which then lead to new theory (Kovács & Spens 2005). The deductive approach aims to prove already existing knowledge, while an inductive approach is of an exploring nature (Holme & Solvang 1996).

The most suitable logical approach for this study was the abductive approach, a combination of the deductive and inductive. In an abductive approach the data collection and the theory development often are performed simultaneously and in an iterative process. The abductive approach is a common research method in case studies, which was chosen as the research design of this study (Kovács & Spens 2005). The project started in collaboration with and after a discussion with Tillväxtanalys concerning a perceived problem found in the industry, identified in their previous research. A literature study was then conducted to find relevant

frameworks which could be used to study the identified problem in practice. This corresponds with how an abductive approach is carried out. Also, the work with developing the questionnaire and gathering data was done through an iterative process by studying literature, constructing the first draft, testing it in practice and adapting it after the first rounds of interviews.

2.1.3 Qualitative and Quantitative Research Approaches

The research strategy in this study took a qualitative approach. The qualitative approach is used when a specific area or problem needs to be explored, often when a group or a population is studied, which corresponds well with how this master´s thesis was conducted. It is normally used when there is a need for a complex and detailed understanding of the studied area, which can only be reached when talking directly to people (Creswell 2013).

In contrast to the qualitative approach, a study can also take a quantitative research approach. Höst et al. (2006) describes quantitative data as something that can be counted or classified, like numbers, shares, weights and colors. Qualitative data is instead built up by words and descriptions which are rich in detail. Quantitative data can be processed with statistical analysis while qualitative data demands different analytical methods which builds on sorting and categorization (Höst et al. 2006). This study focused on analyzing data and information built up by words.

2.2 Case Study

2.2.1 Characteristics of a Case Study

Case studies give the opportunity to thoroughly study a specific area or problem during a limited period of time. They can be used when conducting pilot studies which in turn can acknowledge important areas for further research, but a case study is most commonly performed as an own project. Often, the researchers identify a phenomenon, for example a new way of working or a change in an organization, and systematically gather and analyze information about the chosen phenomenon. In case studies, observations and interviews are the most common methods to collect data (Bell 2006). Case studies provide the researchers with experiences and closeness to the studied object or objects which is positive when trying to understand and describe a specific topic (Ejvegård 1996). A case study can be built up by one or multiple cases and different levels of analysis (Eisenhardt 1989).

For this project the case study was deemed to be the most appropriate research design. All of the above mentioned characteristics about a case study applied in this case. The master´s thesis studied the specific topic regarding the existence of digital strategies and their alignment with overall business strategies during a limited period of time. The study was therefore seen as a project in itself, but could also provide useful information for further studies. The aim was to study how companies in a specific industry adapt to and embrace digitalization and digital strategies, which is a specific phenomenon regarding new ways of working and organizational change.

The difficulty with case studies is that one or a few cases seldom fully represent reality. This fact needs to be considered when analyzing information from the case or cases and when

drawing conclusions. Researchers should be careful regarding generalizing the results of a case study (Bell 2006; Ejvegård 1996; Yin 2009). This especially applies for single case studies (Yin 2009). Due to a usual limited number of cases, it is especially vital in case studies to compare the findings with existing literature (Eisenhardt 1989).

This study was conducted as a multiple case study, where several different companies in the manufacturing industry were investigated. Using several cases often lead to more compelling evidence and therefore this type of study is considered more robust than single case studies (Yin 2009). The reason to perform a multiple case study in this case was to be able to investigate and analyze different companies with different organizations and strategies. To satisfy the purpose of the study, to describe and analyze the existence of digital strategies and their alignment with overall business strategies for manufacturing SMEs, several companies with those specific characteristics needed to be investigated.

2.2.2 Criteria for Selecting the Case Companies

The chosen case companies in this study were SMEs within the manufacturing industry in Skåne, Sweden.

The manufacturing industry consists of companies producing physical goods that are capital intensive and long-lasting. The industry is characterized by business to business relationships where products are sold directly to other companies and where most companies act as suppliers to others. The focus of manufacturing firms has historically been on technology and product innovation at the same time as trying to reduce costs. This industry has lately been increasingly affected by the development of digital technologies and digitalization (Paulus-Rohmer et al. 2016). Sweden is a strong industrial nation where the manufacturing industry and services connected to the industry is important for the society and represents around one million jobs and the largest part of the Swedish exports (Näringsdepartementet 2015).

As has been described previously, digitalization provides new possibilities and business models which is influencing the manufacturing industry. To follow this rapid technology and business model development is especially hard for SMEs (Näringsdepartementet 2015). Tillväxtanalys (2016) states that smaller companies often lag behind larger corporations in their digital maturity. The European Union (EU), defines SMEs as companies with less than 250 employees and a total turnover less than 50 million Euro or a balance sheet in total less than 43 million Euro. Within the EU, such companies make up 98.8 percent of the total amount of enterprises, employ 67 percent of the workforce and account for 57.5 percent of the gross value added (GVA). The corresponding numbers for Sweden is 98.8 percent, 65.4 percent and 58.5 percent respectively (Eurostat 2016).

Due to the importance of the manufacturing industry for the Swedish society, both in number of jobs and for the export, and since the industry is increasingly affected by digitalization, the manufacturing industry was chosen as the focus of this study. Since SMEs lag behind larger companies in their digital development and also because of their great importance for the economy, these were the type of companies chosen for this case study. Sweden, and especially the region of Skåne, was chosen for practical reasons due to the close proximity of the studied companies.

2.3 Data Collection

When collecting data, qualitative or quantitative methods can be used. Since the research strategy in this study was chosen to be qualitative, qualitative data collection was also used for the primary data in this case. Interviews with the chosen case companies, together with a literature review, was used to collect information during the study. Conducting interviews is a common method for collecting qualitative and personalized data (Hancock & Algozzine 2011). Bell (2006) also describes interviews as one of the most common ways to gather data in case studies, thus further supporting the choice of qualitative interviews as a primary data collection method in this case.

2.3.1 Qualitative Interviews

2.3.1.1 Different Types of Interviews

An interview is the more or less systematic questioning of a person or interviewee on a specific topic (Höst et al. 2006). Höst et al. (2006) states that there are three overall types of interviews; the unstructured interview, the semi-structured interview and the structured interview. The main difference between the three is that the structured interview provides fixed alternative answers for the questions, whilst the unstructured interview does not. The semi-structured interview combines elements from the two. Thus the structured interview can be considered as an oral survey, and is better suited for quantitative data. The unstructured interview is more qualitative in nature and the questions does not need to be asked in a specific order or formulated in the exact same wording during each interview (Höst et al. 2006). According to Hancock and Algozzine (2011), the semi-structured interview is particularly well suited for case study research as the interviewer asks predetermined but flexibly worded questions giving the interviewees the possibility to express themselves openly and freely from their own perspective, not solely from the perspective of the researcher. Höst et al. (2006) further states that an interview can be divided into four different phases, which in order are: context and purpose, introductory questions, main questions and a conclusion.

An advantage with interviews is their flexibility, as follow-up questions to dig deeper into the specific question can be asked by the interviewer. In comparison to surveys, interviews also enables the interviewer to get information not only about the answer given by the interviewee, but also about how the answer is given. The drawback of interviews is that they are time consuming, and also give a subjective perspective on the research question at hand (Bell 2006).

The interviews in this study were of a semi-structured nature with a written and structured questionnaire with open questions covering the relevant and studied areas. Even though the questionnaire was pre-determined, there was room for follow-up questions, discussions and flexibility in the order of the questions depending on how the interviews turned out.

2.3.1.2 Constructing the Questionnaire

When constructing a questionnaire, the interviewer should only ask open-ended questions while avoiding yes or no questions, leading questions and multiple-part questions (Hancock

& Algozzine 2011). Bell (2006) also puts emphasis on how the questions are constructed and the importance of using neutral, exact and objective language in order to not guide the interviewee in any direction.

When determining the structure of the interviews and the questionnaire the interviewer must adhere to legal and ethical requirements. The interviewees must be informed of how the information will be publicized, and given the option to remain anonymous. Further, the interviewees must be informed of the purpose of the study and be aware of their rights (Hancock & Algozzine 2011). All these aspects were taken into consideration when constructing the questionnaire and structuring the interviews in the study.

The questionnaire was created to follow the purpose of the study, the structure of the studied areas in chapter 3, and to follow the chosen framework. This in order to gather relevant data to be able to perform an analysis. The questionnaire was slightly adapted and developed after the first two interviews into the final version used in the rest of the interviews. The questionnaire was divided into four parts. The first part consisted of an introduction of the authors, the project and its purpose. It also included information about how the interview was planned to be conducted and a question if it was acceptable to record the interview. The purpose of this was to be clear towards the interviewee about the study and the interview to follow the ethical requirements. The second part of the questionnaire consisted of questions regarding the company's strategy and organization, including how the company was affected by digitalization and if and how the company was working with digital strategies. The purpose of this part was to understand how the companies were built up, how their strategic work was organized and if they worked with digital strategies in order to answer the first part of the purpose of the study. The third part of the questionnaire was made up of questions related to the areas within the chosen theoretical framework. The purpose of this was to gather information to be able to perform an analysis and to answer the second part of the purpose regarding alignment between strategies. The fourth and last part of the questionnaire consisted of concluding questions, such as if the interviewee wanted to add anything or had specific questions to the authors, and also a question about desired anonymity of the interviewee or the firm. The questionnaire can be found in Appendix 1.

2.3.1.3 Selecting the Case Companies

Interviewees for qualitative studies are chosen to cover the variation within the population, separating it from quantitative studies, where the interviewees are chosen to be statistically representative for the whole population. If the interviewees are not randomly chosen, no general conclusions can be drawn about the population as a whole (Höst et al. 2006). Apart from availability, the most important consideration when choosing interviewees is to identify the people in the research context that may have the best information concerning the study's research questions (Hancock & Algozzine 2011). Coleman and Papp (2006) states that the two most qualified key people to question when assessing strategic alignment within a company are the senior business executive, typically the CEO, and the senior technology executive, typically the CIO.

The first step in the process of finding case companies with the specified criteria, which was set to companies within the manufacturing industry, with under 250 employees, under 50 million euro in turnover and located within the Skåne region, was to create a long list of potential companies. The first attempt to create the list was done by searching different

organizations websites, such as Svenskt Näringsliv, Sydsvenska Handelskammaren, Kosmetik- och Hygienföretagen, Industriarbetsgivarna, Skogsindustrierna and Teknikföretagen. This proved to be a difficult way of efficiently finding companies and creating a long list. When realizing this, contact was made with Sydsvenska Handelskammaren to see if they could assist by directly providing a list of their members which fulfilled the specified criteria. This proved to be successful. By providing Sydsvenska Handelskammaren with the criteria they created a list of 320 potential companies. From this list 130 companies were controlled by the authors in public databases to see if the criteria held, i.e if the turnover was under 50 million euro and the number of employees under 250. Out of these 130 companies, 22 companies were deemed relevant to contact for participation in the study. The CEO's of the relevant companies were all contacted by email, followed by a phone call and in some cases a reminding email. Interviews with six of the companies were booked and held. In five cases interviews were held with the CEO only, and in one case two interviews at one company were held, one with the CEO and one with the product manager, at Saturnus. The interviews with the case companies were held from the middle of March until the beginning of April 2017. Most interviews were held face to face, but two interviews, with Gyllsjö Träindustri and Ifö Electric, were held over the phone due to geographical distance. In table 2.1 below is a summary of the case companies and table 2.2 presents a summary of the interviews held.

Table 2.1. Summary of the case companies.

Case Companies				
Company	**Employees (2015)**	**Turnover (2015)**	**Location**	**Product**
AB GLF Genarps Lådfabrik	26	91 MSEK	Genarp	Wooden pallets and boxes
AB Gyllsjö Träindustri	64 (2016)	151 MSEK (2016)	Klippan	Wooden pallets
Ifö Electric AB	32	58 MSEK	Bromölla	Ceramic fuses and fixtures
Saturnus AB	30	86 MSEK	Malmö	Beverages
Alufluor AB	49	244 MSEK	Ramlösa	Aluminium fluoride
Presona AB	36	109 MSEK	Tomelilla	Baling machines

Table 2.2. Summary of the interviews.

Interviews			
Company	**Interviewee**	**Position**	**Date**
GLF Genarps Lådfabrik	Johan Wester	CEO	2017-03-15
Gyllsjö Träindustri	Lennart Svensson	CEO	2017-03-21
Ifö Electric	Anders Öringe	CEO	2017-03-27
Saturnus	Edward Liepe	CEO	2017-03-28
	Louise Ahlander	Product manager	2017-03-28
Alufluor	Göran Karlsson	CEO	2017-03-28
Presona	Stefan Ekström	CEO	2017-04-04

2.3.2 Written Material

In order to complement the interviews and verify certain information and data gathered about the case companies, written material was analyzed as well. This primarily included publicly available information from the companies' websites and information about financial data and other statistics retrieved from public databases. Some written material was also acquired from the companies' internal documentation, with consent, in order to verify and clarify information gathered during the interviews. This information was provided through email or physically by the interviewees.

The data collection also included the conducted literature study. To maintain an organized search process throughout the study a spreadsheet was created, with headlines such as author, headline of the article, which database it was found in, keywords used when searching and a link to the article. When reading the literature, most of the articles, books and reports were summarized by the authors, and in the spreadsheet they were rated according to their relevance for the project. The databases used in the literature search were mainly Google Scholar, LUBsearch and Scopus.

2.4 The Research Process

The research process, which is presented in figure 2.1, was done through an abductive approach. Firstly, the process of the study started in collaboration with Tillväxtanalys by a discussion regarding an identified problem in the industry. From this discussion, the subject of the study and research question was decided upon. To be able to perform an investigation of the identified problem, it was important to get a good understanding of the studied field and a thorough literature study was conducted after an initial orientation of the chosen topic. This included studying articles, books and reports from scholars, scientists, consultancy firms and the Swedish government, together with studying various web pages. Secondly, it was important to find and establish the theoretical framework to be used in the analysis of the study. This was also done by studying existing academic literature to find relevant models and frameworks. When a relevant framework had been chosen and closely studied, the framework was used in order to create a questionnaire which was used when conducting the interviews. Simultaneously, the work of finding and contacting relevant case companies was initiated. Interviews were held with the participating companies, and the questionnaire was adapted and developed after the two first interviews to better suit its purpose. Alongside the interview process, the results of the interviews were documented. Besides the interviews, a limited number of follow up emails were sent to the interviewees to complement the information from the interviews. The last part of the research process was to analyze the results of the interviews and the practical use of the chosen framework, together with concluding the study and suggesting areas for further research.
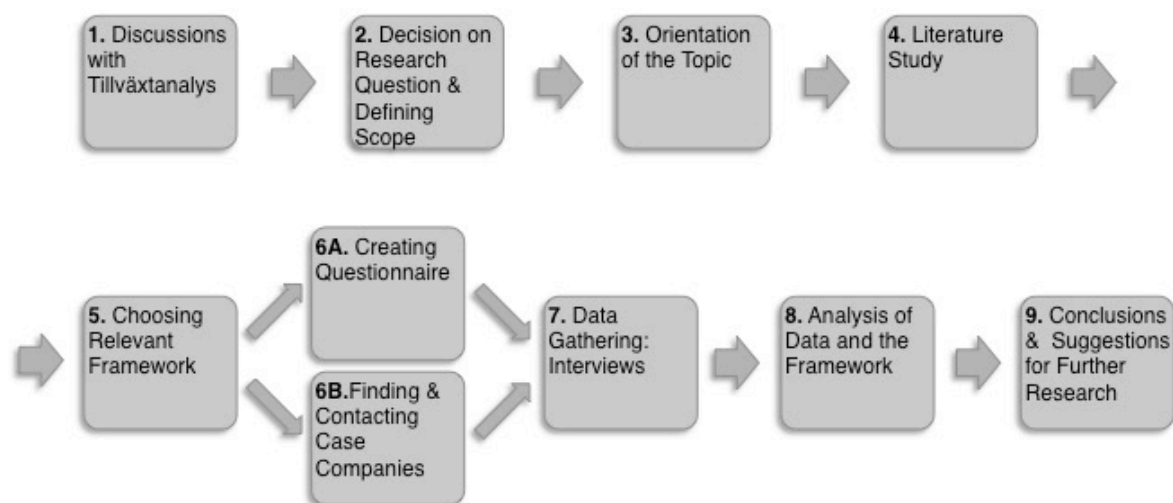
Figure 2.1. The research process.

2.5 Credibility of the Study

2.5.1 Reliability

The reliability of a research project indicates how trustworthy the study is in regards to how the data collection and analysis was performed. A project reaches a high level of reliability through a thorough, accurate and detailed data collection and analysis. It is important to be transparent about how the study was conducted to give the reader a chance to evaluate the

level of reliability (Höst et al. 2006). With a high level of reliability, mistakes and biases in the research project can be minimized (Yin 2009). Reliability is a measurement of if the research would give the same results if performed another time under the same circumstances (Bell 2006).

To ensure high reliability of the study, the methodological choices and the process of information gathering, including which sources and databases were used, has been clearly described. The primary data in this study, collected through the interviews, is mainly based on answers from the participants, which can tend to be subjective. With this type of data it is harder to ensure high reliability. To ensure a correct interpretation, and to complement notes taken during the interviews, the interviews were recorded for the authors to be able to go back and listen to the interviews again. The questionnaire is also provided in an appendix to create transparency to how the interviews were conducted and which questions were used to obtain the results presented.

It is also important to consider the choice of companies in the case study. If other companies, or a larger number of companies, would have been included in the study, the results might have been different if the study was performed again. Further, in most cases in this study, only one interview per company was held. If several interviews with different employees within the companies had been held, the results might also have been of a different nature as data from different sources could then be compared and corroborated.

2.5.2 Validity

Validity is a more complex term. It is a measurement of if the researchers and their questions are investigating what is actually intended to be measured. If a question is not reliable, it also lacks validity. But just because the reliability is high, it does not mean that the validity is high. A question can give the same answer at different measuring times, but still not measure what is intended (Bell 2006).

To ensure validity in the study, the results obtained have been compared with existing literature and previous findings of similar investigations. According to Eisenhardt (1989), a comparison with literature is said to increase validity. Validity was also assured in the study by making sure the interviewees fully understood the questions asked during the interviews, so they answered the right things and what was intended. This was done by describing the concepts of digitalization, digital strategies and strategic alignment to those unfamiliar with the terms.

3 Theory

This chapter aims to provide the theoretical framework of the study, by presenting relevant theoretical concepts. The chapter is divided into four main sections:

The first section defines the term strategy and presents The Three Levels of Strategy. This section aims to provide the reader with a base and general understanding of the concept of strategy.

The second section discusses theory regarding digitalization and the definition and development of digital strategy. For the purpose of this study, digital strategy is core and the section aims to provide understanding and background of the concept.

The third section shortly presents different organizational structures that exist in companies. This aims to give a theoretical background to how companies are organized and which hierarchies and responsibilities that exist and how they influence strategy.

The fourth section describes strategic alignment and the Strategic Alignment Model. This framework discusses the importance of alignment between the IT and the business strategies. The framework is developed into the Strategic Alignment Maturity Model which is a practical tool for measuring the level of alignment between the two different strategies.

3.1 Strategy

3.1.1 Definition of Strategy

Strategy is the long-term direction of an organization. As strategy typically involves managing people, relationships and resources, the subject is sometimes called strategic management in the literature (Johnson et al. 2014). In this study the concept is referred to simply as strategy.

Strategy is a key ingredient for success both for individuals and organizations. A sound strategy cannot guarantee success, but it can improve the odds. Successful strategies tend to embody four elements; (1) clear long-term goals, (2) understanding of the external environment, (3) approval of internal resources and capabilities and (4) effective implementation (Grant et al. 2016). Grant et al. (2016) further writes that the scope of strategy has changed from being concerned with detailed planning based on forecasts, and is instead increasingly about direction, identity, and exploiting the sources of superior profitability.

According to Porter (1996), strategy is about being different and the creation of a unique and valuable position. The core of strategy according to Porter (1996) lies within differentiating the company from its competitors by choosing a different set of activities to deliver a unique mix of value. A company can outperform rivals only if it can establish a difference that it can preserve. Porter (1996) further defines that the essence of strategy is in the activities, i.e. choosing to perform activities differently or to perform different activities than rivals. Otherwise, a strategy is nothing more than a marketing slogan and will not withstand competition (Porter 1996).

Drnevich and Croson (2013) defines strategy as a set of management decisions regarding how to balance the firm's trade-offs between being efficient, i.e. reducing cost, and being effective, i.e. creating and capturing value, to achieve its objectives by choice of industry, firm configuration, resource investments, pricing tactics and scope decisions.

Main components, present in all various definitions of strategy, are the decisions and actions to capture, create or deliver value by creating or taking a unique position in relation to competitors and to sustain that profitable difference over time.

3.1.2 The Three Levels of Strategy

Strategy is present in all levels of an organization, from overall and general strategies to specific and short-term strategies. Generally, strategy is divided into three different levels; corporate strategy, business strategy and functional strategy, see figure 3.1 (Johnson et al. 2014).
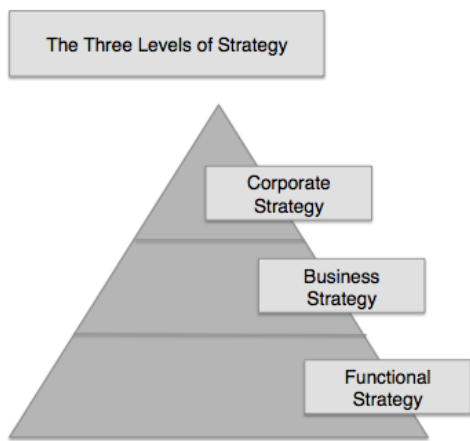
Figure 3.1. The Three Levels of Strategy (Johnson et al. 2014).

The three levels of strategy each correlate with different levels within a traditional organizational structure, as presented in figure 3.2 (Johnson et al. 2014).
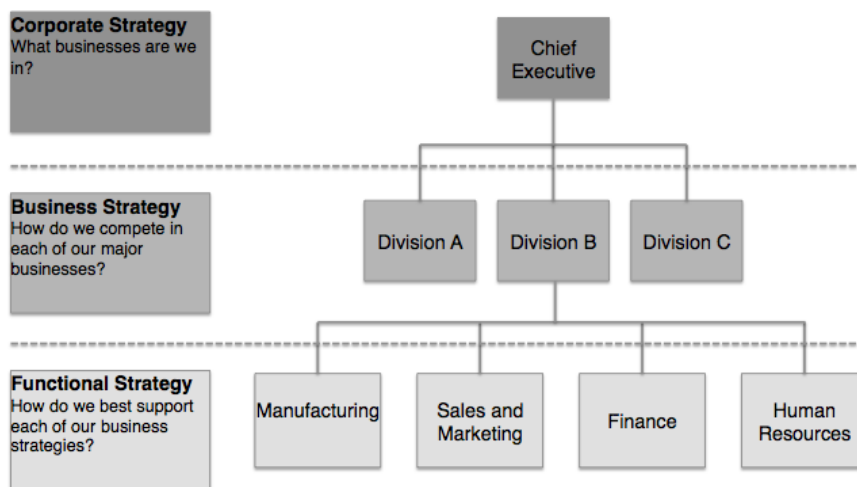
Figure 3.2. The Three Levels of Strategy within a traditional organizational structure (Johnson et al 2014).

3.1.2.1 Corporate Strategy

Corporate strategy focuses on the overall strategy set at the highest corporate group level and concerns the whole corporation as a unit, and aims at outlining the direction and purpose of the organization. As Johnson et al. (2014) states, corporate strategy is concerned with the overall scope of an organization and how value is added to the constituent businesses of the organizational whole. According to Grant et al. (2016) corporate strategy defines the scope of the firm in terms of the industries and markets in which it competes, and is the responsibility of corporate top management. Corporate strategy is in general more important and utilized by larger companies, as they typically participate in several industries and/or markets, whereas smaller firms have simpler, if any, corporate strategies as they usually only compete in one industry and/or market (Beard & Dess 1981).

Corporate strategy decisions can for instance include choices over diversification of products and services, geographical scope, vertical integration, acquisitions, new ventures, and the allocation of resources between the different entities of the organization (Grant et al. 2016; Johnson et al. 2014).

3.1.2.2 Business Strategy

Business strategy focuses on how the firm's businesses competes within their specific markets or industries, and can be described as the strategy level directly below corporate strategy. These individual businesses might be separate entities such as for instance entrepreneurial start-ups within a corporate group, or autonomous business units within a larger corporation, and the business strategy sets the goals for these entities. If the businesses are entities within a larger organization, the business strategy should clearly connect to and fit within the corporate strategy. Business strategies are generally more specific in their scope (Johnson et al. 2014).

The distinction between corporate strategy and business strategy corresponds to the organizational structure of most large companies. As previously mentioned, corporate strategy is the responsibility of corporate top management, whereas business strategy primarily is the responsibility of senior managers of divisions and subsidiaries (Grant et al. 2014).

Business strategy is also referred to as competitive strategy, as the firm must establish a competitive advantage over its rivals within the market or industry the strategy focuses on in order to prosper (Grant et al. 2016). In this study, the term business strategy is used to describe this particular level of strategy within a firm.

3.1.2.3 Functional Strategy

Functional strategies are the most specific of The Three Levels of Strategy and lies beneath the corporate and business strategies in the company's structural hierarchy. They concern how the components of an organization effectively deliver the corporate and business strategies in terms of resources, processes and people. Thus, these strategies are more specific, detailed and have a more narrow scope. The decision level of functional strategies is typically within company functions with specific responsibilities, as for instance divisions or departments

responsible for marketing and sales, supply chain management or human resources (Johnson et al. 2014). As Johnson et al. (2014) writes, the functional strategies are vital for successfully implementing strategies, implicating the importance of integration and alignment between the three levels. In some sources, functional strategies are referred to as operational strategies due to their operational nature. In this study, they are consequently referred to as functional strategies.

3.2 Digital Strategy

3.2.1 Digitization and Digitalization

The term digitalization is believed to be presented for the first time in modern literature by Wachal in the year of 1971. He mentions the term in an article in which he describes the impacts that computers will have on humans and society (Wachal 1971).

It is important to define the term digitalization as it is easily confused, and often used interchangeably, with the term digitization in literature. According to Gartner the definition of digitization is "the process of changing from analog to digital form" (Gartner 2017b). Brynjolfsson and McAfee (2014) defines digitization as "encod[ing information] as a stream of bits". They continue their description of the term as "digitization, in other words, is the work of turning all kinds of information and media—text, sounds, photos, video, data from instruments and sensors, and so on—into the ones and zeroes that are the native language of computers and their kin" (Brynjolfsson & McAfee 2014).

Digitalization is instead defined as "the use of digital technologies to change a business model and provide new revenue and value-producing opportunities; it is the process of moving to a digital business" (Gartner 2017a). Yoo (2010) means that "the digitalization of products and services will likely affect the organizational structure and capability". Yoo et al. (2010) also describes digitalization as "by digitalization, we mean the transformation of socio-technical structures [...]. Digitalization goes beyond a mere technical process of encoding diverse types of analog information in digital format (i.e., "digitization")".

In theory, digitization is described as the process of simply turning analogue information into digital form, converting the analogue information into numbers that can be stored digitally. Digitalization on the other hand, is a more complicated process. It is a process that goes beyond digitization, and is described as the process of using digital technologies to change organizational structures and entire business models to generate increased value. Since the scope of this study is to investigate how entire firms and their strategies are impacted by the new digital technologies and thereby the transformation and adaption of entire business models and organizational structures, the term digitalization is the most applicable in this case. When mentioning digitalization in this study, it is Gartner's (2017a) and Yoo's (2010) respective definitions which are referred to.

3.2.2 Definition of Digital Strategy

There are a few definitions of what a digital strategy is in current literature. The definition of a digital business strategy according to Bharadwaj et al. (2013) is "simply that of organizational strategy formulated and executed by leveraging digital resources to create

differential value". This definition proposes that the digital strategy should be completely integrated with the business strategy. Another definition of digital strategy, proposed by Ward and Peppard (2016), is "thinking strategically and planning for the effective long-term management and optimal impact of information in all its forms: information systems (IS) and information technology (IT)". The definition by Ward and Peppard is more specific regarding IS and IT, and seem to look at the digital strategy as an own separate strategy.

A third definition of a digital business strategy, and the one most applicable to this study, is presented by Mithas et al. (2013). "We define digital business strategy as the extent to which a firm engages in any category of IT activity. [...], we take the view that firms should consider IT as essential to the framing of overall business strategy itself, that is, a fusion of IT and business strategy. Our view of digital business strategy implies a dynamic synchronization between business and IT to gain competitive advantage".

3.2.3 Development of Digital Strategy

During the last few decades, the IT strategy of firms has been seen as a functional strategy, where the business strategy has directed the IT strategy. Alignment between the two strategies has always been important, but the IT strategy has been subordinate to the business strategy (Bharadwaj et al. 2013). An explanation of why the IT strategy has been considered a functional strategy is because investments in IT has been essential to the operations at the functional level of firms. But investments in IT are also vital for the business strategy. This because they are important for enhancing the overall performance of firms. Investments in IT can help both in improving existing capabilities but also in establishing completely new digital capabilities which in turn can increase the total value creation of the company (Drnevich & Croson 2013).

Digital technologies are altering and transforming current business strategies, capabilities and processes (Bharadwaj et al. 2013). As a result of the new technologies, companies today have an increased set of strategic opportunities and value-creation alternatives (Drnevich & Croson 2013). Due to the importance of IT for value creation, performance and competitive advantage of firms, the IT strategy and the business strategy are suggested by theory to be merged into one digital business strategy (Bharadwaj et al. 2013; Drnevich & Croson 2013; Mithas et al. 2013).

Digital technologies affect large, if not all, internal parts of a company. But besides influencing the value creation and the performance, digital technologies are said to go beyond borders of firms, affecting whole supply chains and sales processes. Since digital strategies span over entire firms and also cross the firm borders, they ultimately cross, and should be aligned with, other business strategies (Matt et al. 2015).

Hess et al. (2016) states that many companies believe they have a digital strategy today. But even though firms might have a business or IT strategy that includes digital technology, the authors argue that an IT strategy is not the same as a digital strategy. They mean that the difference between an IT strategy and a digital strategy is that IT strategies tend to focus solely on technology, like application systems and infrastructure (Hess et al. 2016). IT strategies usually define the operational activities and the management of the IT infrastructure within a firm, and often has low influence on innovation and business development. Digital strategies on the other hand, are the ones crossing the company borders,

focusing on improving processes and organizational aspects and includes interfaces with customers and suppliers (Matt et al. 2015). In this study it is the definition provided by Matt et al. (2015) that is referred to when the term digital strategy is used.

3.3 Organizational Structures

Johnson et al. (2012) describes the three basic structural types, the functional structure, the multidivisional structure and the matrix structure.

3.3.1 The Functional Structure

The functional structure divides responsibilities within the organization according to the primary specialized functions within the organization, such as production, research and sales (Johnson et al. 2012). The functional structure is visualized in an organizational chart in figure 3.3. According to Johnson et al. (2012), the functional structure is particularly relevant for small organizations, larger organizations with a narrow scope and product range or start-ups.
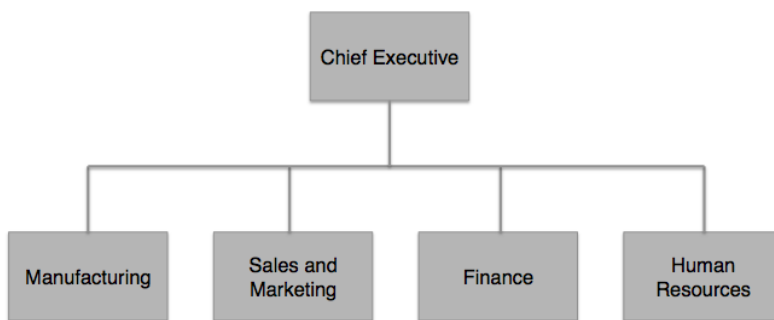
Figure 3.3. The functional structure (Johnson et al. 2012).

3.3.2 The Multidivisional Structure

The multidivisional structure as it is described by Johnson et al. (2012), is "built up of separate divisions on the basis of products, services or geographical areas". It is visualized in an organizational chart in figure 3.4. The divisions could for instance be divided based on markets such as countries, brands or products. The multidivisional structure is often a response to the shortcomings of the functional structure as the organization grows. The separate divisions within the multidivisional structure can often be organized according to the functional structure, and thus organizations utilizing the multidivisional structure is often larger. Further, divisional managers have greater personal ownership for their own divisional strategies (Johnson et al. 2012).
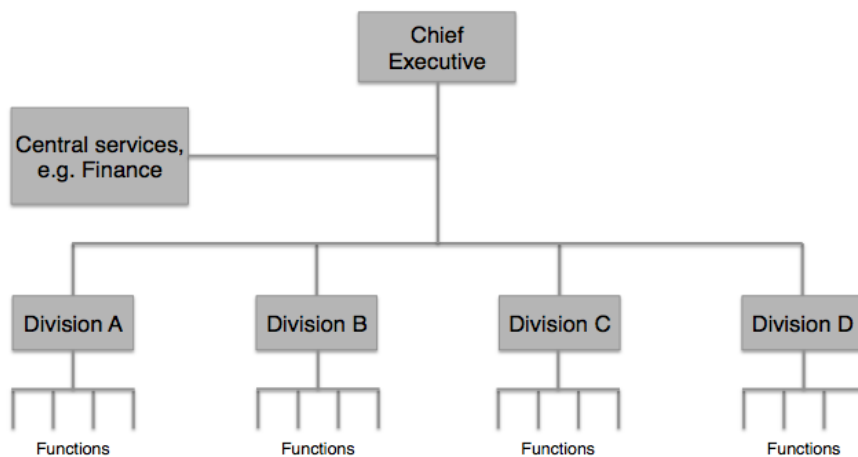
Figure 3.4. The multidivisional structure (Johnson et al. 2012).

3.3.3. The Matrix Structure

The matrix structure combines different structural dimensions simultaneously, as for instance geographical regions and product lines, or product lines and functional specialisms, as viewed in figure 3.5. Thus, middle managers often report to two or three senior managers (Johnson et al. 2012).
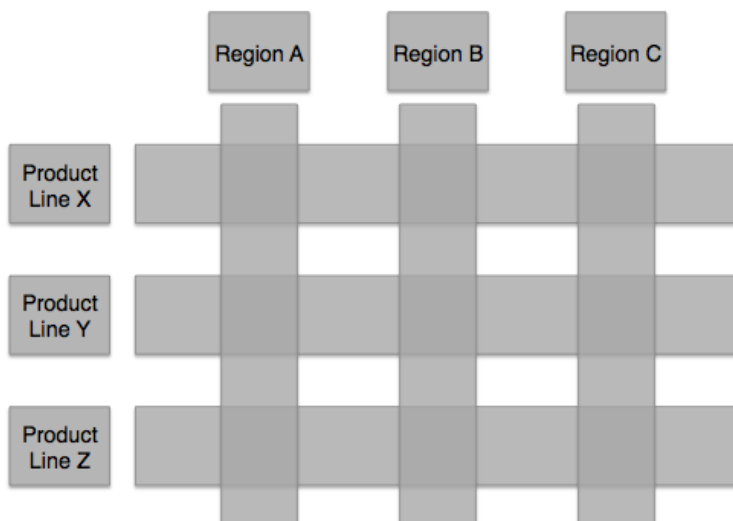
Figure 3.5. Example of a matrix structure (Johnson et al. 2012).

3.4 Strategic Alignment

Firms cannot be competitive or successful if their business and IT/IS strategies are not aligned. Strategic alignment is a key concern for business executives and is ranked among the most important challenges faced by CIOs and IT executives (Avison et al. 2004, Gerow et al. 2014, Coltman et al. 2015). The term alignment is defined as "the degree to which the needs,

demands, goals, objectives, and/or structures of one component are consistent with the needs, demands, goals, objectives, and/or structures of another component" (Gerow et al. 2014).

The term strategic alignment is also referred to in literature by Porter as *fit*, by Weill and Broadbent as *integration*, by Ciborra as *bridge*, by Luftman as *harmony*, by Smaczny as *fusion*, and by Henderson and Venkatraman as *linkage* (Avison et al. 2004). Regardless of term, the definition refers to the integration of strategies relating to the business and its IT and IS (Avison et al. 2004; Luftman 2000). In literature, the terms IT-business alignment and strategic alignment are often used interchangeably but refer to the same managerial phenomena; the integration between IT and business strategies. In this study, the term strategic alignment is used.

There is a debate in the literature about what alignment actually is, why it is needed and how firms can become more aligned, although Avison et al. (2004) comes to the conclusion that alignment is desirable. Avison et al. (2004) further writes that alignment is assisting firms in three ways; by maximizing return on IT investment, by helping to achieve and strengthen competitive advantage through information systems, and by providing direction and flexibility to react to new opportunities. Gerow et al. (2014, 2015) also finds that strategic alignment leads to higher firm performance.

3.4.1 The Strategic Alignment Model

The Strategic Alignment Model (SAM) was first introduced by Henderson and Venkatraman in 1989 (Henderson & Venkatraman 1989). The Strategic Alignment Model is a tool that is used to assess a company's alignment and with the ultimate goal to move the company into alignment. It is valuable for corporate executives aiming to analyze the level of alignment between their business and technology strategies (Coleman & Papp 2006). The key concept of the Strategic Alignment Model is that to become a more successful company, the IT strategy should be fully aligned with the business strategy (Henderson & Venkatraman 1993).

The Strategic Alignment Model is composed of four quadrants, each consisting of three components as shown in figure 3.6 (Henderson & Venkatraman 1993). The four quadrants are called 'fundamental domains of strategic choice' by Henderson and Venkatraman (1993), and are specified as (1) business strategy, (2) IT strategy, (3) business infrastructure and processes and (4) IT infrastructure and processes. The twelve components determine the extent of alignment for the company of the organization being assessed (Coleman & Papp 2006).

The Strategic Alignment Model is divided into internal and external domains horizontally. The external domain is the business arena in which the firm competes and is concerned with decisions regarding for instance products, markets or competitors. The internal domain on the other hand is internal factors such as functional, divisional or matrix organization, design of business processes as well as how human resources is acquired and developed. Further, the Strategic Alignment Model is also subdivided into two functional domains vertically, IT and business (Henderson & Venkatraman 1993).
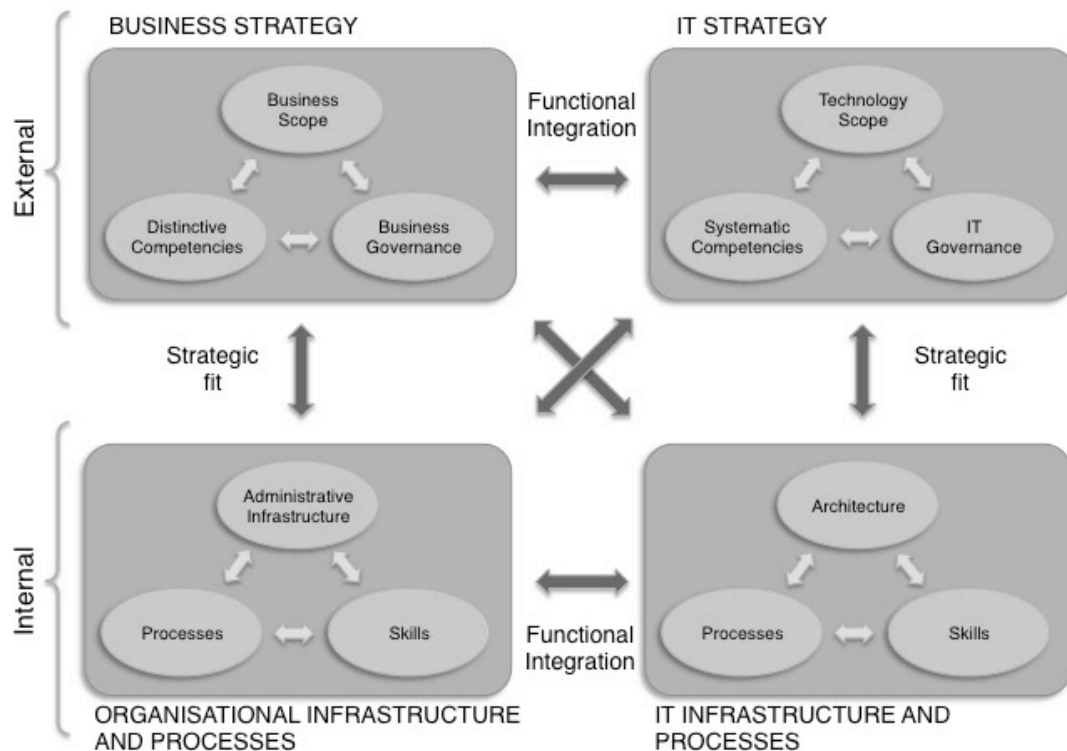
Figure 3.6. The Strategic Alignment Model (Henderson & Venkatraman 1993).

The twelve components of the four quadrants are described as follows by Coleman and Papp (2006):

Business Strategy:
- The *Business Scope* component refers to everything that affects the business environment, as for instance products, markets, services, customers, competitors, geography, suppliers and potential competitors.
- The *Distinctive Competencies* component refers to things that make the business successful in the marketplace including the core competencies that allows the company to compete with other businesses. Apart from core competencies, this component includes brand, research, manufacturing and product development, cost and pricing strategy as well as sales and distribution channels used.
- The *Business Governance* component refers to the relationship between stockholders of the company and senior management, principally the board of directors. This also includes government regulations and relations with strategic business partners.

Organizational Infrastructure and Processes:
- *Administrative Infrastructure* refers to how the company's business is run, including questions concerning centralization or decentralization, and matrix, vertical and functional organizational types.
- *Processes* includes how business processes and the related activities is operated, as for instance value added activities and process improvement.

- *Skills* refers to how the company hire, motivate, train, educate and culture their employees.

IT Strategy:
- *Technology Scope* is defined as all essential applications and technologies that the business uses.
- *Systematic Competencies* are all capabilities that set the IT services apart from others, involving the level of access the business has to information that is important to the business's strategies.
- *IT Governance* describes the makeup of the authority behind the IT and how the resources, risk and responsibility, are distributed between the business partners, IT management, and the service providers. The IT Governance component also includes the selection and prioritization of IT projects in the business.

IT Infrastructure and Processes:
- *Architecture* is the technical priorities, policies and choices that drive the integration of applications, software, hardware, networks and data management into a single business platform.
- *Processes* is similar as the business process component defined, but for an IT perspective.
- *Skills* refers to human resource activities associated to IT.

Central to the Strategic Alignment Model are the linkages and interactions between the quadrants which are necessary as the quadrants and components needs to work as a whole unit (Coleman & Papp 2006).

The first linkage is called *strategic fit*, which is visualized as the vertical linkage in the model, between the quadrants of business strategy and business infrastructure, and IT strategy and IT infrastructure respectively (Coleman & Papp 2006). Strategic fit is defined by Henderson and Venkatraman (1993) as "the interrelationships between internal and external factors".

The second linkage is *functional integration*, which is visualized as the horizontal linkage in the model. It describes the ability of the business to position itself on the market in order to leverage the use of IT (Coleman & Papp 2006). Functional integration is defined by Henderson and Venkatraman (1993) as "the integration between business and functional domains, and particularly IT". Functional integration is also defined as "the link between IT infrastructure and process and organizational internal infrastructure and processes" (Avison et al. 2004).

Lastly the model also presents a linkage and alignment potential that transcends the domains, where strategies can be aligned with infrastructure and processes. This linkage is called *cross-domain integration*, and is visualized in figure 3.6 as the central arrows. It is defined as "the degree of integration among business strategy, IT strategy, business infrastructure, and IT infrastructure" (Gerow et al. 2014).

3.4.2 The Strategic Alignment Model in Practice

3.4.2.1 The Strategic Alignment Maturity Model

Avison et al. (2004) validated the Strategic Alignment Model and found that it had conceptual and practical values, although it could be adapted to a more practical level. Gerow et al. (2015) also states that the Strategic Alignment Model is a conceptual framework that has weak practical application. Thus, Avison et al. (2004) proposed a more practical framework developed from the Strategic Alignment Model that "allows management, and particularly technology management, to determine current alignment levels and to monitor and change future alignment as required". To determine how well aligned companies' business and IT strategies are, Luftman developed a framework called the Strategic Alignment Maturity Model (SAMM) (Gutierrez & Serrano 2007).

3.4.2.2 Enablers and Inhibitors of Strategic Alignment

In his studies with strategic alignment, Luftman found a number of enablers and inhibitors that either support or hinder strategic alignment. The six most important enablers and inhibitors can be seen in table 3.1 (Luftman 2000).

Table 3.1. Enablers and inhibitors of strategic alignment (Luftman 2000).

	Enablers	Inhibitors
1	Senior executive support for IT	IT/business lack close relationships
2	IT involved in strategy development	IT does not prioritize well
3	IT understands the business	IT fails to meet commitments
4	Business – IT partnership	IT does not understand business
5	Well-prioritized IT projects	Senior executives do not support IT
6	IT demonstrates leadership	IT management lacks leadership

3.4.2.3 The Six Criteria of Strategic Alignment Maturity

From the six enablers and inhibitors mentioned in section 3.4.2.2, together with Henderson and Venkatraman's twelve components of the Strategic Alignment Model presented in section 3.4.1, Luftman established a framework of six criteria to measure the maturity of strategic alignment, see figure 3.7 (Silvius 2007). The six criteria that Luftman developed are (1) Communications Maturity, (2) Competency/Value Measurements Maturity, (3) Governance Maturity, (4) Partnership Maturity, (5) Scope & Architecture Maturity and (6) Skills Maturity (Luftman 2000).

Figure 3.7. The six strategic alignment maturity criteria and their practices (Luftman 2000).

Communications

To understand each other and exchange ideas is critical to ensure alignment. In many cases there is too little business understanding in the IT function or little appreciation of IT at the business level. Making sure there is a constant exchange of knowledge is vital for alignment success. Companies often use a facilitator whose role is to increase knowledge sharing and interaction between and within organizations, but this approach instead often hinders communication since the system of communicating becomes too rigid (Luftman 2000). Questions to consider when assessing the communication criteria are: Are the business and technical personnel understanding each other? How often and easily do they connect? Does the company connect and communicate in effective manners with partners and consultants? Is the organization spreading learning and knowledge internally? (Silvius 2007).

Competency/Value Measurements

A problem for many companies is that the IT department cannot show the value provided to the business in a structured way so that the business understands it. The metrics of value are often different between business and IT. A dashboard that shows the value of the IT organization and its contribution to the business is required. Companies usually spend a lot of resources on measuring performance, but a lot less on taking action based on the actual results. It is important to establish measures before projects, for example return on investment (ROI), but equally important to follow up the results after the project is done (Luftman 2000). Important questions for this criteria are: How well does the organization measure its projects

in terms of performance and value? Is the company evaluating the results after finished projects? Is the company improving its internal processes to perform better with following projects? (Silvius 2007).

Governance
It is important that responsibilities and authorities for decision-making are clearly defined. That the right people from the business and IT are discussing and reviewing formally when prioritizing and allocating resources for IT is vital for alignment (Luftman 2000). Aspects to consider for the criteria of governance are: Are the company's IT projects a result of the business strategy? Are they supporting the business strategy? (Silvius 2007).

Partnership
The relations between the IT department and the business organization is ranked high in importance for alignment. It is vital to provide the IT organization with equal responsibility to define business strategies. How the two different organizations (IT and business) perceives the importance of the other, the level of trust between the involved parties and the sharing of risks and rewards are all important aspects when assessing alignment (Luftman 2000). Therefore, for the partnership criteria, it is natural to ask questions like: How well have the IT and business organizations developed partnerships which are based on trust and sharing of risks and rewards? (Silvius 2007).

Scope and Architecture
This criteria assesses IT. It refers to how well IT goes beyond the back and front office of the organization, how flexible and transparent the infrastructure is, how IT evaluates and applies new technology, if IT provides customized solutions and how well it enables or drive business processes (Luftman 2000). Key questions are: To which degree has technology developed to be more than only business support? How has it improved the growth and profit of the business and helped the organization to compete?

Skills
The Skills criteria is made up by all questions regarding human resources. It includes factors such as training, salary, feedback and career opportunities but also the cultural and social climate. Some important conditions for maturity in this criteria are if the company is open and ready for change, if the personnel feel responsible for the innovation processes in the company and if the organization and its employees are learning fast from experience (Luftman 2000). Questions to consider when assessing maturity for this criteria are: Does the employees have the competences to be effective? Does the technical staff understand and speak the language of the business? And how well does the business personnel understand technology? (Silvius 2007).

3.4.2.4 The Five Levels of Strategic Alignment Maturity

Under each of the criteria are a number of practices which can be seen in figure 3.7, which are assessed with a rating of five levels. After the assessment of each practice, the practice gets an average score, and in the end an average score for each of the six criteria is calculated. The rating system helps in calculating the total alignment level in companies. The levels of strategic alignment maturity can be seen in figure 3.8, and are (Luftman 2000):

Level 1: Initial/Ad-Hoc process
Level 2: Committed process
Level 3: Established focused process
Level 4: Improved/managed process
Level 5: Optimized process
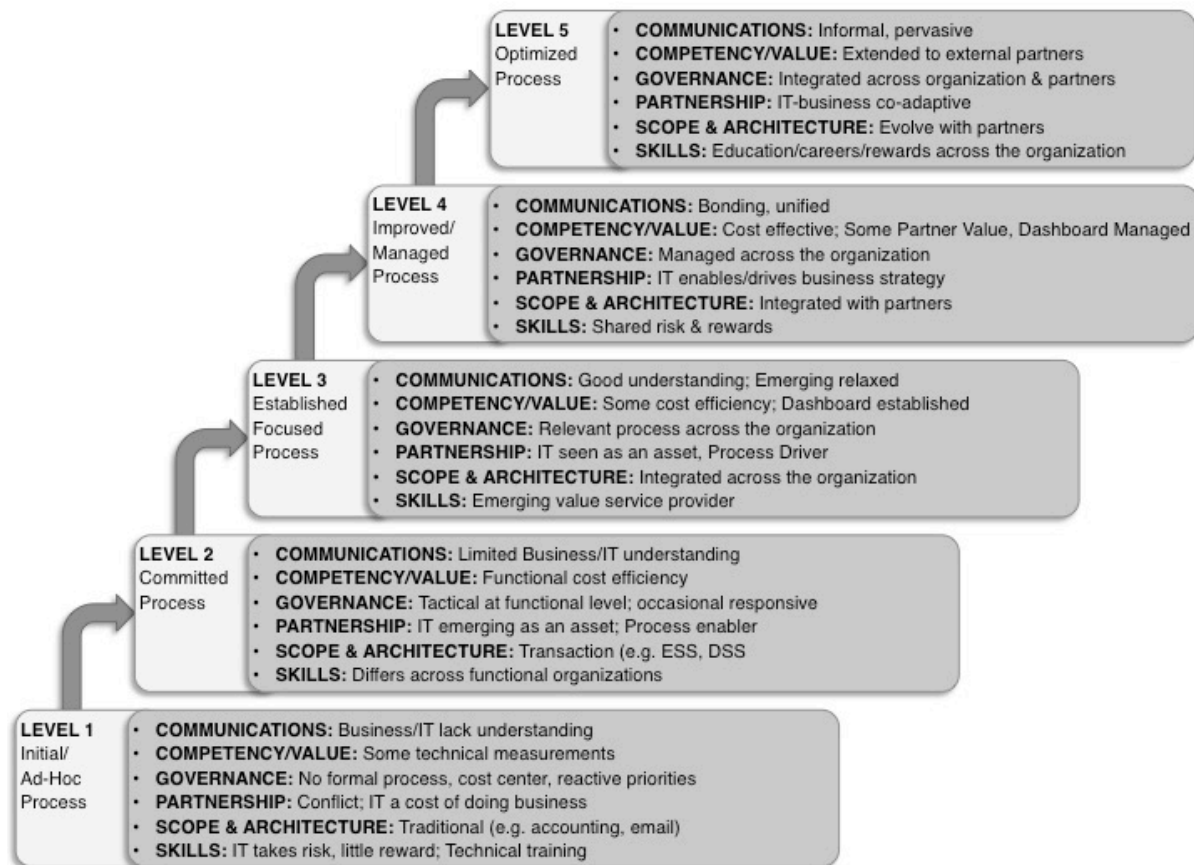
Figure 3.8. The five levels of the Strategic Alignment Maturity Model (Luftman 2000).

At level 1 there are no established processes and the needed communication to attain alignment is lacking. At level 5 companies, IT and other functions such as marketing and finance tailor their strategies together. Companies and organizations should seek to reach the highest maturity level. The calculated score of strategic alignment can be used as a benchmark to compare the performance of the company with others. Among companies using this tool to assess their companies, the average maturity level has been on level 2, with some scoring level 3 for a few alignment practices (Luftman 2003).

3.4.2.5 Assessing Strategic Alignment in SMEs

Gutierrez and Serrano (2007) also finds Henderson and Venkatraman's Strategic Alignment Model theoretically useful, but comments that the original research provides few guidelines on how to achieve the strategic perspectives proposed in practice. Gutierrez and Serrano (2007) state that the most existing instruments to measure alignment are adapted to larger organizations, and that little evidence exists to validate their applicability for smaller companies. Thus, they investigated the alignment phenomena to better understand the alignment in SMEs by adapting Luftman's Strategic Alignment Maturity Model, which as stated above is based on Henderson and Venkatraman's Strategic Alignment Model from 1989. By making a questionnaire with 27 questions considering the six criteria that impact alignment maturity proposed by Luftman in his model, Gutierrez and Serrano were able to produce a practically useful instrument for assessing strategic alignment in SMEs (Gutierrez & Serrano 2007).

3.5 Summary of the Theoretical Framework

The four main sections in this chapter are all important building blocks to be able to satisfy the purpose of this study. Since the aim is to analyze the existence of digital strategies and their alignment to business strategies, a general and basic understanding of the concept of strategy is needed to provide a solid theoretical foundation. Theory regarding strategy was presented in section 3.1 in this chapter. To build an understanding of what impact digitalization has had on strategies and what a digital strategy is, section 3.2 provided definitions of digital strategy and how it has developed. The development regards both how the digital strategy has evolved from the IT strategy and the differences between the two, and how the digital strategy has shifted within the organization, from being seen as a functional strategy to be merged with the business strategy. Section 3.3 provided an overview of different organizational structures to establish an understanding of how different companies organize their functions and responsibilities. This, together with The Three Levels of Strategy, is important when understanding where in the organization the digital strategy is formulated and who is in charge of it. The first three sections of this chapter together builds the base for strategic alignment, being the fourth section in the chapter, see figure 3.9. These first three parts are all crucial in satisfying the first part of the purpose "...to describe and analyze the existence of digital strategies…".
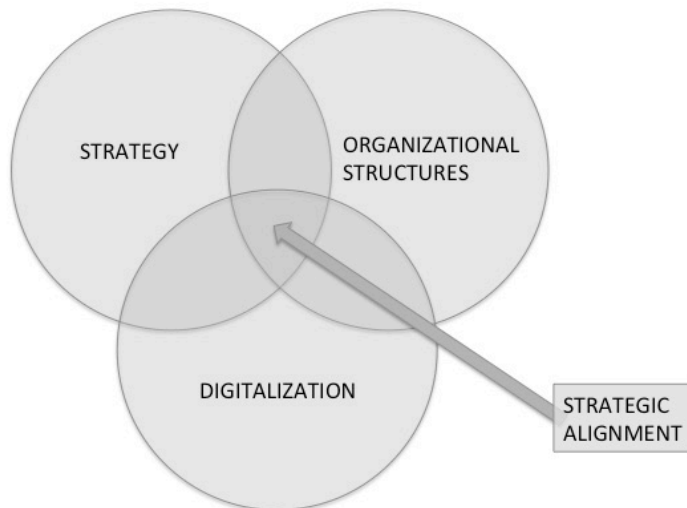
Figure 3.9. Visualization of the theoretical concepts.

To be able to answer the second part of the purpose "... and their (digital strategies) alignment with the overall business strategies…" it is important to gain an understanding of the concepts of alignment and strategic alignment. Definitions and theory regarding these concepts were presented in section 3.4, together with the Strategic Alignment Model and the Strategic Alignment Maturity Model. The frameworks have during the last few decades evolved into a practical tool that evaluates strategic alignment maturity, which will be used in this study to gain a thorough understanding of how companies work with digital strategies and how well aligned the companies' digital strategies are with their business strategies.

4 Empirics

In this chapter the gathered empirical information is presented. The chapter is divided into sections according to the six case companies. For each company, a short introduction and background to the company is given, the organization and overall strategic work is presented and how they are affected by digitalization and if they are working with digital strategies is discussed.

4.1 Case 1 - AB GLF Genarps Lådfabrik

4.1.1 About the Company

AB GLF Genarps Lådfabrik (GLF) is a family owned company which manufactures and repairs different kinds of wooden products, especially wooden boxes, pallets and pallet rims. The most important product is re-used EUR-pallets. The company was founded in Genarp in 1938 and is now run by the third generation (Johan Wester, CEO at GLF, interview 15th of March 2017). GLF employs 26 people and has a yearly turnover of around 91 MSEK (AB GLF Genarps Lådfabrik 2016). A big part of the company's products are manufactured at the location in Genarp and are then sold to different parts of Sweden and other countries, for example Denmark, Holland, Poland and Germany. To be able to provide their customers with products at competitive prices, not affected by expensive transportation, they have expanded their business to other locations. Now GLF is located at six different geographical locations, including two manufacturing plants in Poland run by affiliates (GLF n.d.). One of the Polish plants has around 28 employees and a turnover of around 20 MSEK, while the other has 20 employees and around 7 MSEK in turnover (Johan Wester, CEO at GLF, interview 15th of March 2017).

GLF has historically mainly sold their products directly to end customers, ranging from large manufacturing firms to smaller and local producers of vegetables, but an increasing part of their products are now sold through retailers and distributors. Only around one percent of their products are sold directly to consumers (Johan Wester, CEO at GLF, interview 15th of March 2017).

4.1.2 Organization and Strategy

Being a small producing company with 27 employees, GLF has a traditional functional structure with departments for sales, purchasing, production and administration including finance and IT among others. The production department is naturally the largest of the functions in terms of employees. Apart from the CEO and the vice president, the executive team also includes a CFO, an executive responsible for production and logistics and one executive responsible for quality and sustainability.

As GLF is a family owned business with representatives from the owning family active in the day to day running of the company, the lines between the owners, board of directors and the CEO are blurred in terms of strategic responsibility. The strategic work starts at the top with the owners setting up main directions of the company. That filters down through the board of directors which sets the visions and strategies which are then executed by the CEO. Since the CEO is active in all three of these strategic levels, it is sometimes difficult for him to know

how to act and to be able to put pressure and demands on the firm. The company lacks written strategic documentation, partly due to their small size and the fact that they are a family owned business. Some strategic decisions and responsibilities are distributed downwards, especially to the executive responsible for production and logistics, but generally, strategic decisions are taken on the highest levels within the organization. It is most commonly the retailers that contact GLF when doing business, and due to the retailers' larger sales forces and market reach, GLF has been able to increase their sales without having to increase their own sales department (Johan Wester, CEO at GLF, interview 15th of March 2017).

The main strategic focus of the company has lately been the internationalization through the establishment of the subsidiaries in Poland. The choice of having part of the production in Poland has resulted in lower production costs and closeness to many of their European customers, and their Polish businesses has lately had the most rapid growth and increase in turnover. This has led to that GLF currently are focusing a lot on their Polish businesses. The Swedish business is stable and in Sweden they are around number six in size in their industry. According to Wester it is hard to grow and outrun the larger competitors, and they do not focus on becoming one of the bigger companies in Sweden (Johan Wester, CEO at GLF, interview 15th of March 2017).

4.1.3 Digitalization

Regarding digitalization, GLF has the impression that it is something that is discussed throughout the industry, but also that it does not influence their business to a great extent, at least not yet. They are not discussing digitalization internally within the company. GLF has no knowledge if any of their competitors are digitalizing their businesses. Their business model is built up by producing handcrafted wooden products and the interaction with customers is most often face to face, making the impact of digital technologies on their business low. The company is present on social media such as Facebook for branding towards customers and stakeholders, and are using some digital technologies, as for instance Swish for payment. Swish is only used by end users, representing only a small fraction of total sales, which does not make it crucial for their business (Johan Wester, CEO at GLF, interview 15th of March 2017).

GLF does not have a formulated digital strategy and thus no one formally responsible for questions regarding digitalization in the organization. Regarding decisions in this field it would mainly be the CEO who is responsible. Even though GLF has not formulated a specific digital strategy or has been working with digitalization to a great extent so far, the company sees potential in new technologies and is open to the development (Johan Wester, CEO at GLF, interview 15th of March 2017).

GLF uses an ERP-system for a variety of functionalities such as accounting and finance, production planning, logistics and distribution, warehouse levels and order handling as well as for customer relationship management (CRM). The functions are not integrated to their full potential, and while the functions and information are digitalized, they are still not fully automated. Although there has been discussions with partners and customers regarding integration outside the organization, none is presently done. Digital technologies are mostly viewed as a support to the business and production. The employee's skills and abilities to use the systems of the company are central to the efficiency and is important to get leverage on

the IT and digital investments. GLF trains and educates its employees within the ERP-system and the functionalities mentioned above through an external partner, although due to the general lack of more complex and integrated digital technologies, the extent of the education is limited (Johan Wester, CEO at GLF, interview 15th of March 2017).

Even though GLF is not discussing digitalization to a great extent within the firm, some unstructured future ideas and plans on how to become more digital exist. The intended focus areas in the future are the website, the order handling and billing systems and the internal business systems. GLF are thinking about using an advertising agency to create a digital image bank of their products on their website to provide their customers with more accessible information and to easier be able to customize offers to certain customers. Regarding order handling and billing they want to keep a sustainable image and reduce the number of orders and bills distributed on paper, and instead use electronic versions. This is however something that affects and has to be approved by their customers, which it in some cases is not. To have a more efficient and digital order handling process not requiring human authorization is also something that GLF sees great potential in. Regarding internal business systems, they see potential in having systems to increase the level of communication and knowledge sharing between different functions, like for example between production and sales. Currently they have no structured system to register for example the stock levels or waiting times for certain products in production which the sales personnel have access to. A digital system for this could increase efficiency, but would also hinder personal contact between colleagues. Since GLF is a small company and the sales and production executives are sitting in the rooms next to each other, they can simply just ask each other about these matters. Further, an online shop could be an option to become more digital, but as they are selling most of their products business to business and their customers most often prefer face to face interaction, the potential is small (Johan Wester, CEO at GLF, interview 15th of March 2017).

GLF does not measure the results or impact of their investments in digital technologies per se. The company measures several aspects in the company, like customer satisfaction, delays in delivery etc., but nothing strictly connected to digitalization. For example, the impact of using Swish or the increase in revenue from being active on Facebook is not strictly measured since it is hard to locate specific increases in sales to these technologies (Johan Wester, CEO at GLF, interview 15th of March 2017).

The incentives to become more digital mainly comes from GLF's customers, and is not something that is pushed from within the company itself. GLF is pushed by one of their biggest customers to increase the level of integration between the two in terms of product development. This would mean that the customer want GLF to provide blueprints in a computer aided design (CAD) system, of for example the pallets. Currently this is done by the customer itself. If GLF want to continue the collaboration with the customer, they would have to adapt to the new demands of the customer and invest in a system and competences within CAD (Johan Wester, CEO at GLF, interview 15th of March 2017).

Even though GLF see potential in and are open to new technology, they do not see the digital technologies as something that would have business and profitability potential by itself. As of today, digital technologies are rather seen as costs connected to marketing and branding but that could potentially lead to future financial gain. They see more potential in digital technologies as a way to reach new markets and customers by building a strong brand than increasing efficiency of the internal processes (Johan Wester, CEO at GLF, interview of 15th March 2017).

4.2 Case 2 - AB Gyllsjö Träindustri

4.2.1 About the Company

AB Gyllsjö Träindustri (Gyllsjö) is a family owned company founded in 1946. The company manufactures wooden pallets, and especially EUR-pallets which is their main product, and has its own sawmill. Gyllsjö purchases timber from both large companies within the forest industry and private landowners, sorts and saws the timber into smaller components and boards and assembles them together into finished products (Lennart Svensson, CEO at Gyllsjö Träindustri, interview 21st of March 2017). Today the company has 64 employees and a turnover of 151 MSEK (AB Gyllsjö Träindustri 2016).

The company has its 120 000 m^2 large production site in Klippan, where they receive on average 15 large timber trucks per day. The finished products are sold in Sweden, Denmark and Norway and to some extent also in India. Gyllsjö is a typical sub-contractor and sell their pallets to other manufacturing firms within for example the food, packaging and automotive industry, often in large quantities (Lennart Svensson, CEO at Gyllsjö Träindustri, interview 21st of March 2017).

4.2.2 Organization and Strategy

Gyllsjö has a typical functional organization with a large production department. Most employees work in the production department, with only a few within the administration office with tasks like purchasing and finance. The company invest little in marketing since they mainly work with long-term contracts and large customers. Due to their dependency of their customers, Gyllsjö is to a large extent affected by external market factors and the sales volumes of their customers (Lennart Svensson, CEO at Gyllsjö Träindustri, interview 21st of March 2017).

Gyllsjö is in general unstructured regarding their strategic work. The company has ideas on what they could and would want to do in the future, but few established processes or documentation exist stating the direction of the firm. When large strategic decisions and investments are made, they are taken at the highest levels within the firm, by the board of directors, and more short-term decisions are taken by the CEO. The company previously only focused on mass production, but the last decade they have shifted towards lean production, and improved their more specialized order capability and now manufacture for small and single orders as well (Lennart Svensson, CEO at Gyllsjö Träindustri, interview 21st of March 2017).

One specific long-term strategic goal Gyllsjö has been working towards regarding growth was set in 2006, when they decided to grow by 50 percent in terms of volume of sawed timber. This goal was reached in March 2017. Since the goal was recently reached, Gyllsjö has not established any new long-term goals regarding growth, but the board is looking into it at the moment. Generally, the main focus of the company is on lowering the production costs and increasing the efficiency in production. They are competing with firms based in eastern countries like Poland and the Baltics, with significantly lower costs for personnel, which drives Gyllsjö to constantly work with cost reduction in order to compete (Lennart Svensson, CEO at Gyllsjö Träindustri, interview 21st of March 2017).

4.2.3 Digitalization

Gyllsjö has no explicit digital strategy, no executive with digital responsibility and does not use the term digitalization internally, but is working with digital technologies within different areas to a certain degree. Due to the size and importance of the production and logistics functions for Gyllsjö, those two areas have been in focus for the digitalization of the company. Sales and marketing is not as important and prioritized for digital investments, and few investments are made into that area generally. Although digitalization is viewed as something positive and necessary for the future of the company, it is mainly the potential for cost reduction that is of interest for Gyllsjö. According to Gyllsjö, the company does what it needs to do in order to become better and more cost efficient and sees digital technologies as supporting tools to succeed with its objectives, which for example could result in investing in digital technologies, automation or similar in their production, but the impact of digitalization per se is not really discussed or acknowledged internally (Lennart Svensson, CEO at Gyllsjö Träindustri, interview 21st of March 2017).

Gyllsjö is on its own responsible for the inbound logistics which is served by the company's own fleet of trucks which picks up orders from various suppliers in the area. The order information from the suppliers is given digitally, and contains information about the timber batch in question and its coordinates. Currently that information is received by Gyllsjö via email and manually entered into the trucks' onboard computers providing the shortest possible travelling route. As the same system is used throughout the industry by all actors, the information about the batches to be collected can be delivered directly into the trucks' computers from the suppliers, although Gyllsjö has chosen not to use this direct feature as they would then lose the ability to control the timber and decide whether to collect it or not. Upon arrival at Gyllsjö's production plant, the timber is measured in terms of volume, dimensions and quality which is currently done manually. Gyllsjö has taken the decision to upgrade to a digital system, but has not yet made the purchase and installed the system. The digital system enables a fully automated inspection with cameras, decreasing the time consumption of the inspection by half and also reducing cost. The new system also enables inspections to be carried out at all hours, instead of only during working hours as the current system, which increases efficiency (Lennart Svensson, CEO at Gyllsjö Träindustri, interview 21st of March 2017).

The production is automated to a high degree, and the last completely analog production line was replaced in late 2016. The production line can automatically sort and categorize timber among other features. As which product currently being produced is changed a number of times each day, efficiency can be increased with automated machines as the setup time decreases due to the possibility to save specific settings for specific products. The data from the categorization of the timber can be retrieved from the machines, and thus the exact number of logs sorted into each category can be retrieved for each given day. When the data from the production is compared with how many logs are consumed in each category on a daily basis, an exact stock balance can be established. This information is manually entered and updated in a spreadsheet (Lennart Svensson, CEO at Gyllsjö Träindustri, interview 21st of March 2017).

Gyllsjö sees the importance of educating the employees for the systems they are using, and especially the systems within the production. The systems generally build on each other, making training for further systems or upgrades easier. The training is most often performed by the own staff. Gyllsjö has no predetermined method for value measurement, but evaluates

all investments on if they reach the goals set up when doing the investment, and especially if the calculated cost reductions can be achieved and efficiency increased. However, they do not make any distinction in this measurement system between investments in general and investments in digital technologies (Lennart Svensson, CEO at Gyllsjö Träindustri, interview 21st of March 2017).

Gyllsjö is generally motivated by either reducing costs or are pushed by other actors in the value chain when digitalizing or automating various parts of their business. For the production and logistics functions, keeping the operations cost efficient in order to remain competitive towards competitors in Poland and the Baltics is a major driver. In other cases, such as for the truck's computer systems where suppliers pushes for the integration into their digital system, pushing effects from external actors is the main driver. Gyllsjö sees itself as a small actor in the business, and acknowledges that they are not first with implementing new digital technologies, but rather tend to follow the bigger actors. This can be exemplified with the camera system for automated inspection, as much larger competitors on the market already have similar systems in place. Most often it is the suppliers driving the development regarding new technologies and digitalization, and Gyllsjö has had to adjust to new ways of working, new systems and other kind of demands from the larger players (Lennart Svensson, CEO at Gyllsjö Träindustri, interview 21st of March 2017).

4.3 Case 3 - Ifö Electric AB

4.3.1 About the Company

Ifö Electric AB is a company based in Bromölla founded almost one hundred years ago. The company produces different ceramic products, more specifically fixtures and fuses in porcelain (Öringe 2017). Ifö Electric has 32 employees and a yearly turnover of around 58 MSEK (Ifö Electric AB 2016). Out of the two different product departments fuses is the largest one, representing almost two thirds of the total turnover. All of the company's production is based at the site in Bromölla (Anders Öringe, CEO at Ifö Electric, interview 27th of March 2017).

Ifö Electric mainly sell their products in Sweden, but also to the other Nordic countries and parts of Western Europe. In total around 20 percent of the company's products are sold abroad. Fuses are sold in Sweden, Norway and Finland, while fixtures are also sold in countries like Germany and England. Ifö Electric do not focus on selling their products to the end user directly but instead their main customers are retailers and wholesalers of electronic equipment (Anders Öringe, CEO at Ifö Electric, interview 27th of March 2017).

4.3.2 Organization and Strategy

Ifö Electric has a traditional functional organization, with departments such as production, sales and marketing, administration, production planning and product development. Being a producing company, the production department is naturally the largest in terms of employees, only nine of the employees are white collar workers and the rest belongs to the production. All functions are represented in the executive team, which also includes the CEO and an executive responsible for quality. The executive team is responsible for the majority of the strategic decisions, while some daily strategic decisions are made at a functional level within

each of the departments, especially within sales and marketing (Anders Öringe, CEO at Ifö Electric, interview 27th of March 2017).

Ifö Electric has formulated strategic documents stating the vision, main strategic goals and direction of the firm in a company routine handbook. Assuring and maintaining high quality of the products and keeping all production in Sweden, with competent staff, is important for the company. Ifö Electric's main strategic goals are increased exports, new products and a higher level of technology in the products. The company has a distinct customer focus, and in general, sales and marketing is the prioritized area for investments and development due to the importance of sales for Ifö Electric. Production is not as prioritized when it comes to development, but investments are generally done when equipment needs to be changed or in some cases updated. The company has a goal to increase the revenues coming from their fixtures department, but for fuses they already have a major part of the market which makes it difficult to grow in that area. Strategic decisions tend to be reactive to external factors affecting Ifö Electric, such as pressure from their customers, rather than proactive (Anders Öringe, CEO at Ifö Electric, interview 27th of March 2017).

4.3.3 Digitalization

Ifö Electric does not have a specified digital strategy or responsible for questions regarding digitalization, but decisions regarding investing in digital technology are taken if it supports their overall strategy and directions. Generally, the company does not feel that digitalization and the technical development has affected them greatly and are not discussing digitalization internally. Digital technologies are seen as supporting tools among others. However, there are some parts of their business that has changed and had to evolve due to new technologies and thereby new market situations. According to Ifö Electric, digitalization makes the market more transparent which to some extent affect the competition and the situation on the market. This because new digital channels and technologies makes it easier for new players to enter the market and to reach out to customers. However, the high quality focus that the company has makes them stand out in the competition, and Ifö Electric points out that even though there are new ways of selling and reaching out to customers, you still need to have a good product to be able to sell it in the end (Anders Öringe, CEO at Ifö Electric, interview 27th of March 2017).

To know the market and to keep track on how it changes is part of Ifö Electric´s everyday tasks, and this to some extent includes the impact of digitalization. Regarding digital changes, Ifö Electric mainly focuses on new tools for marketing and it is within marketing the company sees the largest benefits with digitalization. In the marketing meetings when discussing budgets, investments and how to market the company, digital technologies is part of the discussion. Digital channels that the company decided to use are for example Instagram and Pinterest, and they put high value in their website which they keep up to date. The main advantages that Ifö Electric sees with digital technologies is that it is much easier and more cost efficient to scale up their marketing efforts. The disadvantages they see with increased digitalization is that it demands more of both the company and their customers. All players have business systems, web shops or similar that they want to keep updated, and most often the players are using different systems. To connect the systems and also to make Ifö Electrics own systems fit with the demands of the different customers is not easy. Most often, it is the customers driving the digital changes, and Ifö Electric has to keep up and adapt to the

development on the market (Anders Öringe, CEO at Ifö Electric, interview 27th of March 2017).

Ifö Electric has an internal business system that has been with them for a long time, including a CRM-system. During the time they have had a CRM-system it has become increasingly digitalized. For example, in the beginning they had a database with home addresses to their customers which they sent out paper brochures to. Today it is much easier to keep track and to get in contact with the customers and to send out digital newsletters regularly. Within the business system they also have functions such as order handling, billing and purchasing, and the different functions are well integrated with each other. Ifö Electric no longer has their own servers, as everything is cloud based. This helps the company to be efficient also when being away from the site in Bromölla, since many of the employees are travelling a lot. The shipping and transportation is also something that has changed, and the contact with their logistics partner is done through a digital system where they send information about which products to be shipped, when to pick them up and where they are going. Previously the logistics partner got this information manually when picking the products up at the site of Ifö Electric (Anders Öringe, CEO at Ifö Electric, interview 27th of March 2017).

Regarding the product development, digitalization has had great impact with the introduction of CAD. This could, according to Ifö Electric, be the area within the company which has been most affected by digitalization. The CAD-system allows the company to work with 3D blueprints, share it with external partners and save all the information to be able to use it again to work more efficiently. It was mainly the suppliers driving this development, pushing Ifö Electric to start to use CAD (Anders Öringe, CEO at Ifö Electric, interview 27th of March 2017).

Education within the company is done when needed, and regarding for example the CAD-system, the education is done by an external partner. The knowledge level varies a lot between the different functions depending on which systems are used within the functions, everyone does not know how to utilize CAD for example. The different functions understand each other to some degree, but sometimes the understanding and appreciation of each other's work is lacking. The company tries to increase understanding by increased communication and information within the firm and acknowledges this as something that is important to work with actively (Anders Öringe, CEO at Ifö Electric, interview 27th of March 2017).

Ifö Electric does not measure or follow up on the investments in digital technologies. They measure their total efficiency, and can see that they do more with less people today than a few years ago. This could be a result of new systems and digital tools, but it is not something that they measure or reflect on (Anders Öringe, CEO at Ifö Electric, interview 27th of March 2017).

4.4 Case 4 - Saturnus AB

4.4.1 About the Company

Saturnus AB is a family-owned company within the beverage industry, founded in 1893. The company has its own production facility and headquarters in Malmö where both alcoholic and non-alcoholic beverages are produced, such as different kinds of liquor, glögg, soda, juice and concentrates. Apart from their own production, Saturnus is also an importer and

reseller of a number of international brands, mainly different kinds of bottled water. The import and sales of bottled water is the largest of the company's departments in terms of revenues, but their own production has higher margins. The family-owned company has produced beverages during all of its more than one hundred years in business, although the product mix has been updated frequently due to changing customer demands and alcohol regulations among other factors (Edward Liepe, CEO at Saturnus, interview 28th of March 2017). The company has 30 employees and a total turnover of 86 MSEK (Saturnus AB 2016).

Saturnus' customers are mainly large Swedish food retailers and the state owned alcohol beverage retailer, Systembolaget. Export, mainly to Finland, is important as well as sales to retailers within the Nordic alcohol border trade. Apart from the company's own production and the import of international brands, Saturnus has a sister company producing profile products within beverages, such as specially bottled water, called AddValue with one employee (Edward Liepe, CEO at Saturnus, interview 28th of March 2017).

4.4.2 Organization and Strategy

Being a producing company, Saturnus has a traditional functional organization with a large production department where around half of the employees are working. Besides the production department, Saturnus has departments for economy and administration, sales and marketing, logistics as well as quality management and product development (Edward Liepe, CEO at Saturnus, interview 28th of March 2017).

The company has formulated strategic documents and has written down concrete goals regarding for example growth and financial performance. The company has a typical strategy process, where decisions are taken in the executive team within the company and in the board of directors depending on the scale of the decisions. Some decisions are prepared within specific functions or in collaboration with the functions, although strategic decisions are never taken at those levels within the organization, it has to be discussed and agreed upon on higher levels. The product development process generally includes more functions within the company, especially production and marketing. The strategic goals are clearly stated in the internal documentation. Saturnus has the objectives to grow by five percent yearly, and also to increase margins by five percent. Generally the company focuses on product quality and diversification rather than cost leadership (Edward Liepe, CEO at Saturnus, interview 28th of March 2017).

4.4.3 Digitalization

Saturnus experiences that the company is affected by digitalization and has taken a number of initiatives for increased digitalization, mainly focusing on marketing and sales, but to some extent also for internal processes and production (Edward Liepe, CEO at Saturnus, interview 28th of March 2017).

Saturnus has a written digital marketing strategy outlining what digital marketing channels should be used and how they should be used, including for instance Facebook and Instagram. Some channels have consciously been disregarded, like YouTube and Twitter, including reasons for why they are not used. The responsible for this digital marketing strategy is the

company's product manager who also created and is in charge of the strategy document (Louise Ahlander, Product Manager at Saturnus, interview 28th of March 2017). The target group of the digital marketing initiative is not Saturnus' customers, but rather the end consumers. Channels are mainly chosen depending on an estimation on how many end consumers will be reached through it, and is weighted towards the cost of using the channel (Edward Liepe, CEO at Saturnus, interview 28th of March 2017). The strategy is presented in a spreadsheet with columns for the different channels and the purpose of using them, together with specifications on which brands and kinds of products that will be featured in the chosen channels. The company only feature their own produced products in the marketing, and not the products they import and resell. Since Saturnus is working with alcoholic beverages, certain rules and regulations regarding how those specific products are allowed to be marketed must be followed (Louise Ahlander, Product Manager at Saturnus, interview 28th of March 2017). The digital marketing strategy is not included as a part of the overall business strategy or specified as a part of the business strategy, although digitalization and technical development is identified and written down in the internal documentation as some of several external factors affecting Saturnus business environment. Besides in the marketing and sales department, digitalization is not something that is discussed to a great extent within the company. The digital strategy only regards marketing channels and not other digital technologies or tools that would be relevant for other departments within the firm. The strategy is not well known in the other departments, as for instance in production, but the company try to communicate their work during information meetings with the personnel (Edward Liepe, CEO at Saturnus, interview 28th of March 2017).

Even though Saturnus spend time and effort on their digital marketing they are not measuring the results or increase in sales in a structured way. Both because it is hard to measure specific campaigns and advertisements and what impact it has on sales, but also because the company in general is lacking in their measurement methods and follow-up on investments (Edward Liepe, CEO at Saturnus, interview 28th of March 2017). They try to register and write down how many likes they get on Facebook and Instagram, but they could be better in how they measure their digital marketing efforts. The best way to do it could be to have a link straight to a web shop included in the advertisements, enabling them to see directly how many that see the advertisement and then also click on the link and follow through with a purchase (Louise Ahlander, Product Manager at Saturnus, interview 28th of March 2017). Saturnus has considered developing a web shop, also in order to reach end consumers better, but the initiative has a drawback in the high shipping costs due to the weight of the beverages in comparison to the price of the products, and thus has been put on hold. The initiative was based on internal research, rather than explicit demand from customers (Edward Liepe, CEO at Saturnus, interview 28th of March 2017).

Internally, Saturnus uses an ERP-system with functionalities for invoicing and accounting, logistics and monitoring stock levels among others, but could be integrated to a larger extent. Further, much of the production is automated, although Saturnus judges that their bigger competitors have a far more automated production which is a result of their larger sizes and more extensive production. The company has just started to use tablets in their production, instead of writing by hand. The employees are educated enough in the different internal systems to be able to use them, but not to develop them further on their own. For education in their business system they have an external partner coming to their office regularly to assist and increase the knowledge level of the employees (Edward Liepe, CEO at Saturnus, interview 28th of March 2017).

Due to demands and changes from their customers and the industry in general, Saturnus has updated their labeling process making it connected and more integrated with their customers according to an industry standard. The new way of labeling is necessary to be able to keep their customers. If Saturnus does not adapt to the customers' ways of labelling, they will not accept Saturnus products in their warehouses. The labeling is necessary to keep track of products in warehouses, but is also important for ensuring food security (Edward Liepe, CEO at Saturnus, interview 28th of March 2017).

The general view of digital technologies at Saturnus is that they enable increased efficiency and thus decreased costs, for instance for administration, but also that it reduces sources of error across the company. Among strengths and potentials with increased digitalization is the current integration with the customers where the retailers has the possibility to stop the selling of specific products if any defects are found. This is done by stopping the products from passing through the checkout systems of the stores, which can be done instantaneously increasing the food safety of the value chain (Edward Liepe, CEO at Saturnus, interview 28th of March 2017).

Saturnus has identified cybersecurity as a risk with increased digitalization and dependency on digital systems, although nothing is done to assess and mitigate the specific risks. Another risk with increased digitalization is the dependency on stable internet connection for certain parts of the productions. The labeling machine in the production is connected to internet, and Saturnus has on a few occasions experienced a full stop in the production due to the labeling machine being offline (Edward Liepe, CEO at Saturnus, interview 28th of March 2017).

4.5 Case 5 - Alufluor AB

4.5.1 About the Company

Alufluor AB is a major actor within the chemistry industry, founded in 1973. The company, based in Ramlösa outside Helsingborg, produces aluminum fluoride and other chemical substances to customers globally. Many of their customers are based in Sweden, but they also have customers in countries such as Germany, Iceland, Dubai and Japan. Aluminum fluoride is an input used to lower the melting point when producing aluminum, resulting in decreased energy consumption. Aluminum productions is very energy demanding, and thus the aluminum fluoride can decrease energy cost. Besides producing aluminum fluoride, Alufluor also produces inputs to use in different types of glass, for example in camera lenses (Göran Karlsson, CEO at Alufluor, interview 28th of March 2017). The company has 49 employees and a yearly turnover of 244 MSEK (Alufluor AB 2016).

Alufluor's customers are based all around the world and their products are either shipped by train or ship, directly from their production plant. The company only sell their products to other manufacturing firms, so their relationships are strictly business to business. This affect their customer relations, customer contact and marketing, which are built up by strong personal relations, face to face interactions and long-term contracts. Generally, the relationships and contract with customers span over many years (Göran Karlsson, CEO at Alufluor, interview 28th of March 2017).

4.5.2 Organization and Strategy

Alufluor has a typical functional structure, with functions such as production, finance, purchasing and sales. The largest of the departments is the production department, which represents almost half of the employees. Other large parts of their technical organization is built up by personnel working with maintenance and in the company lab. Only around 14 people are working within the administration office. In the industry which Alufluor operates in, environment, health, security and quality is important and they are actively working with questions regarding these fields, including legal matters (Göran Karlsson, CEO at Alufluor, interview 28th of March 2017).

The executive team includes the CEO, a technology manager, and the managers for finance, purchasing and marketing/sales. The strategic work within the company is generally performed by these executives, but some decisions can be made in the different departments directly, especially within the production department. The larger impact the decisions have on financial results, the higher up in the company hierarchy the decisions are made. The most important strategic decisions are taken by the board of directors (Göran Karlsson, CEO at Alufluor, interview 28th of March 2017).

The strategic focus of the firm is on maximizing the use of their assets, both raw material and physical assets in production, to have a high rate of utility and also to make as much money as possible. One factor affecting the company to a great extent, and especially the strategic decisions, is that the raw material they use is rare and thus limited on the global market. They mainly buy and use byproducts from other chemical processes, which is limited in amount on the market. Most often Alufluor cannot get hold of as much of the raw material that they would want, making it hard to increase production, which they otherwise would do. The many rules, restrictions and legal demands within this industry is also an important factor influencing both the company's daily and long-term decisions (Göran Karlsson, CEO at Alufluor, interview 28th of March 2017).

4.5.3 Digitalization

Digitalization is a field which Alufluor is not focusing or reflecting on, and they do not feel affected by new technologies to a large extent. They do not have a specific digital strategy and no one formally responsible for questions regarding digital technology. They are not using the term digitalization internally and has a limited amount of internal communication in this field. Since Alufluor´s sales and customer contact is built up by long-term relationships and most often face to face interactions, they do not feel a need for digital technologies regarding their marketing and sales functions. Production, however, is affected to a greater extent and the company has a fully automated production process. The entire production is run by computers and robots which are controlled from a control room, and the staff only interfere if something goes wrong and very few actions needs to be handled manually. Alufluor sees the development in the production as a natural digitalization which had to evolve due to the general development within the industry. It is not something they reflect on on a daily basis, and it is not something that distinguishes them from their competitors. Alufluor believes their competitors are at a similar technological level, some might be a bit further ahead and some might be lagging, but they are confident in their own facilities. The technological development within production is not new in this industry, it has been

important for many years and is necessary to ensure a cost efficient production (Göran Karlsson, CEO at Alufluor, interview 28th of March 2017).

Besides production, Alufluor is not investing in digital technologies. As within sales and marketing, they do not see any specific needs to invest in new systems or technologies in other functions, much due to their relatively small size and type of industry. They do not have an advanced internal business system, but a more simple and basic system where they mainly calculate costs and revenues. Alufluor mainly see the new technologies as costs, and not something that could vastly improve or increase efficiency in their business. They have seen some of their competitors invest in new business systems or other technologies which has failed and only cost them money (Göran Karlsson, CEO at Alufluor, interview 28th of March 2017).

Many of Alufluor´s processes are more or less handled manually and by email, such as the order handling. They do not have a CRM-system to handle their customer data and no digital tools for production planning etc. The technological systems they do have, especially within production, is well handled by the personnel and both new and established employees are educated by an external partner when needed. The technological knowledge level within the company varies a lot between functions, mainly due to the different demands and use of technology within the different functions, but also due to different levels in educational background (Göran Karlsson, CEO at Alufluor, interview 28th of March 2017).

One field which Alufluor could see improvement in with new technology is within monitoring and follow-up of sales and shipment. As of today, they have a GPS-system to track where the trucks and ships with their deliveries of supplies and products are located. This is important since they often have long delivery times and want to be able to know when they will receive supplies and to be able to inform customers of date of delivery. Due to these long delivery times, Alufluor see potential in knowing both their customers and suppliers stock levels to be able to plan their production and shipments more efficiently. This is something which could be improved by digital technology and by being more integrated with external partners. However, since they are not in a fast paced consumer goods industry, Alufluor points out that the production is not in the same need of being flexible and integrated with external partners (Göran Karlsson, CEO at Alufluor, interview 28th of March 2017).

Measurements is also a field which Alufluor could see a potential in improving in. Today, measurements in the company are in general lacking and they could improve and have better methods and control of how much they have in stock, how the current demand looks like, how much they are selling and shipping etc. to decrease uncertainties. Alufluor states that it is hard to measure the result of certain investments, but they measure their level of productivity daily (Göran Karlsson, CEO at Alufluor, interview 28th of March 2017).

4.6 Case 6 - Presona AB

4.6.1 About the Company

Presona AB is a designer and manufacturer of machines, or balers, for compacting and baling a variety of waste and recycle materials such as paper and plastic, as well as household and industrial waste (Presona 2017). The company has 36 employees and a turnover of 109

MSEK (Presona AB 2016), although the turnover varies from year to year between 80 and 150 MSEK because of fluctuating amount of projects. Presona's history stretches back to the late 19th century, although the company has changed scope and products during the time and has had its current form and approximate product portfolio since around 1970. Presona is owned by a Norwegian Private Equity firm. The company previously had production of all components to the machines, but currently only performs assembly, testing and quality control at their production site in Tomelilla, Sweden (Stefan Ekström, CEO at Presona, interview 4th of April 2017).

Scandinavia is considered Presona's home market, but exports are increasingly important. The markets in the Nordics, Germany, Belgium and the Netherlands among other countries in northern Europe are traditionally important for the company, although the sales volumes are currently decreasing due to the maturity of the markets. Eastern Europe, India and China are important emerging markets, and Mexico is currently the most important market. They have no competitors in Sweden, but around 20 competitors in Europe, mainly in Germany. On a yearly basis, the production volume is low, and the variation within the production range is large. This together with the highly tailored solutions for each customer, makes investments into automating the production financially unviable, and the production is thus manual (Stefan Ekström, CEO at Presona, interview 4th of April 2017).

Presona's customers are mainly actors within recycling which has their own plants and sites for recycling, although all companies which produce waste and have a demand for machines baling that waste for simplified handling are potential customers. The major customers tend to be companies which have contracted the responsibility for recycling in for instance municipalities. Due to the low amount of machines produced on a yearly basis, the high level and customization of orders and the long engagements with customers, the sales process is mostly focused on personal contact and networks, as well as building long lasting relationships (Stefan Ekström, CEO at Presona, interview 4th of April 2017).

4.6.2 Organization and Strategy

Presona AB has a traditional functional organization being a manufacturing SME, although in comparison with other manufacturing SMEs, the production department with only six employees is small. Apart from the production department, Presona has a sales and marketing department, a service and aftermarket department, and a department more focused on projects and key accounts. These functions, as well as the CFO and the CEO of the company are represented in the company's executive team. Approximately half of Presona's staff is white collar workers (Stefan Ekström, CEO at Presona, interview 4th of April 2017).

The strategy process is also typical for SMEs, where strategic decisions are taken within the company's executive team, and also approved by the board of directors. Presona is keen to take input from the different functions and departments if a specific competence is present there. This input is important in the strategic process, as the executive team wants as much material as possible in order to make the best decisions, and thus such specific competence and input is valued and taken into account. High quality and service are important focus areas for the company, rather than having the lowest prices (Stefan Ekström, CEO at Presona, interview 4th of April 2017).

4.6.3 Digitalization

Although Presona lacks an explicit digital strategy and responsible executive and does not use the term digitalization in their internal strategic discussion, the company has taken a number of initiatives within digitalization and digital technologies. The main areas of focus where digital technologies have been utilized is sales and marketing, internal processes as well as developing the baling machines with digital functionalities. The main reason for these changes and implementations is cost reduction and increasing internal efficiency (Stefan Ekström, CEO at Presona, interview 4th of April 2017).

Serving the customers' machines is costly as it traditionally requires travel to and from the customer's facilities in order to assess and solve the problem, and as Presona's customers are spread all over the world, this is increasingly costly. To make the service more cost efficient, Presona has developed internet connected features for their machines, so that information about the machines can be shared across the internet. This enables Presona's customer service to get information about and assess stoppages directly from the company's facilities in Tomelilla, minimizing time consumption and reducing travel necessity to a certain degree (Stefan Ekström, CEO at Presona, interview 4th of April 2017).

Apart from their machines, Presona has focused on digitalizing their sales and marketing function. This includes utilizing digital platforms for communication with mainly customers, but also other stakeholders through Facebook, Instagram, LinkedIn and YouTube. Further, sales material and sales communication is increasingly digitalized (Stefan Ekström, CEO at Presona, interview 4th of April 2017).

Presona uses digital technologies and systems for most functions, such as for instance accounting and finance, CRM, stock levels and order handling, interaction with suppliers, production planning, marketing and social media. The systems are generally well integrated. The main driver behind the acquisition of the systems is increasing the internal efficiency, as that reduces costs, especially personnel cost. Naturally there is a discrepancy between functions in terms of what systems are being used, and thus also the knowledge levels for the employees in question. Education is managed internally, and to some extent with external suppliers of systems. The company has the ambition to integrate further functions within some systems in which they are not currently present. Presona also uses cloud services, and recognizes the increased use for them for the travelling personnel. Due to the difficulty to isolate and assess the specific impact of digital technologies such as social media, digital technologies are not evaluated or measured specifically, although the company measures internal efficiency in a bigger perspective (Stefan Ekström, CEO at Presona, interview 4th of April 2017).

Digital technologies is generally viewed as tools among others, and decisions to invest in specific digital systems are not done due to the ambition to increase digitalization, but rather in order to increase efficiency and decrease costs. Presona is to a certain degree proactive when making investments and taking initiatives within digital technologies, especially when making the machines more digital. Generally Presona is the actor in the value chain taking initiatives for increased digitalization, and thus is the actor influencing their partners, rather than the opposite. Presona recognizes the risk with non-authorized actors accessing information as more information is shared through digital platforms and through increased integration with partners, although it is necessary to share information to succeed in Presona's point of view (Stefan Ekström, CEO at Presona, interview 4th of April 2017).

5 Analysis

This chapter presents the analysis of the study, and is divided in three different sections. The first section includes an analysis and assessment of the strategic alignment maturity of the six studied case companies. The second section presents and discusses factors and drivers affecting how the companies work with digitalization, digital strategies and the level of their strategic alignment. Lastly, an analysis of the practical use and relevance of the theoretical framework for the study is performed.

5.1 Strategic Alignment Maturity of the Case Companies

5.1.1 The Use of the Strategic Alignment Maturity Model in This Study

As the studied case companies in most cases lack an enunciated digital strategy and an executive with overall digital responsibility, the level of strategic alignment maturity according to the models by Henderson and Venkatraman and Luftman is difficult to assess. These models build on analyzing the alignment between two functions or two executives responsible for the overall strategy and the IT strategy. First of all, a digital strategy and an IT strategy is not the same thing, as stated in the theory, which made the models hard to use in this case. Secondly, since a digital strategy or two different functions or executives does not exist, the model cannot be used in practice as it is described in theory. The analysis of the case companies was still performed according to the six criteria proposed in the Strategic Alignment Maturity Model but took a more general approach and analyzed the work within the firm and not between the two functions or executives. Further, the model suggests to rate the companies' alignment in several steps, first to rate the practices that belongs to each of the six criteria, then to calculate an average score for each criteria and lastly to calculate a total average of alignment. The assessment in this study did not perform a rating of each of the practices, but directly of each criteria, although the practices were taken into account. In accordance with the Strategic Alignment Maturity Model by Luftman as presented in section 3.4.2.4 and figure 3.8, the case companies were rated within the six criteria for strategic alignment and given a score between 1 and 5. The following sections present the assessment and rating of the strategic alignment maturity, according to the six criteria, for each of the case companies.

5.1.2 Strategic Alignment at GLF

Communication
GLF is not discussing digitalization within the firm and thus does not have regular communication or spread learning internally within this field. The company does not have written strategic documents which could be a hinder when communicating the strategic work internally and externally. Although GLF lacks a digital strategy and a digitally responsible executive, the executives with the overall strategic responsibility has an appreciation and basic understanding of the potential value of digital technologies. The company does not communicate their work regarding digitalization with external partners. The communication criteria at GLF is rated at level 2 according to the Strategic Alignment Maturity Model.

Competency/Value Measurement
GLF generally works with value measurement in a number of areas of the business, but as

digital technologies are applied to a low extent, they are not specifically included in the value measurement. The digital technologies applied, such as Swish for payments and social media for branding, are not particularly measured and acted upon in terms of impact on sales, customer satisfaction etc. The competency/measurement criteria at GLF is rated at level 1 according to the Strategic Alignment Maturity Model.

Governance
GLF lacks a clear structure for their strategic management process due to size and ownership structure, and as mentioned previously, the company does not have any written strategic documents. The decisions regarding investing in digital technologies generally does not come from within the company itself, but is a result of pressure from larger customers. Thus, investments and development in digital technology is not a result from the company's own business strategy, but rather a necessity and a way to adapt to external factors. The governance criteria at GLF is rated at level 1 according to the Strategic Alignment Maturity Model.

Partnership
GLF generally sees digital technologies as a cost and a necessity rather than something which could have potential for profitability on its own. But the executives are open for the digital development and what digital technologies could do for them in the future, and thus digital technologies are seen as emerging assets. A vital aspect in this case is that the digital technologies must fit with the company's organization and processes for it to be worth investing in. An example of this is the case with the personnel in the sales and production department. Due to the size and organization, they simply just talk to each other to ask about the current stock levels or waiting times instead of having that information in a digital system. The partnership criteria at GLF is rated at level 2 according to the Strategic Alignment Maturity Model.

Scope and Architecture
GLF has a basic ERP-system with traditional functions such as email and accounting, but the different functions are not integrated across the organization. More complex business systems for decision making etc. are not in place. The company lacks integration with partners and customers, even though some discussions regarding this has been made. Digital technologies are generally seen as business support only. The scope and architecture criteria at GLF is rated at level 1 according to the Strategic Alignment Maturity Model.

Skills
GLF trains their employees when necessary though an external partner, so the employees are deemed to have skills to be effective in their work. The executives recognizes the value of educating and enabling the employees, but it only covers a minority of the employees and business areas and the skills vary between the different functions. The skills criteria at GLF is rated at level 2 according to the Strategic Alignment Maturity Model.

5.1.3 Strategic Alignment at Gyllsjö Träindustri

Communication
Even though Gyllsjö to a certain extent are using digital technologies, especially in their production and logistics functions, they do not communicate about or reflect on the digital development. They have no regular discussions regarding digitalization and are not in a

formal way spreading learning about digital technologies internally. The business understanding and appreciation of the digital technologies and automated processes that Gyllsjö uses and potentially could use are, however, quite good. The communication criteria at Gyllsjö is rated at level 2 according to the Strategic Alignment Maturity Model.

Competency/Value Measurement

Gyllsjö measure and evaluate their investments, including investments in digital technology, on if they reach the goals for cost reductions and if efficiency is increased. Digital technologies are not treated differently or measured specifically, which could make it hard for the company to know the exact value of the digital technologies and their impact on performance. The competency/value measurement criteria at Gyllsjö is rated at level 2 according to the Strategic Alignment Maturity Model.

Governance

Gyllsjö lacks a dedicated executive and organization responsible for a digital strategy and in general has an unstructured strategy process. Few established processes or strategic documentation exist. It can be concluded that while some projects that are a result of the business strategy include digital technologies, increased digitalization per se is never the goal, but rather one among many means to decrease costs. The governance criteria at Gyllsjö is rated at level 1 according to the Strategic Alignment Maturity Model.

Partnership

The value appreciation of digital technologies from the business side is quite strong and digital technologies are present in already made and future planned investments, indicating the importance of digital technologies for the strategic planning of the company, even if they are not explicitly talking about the importance of digitalization within the firm. But even though digital technology is present in their plans and investments, it is perceived as a supporting function and enabler for their business rather than a business driver. The partnership criteria at Gyllsjö is rated at level 2 according to the Strategic Alignment Maturity Model.

Scope and Architecture

Gyllsjö has established several digital systems and computerized functions, especially within the production and logistics functions, but a lot of the systems are not used to their full potential and most of them are not integrated with each other. An example of this is the data coming from their suppliers regarding available batches of timber that can be picked up. Instead of using the function of getting the information to the trucks immediately, the information goes through a manual process before the information reaches the trucks. The situation is similar for the production, where they have computerized systems calculating the number of received logs and produced items, but which are then retrieved and updated in a manual spreadsheet each day. To conclude, Gyllsjö has a number of digital systems available to them, and has integrated them to a certain degree, but much of the handling and integration is manual. Thus not utilizing the full potential of the systems. The scope and architecture criteria at Gyllsjö is rated at level 3 according to the Strategic Alignment Maturity Model.

Skills

Training of the employees within Gyllsjö's digital production systems is taken care of within the firm itself, and the employees are perceived to have enough skills within the used systems. The business staff generally seems to understand and speak the language of the

technical staff, rather than vice versa. The skills criteria at Gyllsjö is rated at level 2 according to the Strategic Alignment Maturity Model.

5.1.4 Strategic Alignment at Ifö Electric

Communication
Ifö Electric discusses and reflects on digitalization to some extent. Understanding and appreciation of each other's work in the different departments is sometimes lacking, but is something that the company is working on to improve. Hence, the company is trying to spread learning and knowledge internally but has not yet fully succeeded. Even though the company has a low level of discussion and communication regarding digital technologies in some departments, Ifö Electric still seems to appreciate the tools they do have, and their contribution to the firm's effectiveness. The communication criteria at Ifö Electric is rated at level 3 according to the Strategic Alignment Maturity Model.

Competency/Value Measurement
Ifö Electric does not measure the impact or the result of their investments in general, and this also applies to investments in or use of digital technologies. They do realize that digital technologies supports the company and can see an increase in overall effectiveness, but it is not something they measure in exact numbers. The competency/value measurement criteria at Ifö Electric is rated at level 1 according to the Strategic Alignment Maturity Model.

Governance
Ifö Electric does not have a specified digital strategy or responsible for digital investments so no clear roles regarding this is specified. The company has written documents stating the vision, strategic goals and direction of the firm which indicates a more formalized strategic process, and the specified goals include an increased use of technology in their products. Decisions regarding investments in digital technology are said to support the overall strategy, but many of the decisions taken so far within the company seem to be reactive and a result of pressure from other players, like customers and suppliers. Though, the use and appreciation of social media and new marketing channels seem to be an active decision from the company itself. The governance criteria at Ifö Electric is rated at level 3 according to the Strategic Alignment Maturity Model.

Partnership
Digitalization does not play a major role in Ifö Electric's internal communication, though they are discussing digital technologies in some departments, especially within sales and marketing. An increased use of technology is mentioned in their overall strategic goals, which indicates that the company reflects on the importance of digital technologies. Though, they only see digital technologies as tools among others. However, they do see and acknowledge that the technologies they are using have made the company more efficient and put high value in some of their technologies, especially in their digital marketing channels and the CAD-system. The partnership criteria at Ifö Electric is rated at level 3 according to the Strategic Alignment Maturity Model.

Scope and Architecture
Ifö Electric has a well-developed internal business system with several of the different internal functions integrated. They are to a limited extent also integrated with external partners, for example regarding logistics and transportation, but a lot is still managed

manually. The scope and architecture criteria at Ifö Electric is rated at level 3 according to the Strategic Alignment Maturity Model.

Skills
The knowledge level within the different departments varies naturally due to the different demands of knowledge in the different functions. The knowledge level of the systems and technologies in the different functions is however perceived to be good, and education is provided when needed. The different level in technological knowledge sometimes hinders communication and appreciation of each other's work. The skills criteria at Ifö Electric is rated at level 2 according to the Strategic Alignment Maturity Model.

5.1.5 Strategic Alignment at Saturnus

Communication
Communication regarding digitalization is good among the business executives, the board of directors and in the sales and marketing department. They have a written digital marketing strategy, but it is not communicated to the rest of the organization the way it could be. Besides in the sales and marketing department, digitalization is not discussed to a great extent and the communication between the different internal functions could be greatly improved. The business executives, however, has a good understanding of the impact of digital technologies. The communication criteria at Saturnus is rated at level 3 according to the Strategic Alignment Maturity Model.

Competency/Value Measurement
Saturnus is in general lacking in the measurement methods, including the results of their digital investments and the impact of their digital marketing strategy. No real follow-ups are made of their social media campaigns or investments in new technology in production or internal business systems, besides writing the number of likes down in a document. The competency/value measurement criteria at Saturnus is rated at level 1 according to the Strategic Alignment Maturity Model.

Governance
The company has a specified digital marketing strategy and a responsible executive for the strategy, besides their other strategic documents. The company in general has a formalized strategic process. Saturnus has taken conscious and active decisions in which channels to be active in and which to disregard regarding their marketing which indicates structure and planning in their marketing decisions. In other parts of the organization the decisions and processes are not as regulated regarding digital investments though. The governance criteria at Saturnus is rated at level 3 according to the Strategic Alignment Maturity Model.

Partnership
Saturnus values digital technologies high, see potential in them and what they could do for the company and the industry in general. Hence, the company has a high level of trust in new digital technology. This especially applies for the sales and marketing department, but digital technology also seems to be appreciated in other departments. The production is highly automated and the employees seems open to new technology, as for instance using tablets. The company sees benefits in increased integration with external partners, which indicates

trust in digital technology in other departments as well. The partnership criteria at Saturnus is rated at level 4 according to the Strategic Alignment Maturity Model.

Scope and Architecture
Saturnus has an internal business system that is working its purpose, with a lot of functionalities, but could integrate the different functions to a greater extent. The company is integrated with their customers in some aspects, for example regarding the labeling process and communication about defects of the products, but could be increasingly integrated with other external partners, for example their suppliers. Digital technologies help the company to compete and are perceived to improve the profit of the firm, but this is not measured in any specific way. The scope and architecture criteria at Saturnus is rated at level 3 according to the Strategic Alignment Maturity Model.

Skills
The knowledge level required in the different functions about the systems and technologies seems to be sufficient, and the administrative employees are educated and supported by an external partner regarding the internal systems on a regular basis. The business personnel have appreciation and understanding of digital technologies but might not speak a technical language themselves. In general, the company seems open and ready for change. The skills criteria at Saturnus is rated at level 3 according to the Strategic Alignment Maturity Model.

5.1.6 Strategic Alignment at Alufluor

Communication
Alufluor is not communicating about digitalization or use that specific term internally. It is not a focus of the firm and they do not reflect on the technological development or how it is affecting their business. They have limited integration and communication with external partners, which is then usually performed by email or face to face communication. The business side seems to have low appreciation of digital tools and technologies, and knowledge sharing between internal functions or with external partners is not well established. The communication criteria at Alufluor is rated at level 1 according to the Strategic Alignment Maturity Model.

Competency/Value Measurement
The processes regarding value measurements within the company are generally lacking, including measuring the impact of technological tools and investments. They do see a potential in improving their measurement methods in certain areas, but it is not something which is in place today. The competency/value measurement criteria at Alufluor is rated at level 1 according to the Strategic Alignment Maturity Model.

Governance
The strategic decisions are mainly taken by the CEO and the executive team, while some are taken further down in the organization. The company does not focus any of their strategic decisions on digital technology, even though the production is highly automated. The high level of automation is not a conscious strategic decision, but rather a result of a natural development within the industry. The decisions regarding digital technology is therefore not a result of a specific strategy, but to follow in the industry development. The governance criteria at Alufluor is rated at level 1 according to the Strategic Alignment Maturity Model.

Partnership

The partnership dimension, how the company views digital technologies and their importance for the business, is vital for a high degree of strategic alignment. Alufluor mainly see digital technologies as a cost and does not seem to have a high level of trust in new technology for increased efficiency or improvement for their business, which indicates a low level of partnership within the firm. The partnership criteria at Alufluor is rated at level 1 according to the Strategic Alignment Maturity Model.

Scope and Architecture

The digital technologies that exist within the firm are mainly based within the production function, where the processes are fully automated. However, in the rest of the organization the infrastructure and digital systems are not advanced and several tasks within the administration office are handled manually, or at least parts of them. They have a basic internal business system with low integration between functions and external partners. The digital technologies and infrastructure is not something the company is focusing on to compete on the market and to get ahead of their competition. The scope and architecture criteria at Alufluor is rated at level 2 according to the Strategic Alignment Maturity Model.

Skills

The knowledge level of the production systems and automated processes seems relatively high within the organization, and regarding these areas the employees are educated if and when they need to by an external partner. The knowledge level varies naturally between functions due to different educational backgrounds and different technological demands of their respective positions. The functionality and impact of digital technologies does not seem fully appreciated by the business personnel, which would be important for high alignment. The skills criteria at Alufluor is rated at level 2 according to the Strategic Alignment Maturity Model.

5.1.7 Strategic Alignment at Presona

Communication

The term digitalization is not explicitly used at Presona. However, the company communicates about specific digital technologies at various levels and are in some cases proactive in their decisions and investments regarding digital technologies, which indicates communication about the value of new technology internally. The executive team has a good understanding of the value of the digital technologies. The communication criteria at Presona is rated at level 3 according to the Strategic Alignment Maturity Model.

Competency/Value Measurement

Presona does not specifically measure the impact of digital technologies, partly because it often is difficult or impossible to isolate and assess the impact of specific investments or digital technologies, such as for instance measuring the increased sales volume due to the use of social media as a tool for interaction with potential customers. The company generally does not measure the impact of non-digital investments either, but measures internal efficiency on a more overall level, especially within the production. The competency/value measurement criteria at Presona is rated at level 2 according to the Strategic Alignment Maturity Model.

Governance

Although Presona does not have an executive responsible for digitalization, nor a department focusing on digitalization, or uses the term digitalization, the company is having discussions internally about digital strategies and digital technologies. The strategic decisions are taken by the CEO and the company's team of executives often in discussion with the board of directors depending on the scope of the decision, and often with input from lower levels in the organization. Presona has a clear process for strategic decisions, and although digital technologies are considered separately, the company generally has a proactive stance when taking decisions regarding digital technologies, and is more often influencing the other actors in its business environment and value chain rather than the opposite. Digital technologies are viewed as a tool among others to reach strategic goals such as increased efficiency or an improved marketing and sales function. The governance criteria at Presona is rated at level 3 according to the Strategic Alignment Maturity Model.

Partnership

Presona has an optimistic view of the possibilities of increased digitalization. Reducing costs, increasing internal efficiency, providing more cost efficient customer service and providing a more diversified product offer are examples of drivers. The executive's seem to have a good understanding of the value of digital technologies, but cannot naturally have an appreciation of the value of a digitalization function as such a department is non-existent. The partnership criteria at Presona is rated at level 3 according to the Strategic Alignment Maturity Model.

Scope and Architecture

Presona uses digital tools and systems for a wide variety of functions, both for internal processes and interaction with external partners. These are well integrated within the company, and to some extent also integrated with external partners. This can be exemplified with the digitally connected machines which provide real time information from the customers' machines, simplifying the service and maintenance of the machines. Presona's biggest customers are not integrated with product development functions internally, but input from those key accounts are important and taken into account in the process. Apart from traditional systems for functions such as production planning, accounting and finance and CRM, Presona also utilizes social media to a high degree. The scope and architecture criteria at Presona is rated at level 4 according to the Strategic Alignment Maturity Model.

Skills

Presona's personnel has the appropriate set of skills for using the variety of systems mentioned previously, and the company acknowledges the importance of educating the employees. Employees are to a certain degree included and integrated in the strategic process as the company is keen to get as much quality input as possible. There is a natural difference in the level of technical skills between different functions of the organization depending on what systems are used in the particular functions. The skills criteria at Presona is rated at level 3 according to the Strategic Alignment Maturity Model.

5.1.8 Summary of the Strategic Alignment Maturity of the Case Companies

Table 5.1. Summary of strategic alignment maturity of the case companies.

	Commu nication	Competency/ Value Measurements	Govern ance	Partner ship	Scope and Architect ure	Skills	Average
GLF	2	1	1	2	1	2	1.5
Gyllsjö	2	2	1	2	3	2	2
Ifö Electric	3	1	3	3	3	2	2.5
Saturnus	3	1	3	4	3	3	2.8
Alufluor	1	1	1	1	2	2	1.3
Presona	3	2	3	3	4	3	3
Average	2.3	1.3	2	2.5	2.7	2.3	**2.2**

The average strategic alignment maturity level at the case companies varies between 1.3 and 3, with a total average of 2.2, which can be seen in table 5.1. The maximum score that can be achieved according to the model is 5. This result corresponds well with the theory presented by Luftman (2003), where he suggests that most companies score around level 2. Generally, the studied companies score quite low in their alignment maturity.

5.2 Factors and Drivers Affecting Digitalization, Digital Maturity and Level of Strategic Alignment of the Case Companies

5.2.1 Introduction

The interviews and subsequent analysis of the case companies showed that the companies have a varying understanding and communication regarding digitalization, utilize digital technologies to varying degrees, and have reached different levels of strategic alignment maturity as presented in table 5.1.

A major finding from the analysis of the companies' situations is that the companies have chosen to focus on a variety of different areas and functions within the company when making investments in and developing digital technologies, developing digital strategies and improving the strategic alignment internally. From this finding, a number of factors and drivers describing how the companies are affected, why they are not focusing on digitalization and digital strategies to a larger extent and what decisions and prioritizations they make in terms of digital strategies and digital technologies can be identified. These factors and drivers are elaborated on in detail below.

5.2.2 The Size of the Company

The six case companies in the study are SMEs and range from 26 to 64 employees and the total turnover of the companies range from 58 to 244 MSEK. The size of the companies has an impact on how the companies are affected by digitalization and their level of strategic alignment from a number of perspectives. The companies in the study generally has quite informal and ad hoc strategies, and non-complex strategy processes where decisions generally are made within the executive team with a varying level of integration from lower levels of the organization.

Firstly, the small size of the organizations makes formal processes excessive and unnecessary, as the organizations are quite agile and communications and decisions do not include more than a few people and functions. Secondly, as all case companies are traditional functional organizations, they do not have more than a few levels within the organization where strategic decisions are made, and most often only one level, further simplifying and making structures excessive. This finding correlates well with the stated theory about organizational structures. Lastly, some of the case companies are also family businesses, making the top functions within the organization, such as owners, board of directors and executive team, even more integrated as they are often represented by the same people.

Since the case companies in many cases lack formal strategic processes, specific functional strategies and written strategic documentation in some cases, it is natural that they also lack enunciated digital strategies. This is true for all companies apart from Saturnus which has developed a digital marketing strategy, as well as utilizes the term digitalization in their general strategic documentation. Further, probably due to the small size, none of the companies have a person or function solely responsible for questions regarding digitalization.

All six factors from the Strategic Alignment Model are to various degrees affected by the size of the companies, which partly explain the companies' generally low levels of strategic alignment, and especially for the two criteria governance and competency/value measurements where the companies on average have the lowest scores. The criteria governance is about organizational structures, strategic processes and strategic planning and competency/value measurement is mainly about metrics, benchmarking and formal assessments of performance. Those two factors are, as discussed above, less important for smaller and more agile organizations.

5.2.3 Complexity of the Product and Production Process

Two factors also affecting the level of digitalization and especially what areas and functions within the company that are prioritized when digital initiatives and investments are made, are the complexity of the product and the complexity of the production process. Most of the case companies have being cost efficient as a highly prioritized objective. Being manufacturing companies, the manufacturing department is naturally the biggest and most cost intensive part of the organization. The case companies with more complex products and more complex production methods and processes probably have even more costs allocated in the production, and thus a bigger potential for reducing costs and increasing efficiency with the help of digital technologies in that department.

How the complexity of the production process is affecting which areas are prioritized can be exemplified by Presona and Alufluor. In the case with Alufluor, the production process and product are highly complex, which together with the high demands on the quality of the product makes automation of the production and digital tools in the production a necessity. Having manual production would not be cost efficient. Presona assembles components from subcontractors, and while the machines are complex, the assembly process is manual and not quite complex. Few machines are made annually, and they are highly customized making automation and digital tools financially unviable compared to the case with Alufluor, making it a less prioritized area for cost cutting investments. Gyllsjö is also an interesting example as they have utilized a number of digital tools in the production, as the newly procured system for automatically inspecting incoming timber. The main reason for the prioritization is cost reduction.

5.2.4 Composition of the Value Chain

The case companies are generally reactive rather than proactive when it comes to investing in and implementing digital technologies, increasing the use of digital tools and subsequently the level of strategic alignment. The only exception is Presona, which to some extent is proactive and mainly takes own initiatives for digital investments.

The case companies are generally among the smallest actors in their respective value chains, and in some cases, such as with GLF and Saturnus, subcontractors to some of Sweden's largest companies. Larger companies are often more digitally developed and are better at utilizing digital technologies, and are thus affecting the companies surrounding them in the value chain, both upstream and downstream. The case companies are thus affected by and are reactive to the actions of the larger actors in their respective value chains, who tend to push the development and digital integration for their own benefit. This can be exemplified by GLF and Saturnus. In GLFs case, they are as stated in section 4.1.3 influenced by one of their largest customers to integrate the customer's CAD-development process in order to develop blueprints for pallets specifically adapted for that customer's needs. The blueprints has so far been developed by the customer and then delivered to GLF for production, but the customer is now pushing the development to GLF in order to increase efficiency which is forcing GLF to adapt and implement the CAD-system. This driver can be further exemplified by Saturnus which as stated previously has updated their machinery for labeling products by making it connected and integrated with their customers' system due to demand from their customers and changes in the industry in general. For Saturnus, complying with the changes is a necessity in order to keep the customers, as Saturnus' products would otherwise not be accepted in the warehouses of the customers.

For both GLF and Saturnus it is the relationship with larger actors downstream in the value chain such as customers that give them drivers and incentives, but the drivers and incentives are similar if large actors are present upstream in the value chain as well. This is the case for Gyllsjö and their relationship with certain suppliers. As has been detailed in section 4.2.3, Gyllsjö has invested in digital technologies in their trucks performing the inbound logistics of timber in order to enable the handling of batch information more efficiently. They are currently not using the tool to its full extent, but suppliers pushes for a larger degree of implementation as the same system is used throughout the industry and by larger suppliers.

Neither Alufluor nor Presona can be said to be strongly influenced by larger actors in their respective value chains. Alufluor has a generally reactive stance, but Presona's is more proactive. It cannot be concluded if this is due mainly to Presona's lack of larger actors in their value chain, or due to Presona's generally higher understanding of the business value of increased digitalization.

5.2.5 Type of Product and Sales Process

What type of products the case companies produce, what customers they mainly sell them to and how the sales process is structured and organized is another factor affecting what areas within the organization the company is prioritizing when making investments in digital technologies. Out of the six case companies, Ifö Electric and Saturnus produce products that are consumed by the average consumer, while the remaining four companies, Alufluor, Gyllsjö, GLF and Presona produce either components used in other companies' production, or products consumed by other companies. Although GLFs products mainly are sold to other companies through intermediaries or directly by GLF, a small percentage of the total sales stem from sales directly to individuals.

The case companies producing consumer goods, Ifö Electric and Saturnus, has prioritized utilizing digital tools and technologies within their sales and marketing functions to a far greater extent than the other companies. This is done in order to better reach out to customers through for instance social media, or to increase sales and improve branding. Saturnus' clearly enunciated digital marketing strategy is an interesting example of this. The strategy states what digital marketing channels Saturnus should be present in such as what social media to use, but also more specifically how they should be used in practice, what budget and resource allocation there is for each specific channel. The target group for the digital marketing strategy is end consumers, even though Saturnus does not have any sales directly towards end consumers, but rather through intermediaries and retailers. The long term goal of the digital marketing strategy is to increase sales and strengthen the company's brand.

Ifö Electric's initiatives and prioritizations can be used to reinforce this argument. Similarly to Saturnus, their products are mainly consumed by end users, but the sales are done through intermediaries and retailers. Thus, Ifö Electric also does not have any direct contact with and sales towards the end users of their products. Although they do not have a digital marketing strategy such as Saturnus, they have a strong presence in social media for marketing and branding purposes as marketing is the area in which the company sees the biggest potential in for digital technologies. The channels used are mainly Pinterest and Instagram, but having a good and updated web page is also important for Ifö Electric. The purpose of the marketing is to increase branding, and the main advantage with digital technologies in marketing according to Ifö Electric is that it is easier to scale up the marketing effort in a cost efficient way. As stated in section 4.1.3, GLF also utilizes social media to some extent to brand their products, but the target group is not clearly defined and not as much emphasis is put into the area in comparison to Saturnus and Ifö Electric.

Presona, however, diverge from this conclusion as they, despite producing products not consumed by end users, have put some focus into sales and marketing when making investments and initiatives in digital technologies. Presona uses digital platforms for communication with customers, but also with other stakeholders. The company also has digitalized much of the sales material. It must be stated that Presona in general has a more

developed and mature view of digital technologies and their value to the business, and has taken initiatives within internal processes and the product as well, besides sales and marketing. Presona has a more clear focus on digitalization across the entire organization in a way that the other case companies does not. Kane et al. (2015) stated that what separates the more digitally mature companies from the less mature ones is that they understand and have realized that digitalization is changing the entire business and that they actively work with the change. This corresponds well with the case with Presona. Further, the focus on sales and marketing might be partly derived from the highly competitive situation among Presona's competitors, in contrast to for instance GLF and Alufluor that rely on long term contracts and well established customers to a larger degree.

5.2.6 The Term Digitalization

None of the case companies use the term digitalization internally for any purpose apart from Saturnus, even though they all, to varying degrees and in different applications, use digital technologies. The case companies do not make a distinction between investments and initiatives within digital technologies and non-digital technologies, but generally make prioritizations and investments if they are in accordance with the overall strategy. Such strategies could either be cost leadership or quality focus. Increasing the level of digitalization or digital maturity per se is thus never the goal, but digital technologies are rather viewed as one among several tools or paths for reaching the company's goals and objectives.

It can thus be concluded that there is a slight discrepancy in the usage of the term digitalization from a management theory and policy perspective in comparison with how the term is used, or not used, in practice by the case companies. The case companies would probably not deem themselves as digitalized or as working with digitalization as the term itself is not used, but when actually analyzing their progress, it is found that they are utilizing digital technologies and tools in practice.

5.2.7 Summary of the Factors and Drivers

The five factors described in detail above are, as previously stated, affecting how the case companies are making prioritizations when taking initiatives and making investments concerning digital technologies but also motivating why the case companies lack digital strategies and how they are affected by digitalization. The five factors are; *the size of the company*, *complexity of the product and production process*, *composition of the value chain*, *type of product and sales process* and *the term digitalization*. The five factors are highly intertwined, and for instance the size of the company to some extent limits how complex the companies' production methods can be and how many products a company practically can produce. Similarly, the small size of the case companies naturally make them among the smallest actors in their respective value chains making them dependant on other actors' digitalization initiatives. Focusing on being cost efficient in a small manufacturing company often means investments in the production department or production facilities which in many cases explains the prioritizations of the companies' digital investments.

Thus, it can be concluded that the five factors are interlinked and all have an impact on how the companies are affected by and work with digitalization. They are thus also affecting and

could be potential explanations to why the companies do not work with digital strategies, even though they utilize digital technologies to a certain degree. In extension, the factors are therefore also impacting the companies' level of strategic alignment.

5.3 Analysis of the Theoretical Framework

The main theoretical framework used for the analysis in this project was the Strategic Alignment Model. It was a framework identified during the literature review when searching for models that would fit the purpose of the project, and was never used or known by the authors before the start of the project.

The model was of good use in the project enabling an answer to the second part of the purpose; alignment between strategies. It was the only model found that actually attempted to investigate and answer the exact subject and purpose that was the intention of the thesis. It was several scholars who had built on the original model, and attempts had been made to make it usable in practice instead of only being a theoretical model. The developments of the model had resulted in the six criteria that were used in the investigation of this study. The criteria were found useful when operationalizing the theoretical framework into the questionnaire used in the study. The model helped when specifying areas to investigate which were relevant when looking at the level of alignment. The questionnaire presented by Gutierrez and Serrano was also helpful and an inspiration in the work of creating the study's questionnaire.

However, there are several identified weaknesses and problems with the use of the model in this study. As mentioned shortly before, the model is originally meant to investigate the level of alignment between an IT strategy and the overall business strategy and not the alignment between a digital strategy and the overall business strategy. This proved to be a problem. The reason is that the model is proposed to measure the level of alignment between an IT department and the business function of a company, in reality between the two executives responsible for the two departments. Most often, companies have a specific IT department and an executive responsible for the department and its strategies, but this does not seem to apply in the same way to questions regarding digitalization. Digital strategies crosses multiple departments and the external borders of the firm, compared to IT strategies that most often only include questions regarding infrastructure. In theory, it was proposed for companies to have a digital strategy and thus probably a responsible executive for the strategy. The initial intention of the project was to investigate the alignment between this person and the business executive. However, in reality, the companies were not organized and did not work according to what theory suggested which made it impossible to use the model in the way it was proposed.

Another identified problem with the model, which to some extent is connected to the problem mentioned above, is that the framework mainly is adapted for large companies. Gutierrez and Serrano made attempts to adjust the model for SMEs, but the authors of this thesis still found the model hard to apply for smaller organizations. The reason for this could be that smaller organizations are not divided in departments in the same way that larger firms are, and do not have as many business executives and as formalized strategy processes. It proved to be impossible to correctly use the model in practice since the small firms that were investigated in the study in most cases did not have a digital strategy and an executive responsible for the strategy. If larger firms had been investigated, which most often have a need of clearer roles,

departments and strategies, the model might have been better suited to use. Larger firms might in fact have digital strategies and a responsible person for digitalization so alignment between this person and the business executive could be measured, but this is something that cannot be told from the result of this study.

The authors found it hard to fully comprehend what was demanded of the companies to perform at the five different maturity levels which made it difficult to rate and assess the companies in a correct way according to the framework. Also, the six criteria were sometimes difficult to understand and clearly distinguish from each other. Even though the criteria were of good use to get inspiration for areas to investigate, the authors found some of them to be closely related and to sometimes overlap. That made it hard to determine which questions that were related to which criteria.

The conclusion of this is that the model was found to be difficult to understand and to use in practice, especially in the case of this study where small companies were investigated. This resulted in the fact that the model was not used in the exact way that is proposed in theory. The analysis of strategic alignment in this study is rather an attempt to show if, and in that case how, companies work with communication, measurements, governance, partnership, architecture and skills regarding digital technologies and digital strategies within their firms, and not between two different functions, which actually is the intention of the model.

6 Conclusions

This chapter summarizes and concludes the results of the study and aims to satisfy and answer the purpose of the thesis.

The purpose of this study can be divided into two major objectives; to describe and analyze the existence of digital strategies for Swedish manufacturing SMEs as well as analyzing the alignment between the digital strategies and the overall business strategies at those companies.

The research during the project has shown that the investigated companies are not discussing digitalization to a large extent internally and are not explicitly working with digital strategies, with the exception of Saturnus' digital marketing strategy. The answer to the first objective of the purpose is therefore that digital strategies do not exist at these selected companies, at least not digital strategies covering the entire organizations. Instead of having digital strategies separated from the overall business strategies, the case companies generally see investments and decisions regarding digital technologies as part of their overall business strategies and as support in achieving their overall strategic goals.

When analyzing why the companies generally had a low focus on digitalization and did not work with explicit digital strategies, multiple factors and drivers were identified as potential reasons. These factors were; the size of the company, the complexity of the product and production process, the composition of the value chain, the type of product and sales process and the use of the term digitalization. The factors are, besides trying to explain why the companies are not working with digital strategies, also describing how the companies are affected by digitalization and which areas the companies have chosen to focus on in their digital investments, and why.

The analysis of the level of strategic alignment was made by using the Strategic Alignment Maturity Model for each of the case companies to give an answer to the second objective of the purpose. The result of the assessment shows that the investigated companies generally have a low level of strategic alignment, slightly above level 2 according to the theoretical model, which corresponds well with the presented theory.

If companies are not using the term digitalization internally, and do not have formulated digital strategies, as was the case in this study, it is easy to say that they are not digitalized and thus also have a low level of strategic alignment. However, the case companies are using digital technologies to varying degrees in their respective organizations, and are making decisions when investing in them in line with their overall business strategies, implying a certain integration or alignment between digitally related decisions and overall business strategy. When discussing digital maturity for manufacturing SMEs in theory, it is important to understand how the digital technologies are viewed, discussed and practically used by these companies. To conclude; if the companies are using currently sufficient digital technologies for their respective organizations and invest in them in accordance with their overall business strategies, do they have a high level of strategic alignment and are digitalized? According to the framework used, the answer is no, but in practice, the answer might be yes.

7 Reflections

This chapter aims to present the authors' reflections on the study. Firstly, reflections on the results and conclusions drawn from the study are presented. Secondly, the contributions to academia, the participating case companies and Tillväxtanalys are described. The chapter lastly concludes the report by elaborating on ideas for further studies.

7.1 Reflection on the Results and Conclusions of the Study

It is important to be aware of that this project was done as a narrow study with a limited number of companies and a short time frame, making it impossible without further studies to state if the results and conclusions of this study would be the same for the entire industry. Although the case companies all are SMEs within the manufacturing industry, it is therefore academically unfair to draw strict conclusions from such a small number of companies, as the variation within the group is large in terms of what products they produce, their market share and what markets they are present in, how their competitive situation is and the companies' overall business strategies among a great number of other factors.

Also, as stated earlier in the report, the theoretical framework was difficult to use in practice and was not used in the exact way as the theory proposes. This was because the framework used in this project originally was adapted to analyzing another purpose and was considered quite inflexible in the adaptation to the purpose of this study. The result of the strategic alignment assessment is therefore considered to be rough. Due to the fact that the framework was not used as proposed, as well as since only a small number of companies were studied, the general results and conclusions of this thesis should be viewed only as indications.

7.2 Contribution of the Thesis

To *academia* this thesis can contribute with further insights regarding the concept of strategic alignment and possible areas of improvement for development of the theoretical models and concepts. These insights can be used in order to better adopt the models for analyzing companies similar to the case companies in the study, as well as for assessing strategic alignment for digital strategies rather than IT strategies as originally intended in the models.

For the six contributing *case companies* the thesis can give insights and information about how similar companies work with digitalization and digital strategies, and how prioritizations are done within those areas. Further it can inform and educate about the academic research within digitalization, digital strategies and strategic alignment.

For *Tillväxtanalys*, the thesis contributes with interesting findings regarding the digitalization of SMEs in the manufacturing industry, a combination of a research question and industry sector which is fairly unexplored in Sweden. It is also, as stated previously, of great interest as both SMEs generally and the manufacturing industry lags behind in digitalization and digital maturity. Thus, the thesis can give insights and ideas for further research and potential policy discussion.

7.3 Further Research

This study focuses on investigating the existence of digital strategies and their alignment with overall business strategies for SMEs in the manufacturing industry. However, the companies included in the study are mostly small firms, with the maximum number of employees being 64. In practice, SMEs range up to 250 employees. It would be interesting to perform a similar analysis including companies in the higher region of the spectrum to see if similar results would be achieved. The purpose of the study was to investigate both small and medium sized firms, but in fact it is mostly small companies that so far has been investigated. To fully satisfy the purpose, companies with up to 250 employees should be investigated, and is thus proposed for further studies.

It would also be interesting to investigate even larger firms, with more than 250 employees, in a similar study. As stated in section 5.3, the framework used in the study might be better suited for larger firms since they might be in greater need of using digital strategies and thereby have a more formalized department and an executive responsible for this. The result of this study was that the theoretical framework was not well suited to use in practice for small firms, but this might not be the case for larger firms. As of now, this is only assumptions by the authors, and is in need of investigating further.

This project was only built on qualitative research from interviews with only one executive from the participating firms, with one exception. To include a larger number of people from the investigated companies would be interesting to get a broader perspective in the matter and to see if the results would be similar or differ from the results received in the study. It would also be interesting to complement the project with a larger study, including a larger number of companies, to be able to draw more general conclusions about the segment and the industry. Also, a similar investigation of other industries would be interesting to be able to compare the results of this study. Further, it would be interesting to complement the qualitative study with more quantitative data, for example if strategic alignment has an impact on the actual performance such as turnover and financial results of the companies.

Finally, a main area for further research would be to adapt the theoretical models to better suit smaller firms and to better suit the purpose of investigating digital strategies, and not IT strategies. This could be done by taking the identified problems with the model from this study into account. The authors suggest that it should be investigated if the six criteria in the Strategic Alignment Maturity Model are all still relevant, if some of them could be aggregated or completely removed, or if new criteria should be added. It should also be adapted so it does not only focus on the alignment between two departments or executives, but strictly between the strategies, since it could be the same executive being responsible for both strategies. To be able to create a model adapted to digital strategies, it is first and foremost important to investigate what actually defines a digital strategy in practice, how they take shape in organizations and how they should be measured and analyzed, which is thus also proposed for further studies.

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List of Interviews

Anders Öringe, CEO at Ifö Electric, interview 27th of March 2017

Edward Liepe, CEO at Saturnus, interview 28th of March 2017

Göran Karlsson, CEO at Alufluor, interview 28th of March 2017

Johan Wester, CEO at GLF, interview 15th of March 2017

Lennart Svensson, CEO at Gyllsjö, interview 21st of March 2017

Louise Ahlander, Product Manager at Saturnus, interview 28th of March 2017

Stefan Ekström, CEO at Presona, interview 4th of April 2017

Appendices

Appendix 1 - Interview guide: Digitalization and Strategy

Inledning

a) Kort presentation av oss, projektet och intervjuns formalia
b) Är det okej att vi spelar in intervjun?

Strategi och organisation

1. Organisation
a) Kan du berätta kort om er verksamhet samt din roll i företaget? På vilken nivå i företaget befinner sig din roll?
b) Hur många anställda har företaget?
c) Vad är er omsättning?
d) Kan du beskriva er organisationsstruktur? Kan vi få tillgång till en organisationskarta?
e) Vilka funktioner är representerade i ledningsgruppen?

2. Strategi
a) Vem är ansvarig för företagets affärsstrategi?
b) På hur många/vilka nivåer i företaget bedrivs strategiarbete?
c) Kan vi få tillgång till strategiska styrdokument för att komplettera intervjun?

3. Digitalisering / Digital Strategi
a) Hur påverkar digitaliseringen ert företag? (ex. påverkan på affärsmodell, konkurrenssituation, marknadspositionering, lönsamhet och tillväxt etc)
b) Hur arbetar ni med att "följa med" i digitaliseringstrenden?
c) Vad har ni valt att prioritera/fokusera på? (Vilka processer/delar i organisationen/affärsområden/teknologier etc?)
d) Vilka fördelar, möjligheter och potential finns det för ert företag med en ökad digitalisering?
e) Vilka nackdelar, svårigheter och risker finns det för ert företag med ökad digitalisering? Var i organisationen finns dessa?
f) Har ni en uttalad digital strategi i företaget?
   i. Vem i organisationen är ansvarig för digitaliseringsfrågor och/eller digital strategi?
   ii. Vad är målet/visionen med er digitala strategi?
   iii. Är den digitala strategin kopplad till den övergripande affärsstrategin? Hur? Exemplifiera!

Strategic alignment

1. Infrastruktur och teknik
a) Har ni digitala teknologier för följande funktioner inom organisationen?

i. Kommunikation och intern administration, ex mailklienter eller molntjänster
ii. Ekonomi och finans, ex bokföring och fakturering
iii. Hantering av leverantörer, logistik och distribution
iv. Lager och orderhantering
v. Produktion, ex automatisering och robotar
vi. Hantering av kundinformation, ex CRM-system
vii. Marknadsföring, branding och kundkontakt, ex sociala medier
viii. Kundservice, ex chattfunktion på hemsida
ix. Försäljning, ex webshop
x. Annat

b) Har ni ett system som har flera av funktionerna ovan?
c) Hur används de olika systemen och hur väl integrerade är de?

2. Kompetenser och personal
a) Har de anställda tillräckliga tekniska kompetenser för att använda systemen ovan?
b) Hur arbetar ni med utbildning av personal vad gäller nya/uppdaterade system?
c) Hur ser de tekniska kunskapsnivåerna ut hos de olika funktionerna på företaget? Varierar kunskapsnivåerna mellan funktioner? Hur påverkar det internkommunikationen?
d) Hur gör ni för att attrahera och bibehålla personal med specifik teknisk/digital kompetens?

3. Kommunikation
a) Hur väl, hur ofta och på vilket sätt kommunicerar ni inom företaget kring ämnet digital teknologi och digitalisering?
b) Hur kommunicerar ni ert digitala arbete utåt mot externa partners?
c) Hur ser samarbeten med externa partners ut kring digitalisering och vilken part tar initiativ till samarbeten? Har ni exempelvis integrerat någon funktion uppåt eller nedåt i värdekedjan?
d) Vad ser ni för fördelar/nackdelar med att integrera vissa funktioner digitalt med externa partners?

4. Partnerskap
a) Hur ser ni på digitala teknologier inom företaget?

5. System för mätning, utvärdering och uppföljning
a) Mäter och utvärderar ni hur digitala teknologier påverkar företaget med avseende på prestation och lönsamhet, och kan du i så fall beskriva hur?
b) Använder ni i så fall specifika mätvärden och mätmetoder för digitala teknologier eller är det samma som för övriga projekt och investeringar?

6. Styrning och ledning
a) På vilken nivå i företaget tas beslut och vilka är inblandade i affärsstrategiska och digitala frågor respektive?
b) Hur ser processen ut när ni tar beslut om vilka delar i organisationen/affärsområden/ teknologier som ska prioriteras för digitalisering?
c) Vad är anledningarna till att ni valt att investera i digitala teknologier?

<u>Avslutning</u>

a) Är det något vi har missat att fråga om eller som du vill lägga till?
b) Är det okej om vi hör av oss vid kompletterande frågor?
c) Önskar du och/eller företaget vara anonyma i den skriftliga slutrapporten?
d) Har du några frågor till oss?

Appendix 2 - Initial Email to Potential Case Companies

Hej NN,

Vi heter Frans Wåhlin och Sofia Karlsson och är studenter vid Lunds Tekniska Högskola och skriver vårt examensarbete i Industriell Ekonomi nu under våren. Vi genomför detta projekt i samarbete med Myndigheten för tillväxtpolitiska utvärderingar och analyser (Tillväxtanalys) och i förlängningen Näringsdepartementet.

Projektet fokuserar på strategic alignment, närmare bestämt samspelet mellan digitala strategier och övergripande affärsstrategier. Syftet är att analysera förekomsten av digitala strategier och i så fall graden av integration mellan den digitala strategin och den övergripande affärsstrategin.

Vi ska undersöka det här fenomenet för cirka 5-6 små och medelstora skånska företag i tillverkningsindustrin vilket är anledningen till att vi kontaktar dig och företag X. Mer konkret vill vi därför genomföra intervjuer med de beslutsfattare som ansvarar för den övergripande affärsstrategin och eventuella digitala- och/eller IT-strategier, alltså VD och CIO/IT-chef/verksamhetsutvecklingschef eller motsvarande. Vi fick ert namn via Sydsvenska Handelskammaren och tycker att ni verkar intressanta för vår studie.

Examensarbetet löper under vårterminen och ska presenteras i början på juni. Fasen då vi samlar in den empiriska datan från fallföretagen planerar vi att genomföra under mars och början på april månad, vilket alltså är tidsramen för när intervjuerna ska ske.

Examensarbetet bidrar till en kunskapsutveckling inom området som är efterfrågad av t.ex. Näringsdepartementet och statliga finansiärer av digitaliseringsfrämjande. Ni kommer naturligtvis få tillgång resultatet av studien och återkoppling av oss.

Om det låter intressant för dig och företag X att delta i studien, får du gärna återkomma via mail eller per telefon på numren nedan så kan vi berätta mer om projektet, intervjuerna och svara på eventuella frågor.

Vi ser fram emot att höra av dig!

Vänliga hälsningar,
Frans Wåhlin & Sofia Karlsson