TAMPEREEN TEKNILLINEN YLIOPISTO

MYLLYKANGAS, MIKKO

THE ROLE OF GUIDED SELLING IN THE PURCHASING BEHAVIOR OF INVESTMENT GOODS

Master's Thesis

Examiners: Professor Jussi Heikkilä and Lecturer Tommi Mahlamäki
Examiners on topic approved by the Faculty council of Faculty of Business and built environment on 4th of November, 2015.

ABSTRACT

The subject of value co-creation has been researched in the last decade more than ever before. All companies have access to the same production methods globally, thus the importance of delivered value and customer experience is increasingly important. The ability to offer customized products at the same cost and delivery rate, as generic ones, is a must for staying competitive in the current business environment. This study focused on the potential of guided selling in investment goods sales and increasing understanding of the concept in Finnish B2B-markets.

This study was conducted as a qualitative single-case study, which focused on the sourcing activities and digitalization in the case company's customers' organizations. The data gathering was performed as five semi-structured interviews in order to allow themes that the researcher hadn't thought of, to arise in the interviews. The literature review aimed at understanding of how digitalization has affected B2B-sales and a suggested framework of guided selling. This review was then used to create the interview questions, which had three main themes: purchasing behavior, digitalization in business activities and sales configurators.

Based on the conducted research, it can be said that the construction industry is very conservative and the level of digitalization is quite low. The purchasing activities are very reactive due to difficulties in forecasting demand and possible customer needs. Thus the rational purchasing models cannot be applied in real-life context, yet a "muddling-through" model by Makkonen et al. (2012), which combined practical and rational approaches, is identifiable in the industry. A digital breakthrough was seen as coming, yet the direction of it was unclear and divided. The sales configurator was seen as having relatively little potential in the classical sense of a configurator at the moment, as order automation tool was the most common potential use for it. The academic field benefitted of this study by gaining a framework suggestion of the concept and confirmation that sourcing activities do not follow any rational models but muddle-through the process. The case company gained information on the perceived potential of a configurator in the Finnish markets and guidelines on implementation and characteristics.

TIIVISTELMÄ

Arvon yhdessä luomista on tutkittu viimeisen vuosikymmenen aikana enemmän kuin koskaan. Kaikilla yrityksillä on pääsy samoihin tuotantometodologioihin, minkä seurauksena toimitetun arvon ja asiakaskokemuksen merkitys on entistä tärkeämpää. Kyky tarjota kustomoituja tuotteita samoilla kustannus- ja toimitustasoilla on elinehto kilpailukyvyn säilyttämiseksi. Tämä tutkimus keskittyy ohjatun myynnin potentiaaliin investointihyödykkeiden myynnissä sekä kasvattamaan ymmärrystä konseptista suomalaisilla B2B-markkinoilla.

Tutkimus toteutettiin kvalitatiivisena tapaustutkimuksena, joka fokusoitui hankinta-aktiviteetteihin sekä digitalisaatioon kohdeyrityksen asiakasorganisaatioissa. Data kerättiin viidessä semi-strukturoidussa haastattelussa vapaamuotoisen keskustelun mahdollistamiseksi. Kirjallisuuskatsauksen tavoitteena oli hahmottaa, kuinka digitalisaatio on vaikuttanut B2B-myyntiin sekä ehdottaa viitekehystä ohjatulle myynnille. Katsauksen perusteella luotiin haastattelurunko, jossa oli kolme teemaa: ostokäyttäytyminen, digitalisaatio liiketoiminnassa sekä myyntikonfiguraattorit.

Tutkimuksessa saatiin selville, että rakennustoimiala on erittäin konservatiivinen ja digitalisaation aste matala. Hankinta-aktiviteetit ovat reaktiivisia toimialan vaikean ennustettavuuden vuoksi. Tämän vuoksi rationaalisia ostokäyttäytymismalleja ei voida soveltaa reaalimaailmassa, mutta Makkonen et alin (2012) esittelemä "muddling-through" malli on tunnistettavissa toimialan käytöksessä. Digitaalinen vallankumous havaittiin olevan tulossa, mutta sen tarkempi suuntaus oli epäselvä ja mielipiteet hajautuneet. Myyntikonfiguraattorilla koettiin olevan suhteellisen matala potentiaali konfiguraattorin perinteisen käyttötarkoituksen mielessä, sillä tilausten automatisointityökalu koettiin suurimmaksi hyödyksi. Akateeminen yleisö hyötyi tutkimuksesta saamalla viitekehysehdotuksen tarkastellusta konseptista sekä varmistuksen, että hankinta-aktiviteetit eivät reaalimaailmassa seuraa rationaalisia malleja. Tutkimus antoi kohdeyritykselle informaatiota konfiguraattorin havaitusta potentiaalista kotimaisilla markkinoilla sekä suuntaviivat implementaatiolla ja toivotuille konfiguraattorin ominaisuuksille.

PREFACE

Writing this thesis has been a rollercoaster. It has taught me a lot of things, strengthened some that I already knew and full-on destroyed some I thought I knew. I can only hope that the things I've learned during this project will aid me in my future, whatever it may hold for me.

Multiple people were a part of this study, some most likely to the extent of annoyance. At first I'd like to thank my official examiners professor Jussi Heikkilä and Tommi Mahlamäki for the work they've done to help me in this study, as well lecturer Mika Ojala and professor Olavi Uusitalo for their inputs to this thesis. Furthermore, I'd like to thank Jarkko Ovaska from Scanclimber for the possibility to conduct a research in their context and Iida for giving me the well-needed kick-in-the-butt every now and then.

Finally, I'd like to dedicate this thesis to my grandma Kirsti Stenroos, who has been waiting for my graduation more than anyone else, including me.

"*Made it, Ma! Top of the world!*" – White Heat, 1949

Mikko Myllykangas

Tampere, 19.11.2015

TABLE OF CONTENTS

LIST OF ABBREVIATIONS

B2B	Business-to-business
CoPS	Complex products and systems
CRM	Customer relationship management
EDI	Electronic data interchange
ERP	Enterprise resource planning
GUI	Graphical user interface
ICT	Information and communication technology
IS	Integrated solution
IT	Information technology
PDM	Product data management
SFA	Sales force automation

1. INTRODUCTION

1.1. Background to the subject

The playing field of B2B markets is ever-changing due to multiple reasons, such as globalization; increasing importance of customer experience; digitalization and aspirations to find new ways of creating business value; and the goal of reaching better results with fewer resources. The traditional means of production are available for basically every company in the world, thus the differences between them are created by the value they can deliver to customers during the entire relationship (Kodama, 2007).

The subject of value co-creation for both companies and customers has been researched quite a lot (e.g. Grönroos, 2008; Payne et al., 2008) in the last decade. Customers can take part in the process as early as when designing an offering, so they can give a direct input on the planning and delivery of an offering (Auh et al., 2007). Co-participation leads directly to improvements in the quality of service (Ngo & O'Cass, 2013), which in turn leads to a better image of the offering and thus to increased business with the customers.

The base premise of creating better value to a customer is to know their needs. The customer touchpoints have multiplied, thus gathering information is easier, but creating a complete picture of all relevant information of the customer is still difficult. The sales function usually tries to identify customer needs and create solutions to meet these demands, but the B2B sourcing functions are increasingly well educated in their field (Adamson et al., 2012). This leads to a situation where most of the B2B purchasing process takes place before an initial contact to the supplying company (ibid.).

Industrial capital goods, from now on investment goods, are technically complex and expensive entities that produce revenue for multiple years (Sievänen, 2004). Usually their purchases are conducted directly from the manufacturer, and the purchasing process includes many individuals from technical experts to management. Due to the complex nature of the goods, the process is time consuming and technical specification demands a lot of time and care. Regarding investment goods, personal selling has traditionally been the "way to go" (Patti, 1977), yet it requires more resources than sales functions that integrate digital tools in their work.

Digitally guided selling is a way of operating that helps companies to offer better value and at the same time being resource efficient. It has the potential to create new business value to both the supplier and customer by increasing customer participation and expe-

rience by allowing them to specify their needs before the initial contact to the sales function, drastically reducing the quotation process (Palonen, 2003).
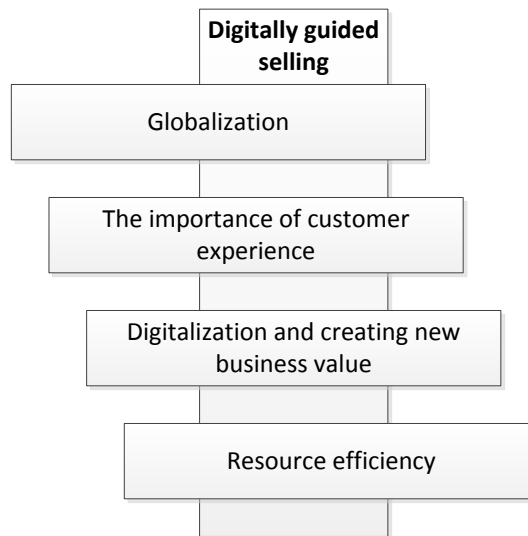
Figure 1.1.1 – Summary of the drivers of guided selling

Businesses are using more and more digital tools as means to create new value in B2B-markets. At the same time, customers are taking a more active role in the purchasing process, often doing most of the work before an initial contact with a supplier (Adamson et al., 2012). Guided selling is a relatively little researched subject in the academic field, which lacks a consensus of the definition of the concept. Yet, it has been successfully used in B2C-field and there are multiple B2B-applications already in use (e.g. Tacton, 2014).

These factors create a need for a more thorough inspection of the matter in the B2B-context, as it has the potential to change the entire way of operation in the field of investment goods. Tiihonen et al. (2013) argue that configurators allow companies to adapt customizable products for individual customers efficiently, thus supporting Abbasi et al.'s (2013) claim that the ability to offer customized products at the same cost and delivery rate as generic ones, is a must to being competitive in the current business environment.

1.2. Research setting

This study is conducted as a part of the Tekes Huippuostajat Research Programme called Devenio. The aim of the Devenio-project is to gain knowledge in the fields of guided selling and purchasing in B2B-context in order to develop their customer relationships and thus create better value to them through a better customer experience. There are five Finnish B2B-companies taking part in the project in addition to the Tampere University of Technology, of which four are manufacturing companies and one is

an IT-company. This study focuses on one of the four manufacturing companies and their perceived challenges regarding the purchasing behavior of their customers.

1.3. Objectives and research questions

Based on the project guidelines and conducted background work, the main research question is:

- *What is the potential of guided selling in investment goods sales?*

In order to answer the research question, the following questions need to be addressed:

- *How digitalization has affected sales management in B2B-context?*
- *What is guided selling and what e-commerce tools does it consist of?*

Based on the two questions, further sub questions can be created with the goal of gaining understanding of how the focal industry conducts its sourcing activities and how it mirrors to the created framework:

- *How do the focal companies arrange their sourcing activities and what are these activities?*
- *What is the level of digitalization in the industry, what does its evolvement look and what are the attitudes towards guided selling in their context?*
- *How guided selling should be implemented in regard to the current sourcing activities?*

The research questions lead to the objective of this study: increasing understanding of digitally guided selling in Finnish B2B markets. The first objective is to create a framework, which illustrates the concept of digitally guided selling, thus making a contribution in the academic field. The other objectives are more case company related. The goal is to understand how the case company's customers conduct their sourcing activities and by which criteria. These results are used to understand the prerequisites of guided selling and how it should be implemented to provide value, i.e. in what ways guided selling has potential to provide value to the customers and how it should be implemented in practice.

1.4. Research and data analysis methodologies

This study was conducted as a qualitative single-case study. This is due to the nature of research questions and topic itself. A qualitative study allows one to perceive the attitudes towards the phenomenon called as guided selling, in addition to providing a better understanding of processes than a quantitative method (Bryman & Bell, 2011).

A case study can be comprehended in multiple ways. Saunders et al. (2009) defines it as a strategy, which uses different sources of evidence in the empirical investigation of a phenomenon in real-life context. Whereas Yin (2009) argues that it is an empirical inquire, which "investigates a contemporary phenomenon in depth and within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident". As a research method, it allows one to perceive meaningful and holistic characteristics of real-life events. (Yin, 2009)

A qualitative case study methodology was chosen for two reasons: 1) Guided selling is clearly a contemporary phenomenon and 2) it allows one to access information through interviews, but not allowing one to manipulate relevant behaviors, which fulfill the requirements of Yin (2009) of when a case study method is possible to be used. Saunders et al. (2009) argue that generalizing based on a single-case study isn't "advisable", it poses no problem in this context, as the aim of the study is to increase understanding in the context of the case company, and not generalize it extensively further.

The data was gathered in a total of five semi-structured interviews with four customer companies of the case company. The interviewed companies were chosen from the case company's customer pool, from the four customer companies, five people were interviewed (table 5.1.). All interviews were carried out face-to-face by me and a researcher colleague, with the exception of the last one, which was conducted one-on-one. The interviewees were chosen in a way that those were the people responsible for sourcing and procuring of the case companies offering field, thus ensuring that the information would be as trustworthy as possible.

Table 1.4.1. – A summary of the interviews

Company	Title	Date of the interview
A	Sourcing Manager	8.10.
B	Chief of Operations	12.10.
C	Unit Manager	12.10.
D	Product Manager A	16.10.
	Product Manager B	30.10.

In regard to the data analysis of the empirical research, companies A and D are defined as "large companies", with domestic turnovers exceeding 100 million Euros. Companies B and C are defined as "small and medium enterprises", from now on SMEs, as their turnovers are less than 100 million Euros. It is also to note that one of the companies (company C), differs from the rest in their business model. Their objective is to work as a supporting function within the corporation and not compete in the same sense as companies A, B and D.

The interviews were carried out as semi-structured interviews, as Saunders et al. (2009) argues that they are sometimes better than structured ones, as they allow the use of open-ended and complex questions. The interview type choice was obvious, as it also allows the interviewees to use their own lingo and ideas, without restricting them too much (Saunders et al., 2009). This might lead to a discussion of topics that the interviewers hadn't thought of, leading to improvements in the interview questionnaire.

The interviews generally took ca. 60-70 minutes and handled three main themes: the interviewee company's sourcing processes, digitalization in their business and sales configurators. The themes were selected based on the theoretical part of this study, as well as the case company's requests. The interviews were recorded and sent to a transcription professional, who transcribed them in a written form, thus enabling better possibilities for analyzing the themes of the interviews.

The gathered data was analyzed with a combination of deductive and inductive approaches. The deductive approach uses existing information of the subject to "organize and direct" the analysis, whereas the inductive approach first gathers data and then perceives what can be noticed (Saunders et al., 2009). The questions of the interviews were based on the theoretical framework created in earlier chapters and case company's requested themes. The gathered data is partly mirrored to the theoretical framework, in order to perceive whether guided selling would provide additional value, and what characteristics it should have, thus creating the dual approach.

1.5. Structure

The structure of this thesis is following: The chapter 2 addresses the purchasing behavior of investment goods in B2B-context from a theoretical standpoint, before chapter 3 and introduction to the concept of electronic commerce. These chapters are used as background towards the chapter 4, which covers B2B sales management and the effect of digitalization to B2B-sales. The chapter introduces a suggested framework guided selling and the electronic components that it is built of.

After the literature review, the case company, and research and analysis methodologies are addressed in chapter 5, before results and discussion of the findings. Finally, the study ends after chapter 6 and its discussion of main findings in regard to research questions, academic contributions, implications and limitations of the study.

2. PURCHASING BEHAVIOR OF INVESTMENT GOODS

2.1. Purchasing management in B2B-markets

One of the most used definitions of purchasing management is by purchasing management pioneer Arjan J. van Weele (2010): "Purchasing management refers to all activities necessary to manage supplier relationships. It is focused on structuring and continuously improving purchasing process within the organization and its suppliers." (Weele, 2010)

According to Iloranta & Pajunen-Muhonen (2012), after joining to the European Union, the typical market size of a Finnish company has grown from 5 million to almost 500 million persons. The continuous development of communication tools will eventually connect the whole world to one market, thus complicating purchasing networks even more. High complexity enables high efficiency and quick development, but also increases risks, even creating ones that cannot be controlled. (Iloranta & Pajunen-Muhonen, 2012)

Kivistö et al. (2005) argues that according to the Finnish monetary analysis of public companies, on average 80 percent of a company's cost structure consists of purchasing function activities. Purchasing activities are more complex than ever due to the developments they've faced. Iloranta & Pajunen-Muhonen (2012) claim that purchasing management has developed from a compulsory function to one of the main functions of a modern company, creating a major advantage over the market. One take on the matter is by Miocevic (2011) who argues that companies shouldn't consider purchasing functions as cost reduction tools, but as cost reducers that do not exclude aspects of an offering that might be valuable to their customers.

In purchasing management, aiming for the lowest transaction price isn't always the most appropriate objective (Hunter et al., 2004; Miocevic, 2011). In some instances, the lowest price is the best solution, whereas in others it's better to aim to highest value generated, regardless of a higher transaction cost. Thus, Colvin (2000) argues that it is critical for buyers to distinguish price driven situations and situations where a supplier generates value that cannot be assessed by emphasizing in mere price.

One of the most famous portfolio models is Kraljic's (1983) purchasing portfolio approach. According to the model (figure 2.1.1.), the firm's supply strategy depends on

two variables: profit impact and supply risk. Based on the variables, four categories can be created: strategic (high profit impact, high supply risk); bottleneck (low profit impact, high supply risk); leverage (high profit impact, low impact risk) and noncritical items (low profit impact, low supply risk). Each of the categories requires a "distinctive purchasing approach, whose complexity is in proportion to the strategical implications". (Kraljic, 1983)
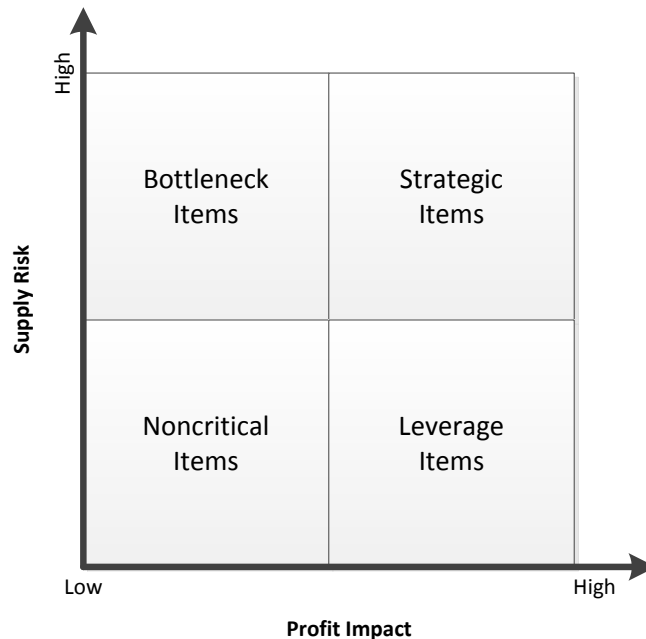
Figure 2.1.1. – Purchasing portfolio approach (Adapted from Kraljic, 1983)

Miocevic (2011) supports the model of approaching different purchase decisions from different angles. He argues how purchasing managers shouldn't concentrate only on purchasing efficiency, while it undeniably leads to higher financial performance, in most cases it doesn't support the value dissemination in the entire supply chain. Efficiency mustn't be overlooked though, as inefficient purchasing has indirect effects that might cause customers to leave the company's offering and thus endanger the company's market position. (Miocevic, 2011)

The Kraljic (1983) model is just one of the possible purchasing management approaches, but it catches the essence of addressing every purchase decision differently based on the nature of it. It helps increase the effectiveness that Miocevic (2011) emphasizes instead of efficiency. For an organization to optimize purchasing effectiveness, a value-oriented approach is needed within the process. Efficiency is easier to optimize than effectiveness, due to the lower degree of complexity. Effectiveness affects the supply chain upstream and downstream and includes managers from various business functions, instead of just purchasing managers. Miocevic (2011) argues that the task of pur-

chasing is to strengthen the value stream of a supply chain, by distinction of the differ-ences between efficiency and effectiveness of organizational buying (table 2.1.1.).

***Table 2.1.1.**– Distinction between efficiency and effectiveness in organizational buying Adapted from Miocevic 2011)*

Distinctive dimension	Efficiency	Effectiveness
Chain orientation	Upstream	Upstream and downstream
Core performance element	Economic value from purchasing side	Total added value for ultimate con-sumer
Lateral involvement level	Purchasing mana-gers only	Managers from various business functions
Decision making Nature of exchange	Centralized Transactional	Decentralized Transvectional

2.2.   Organizational purchasing as "muddling-through"

The study of organizational buying behavior got into a strong start in the 1970s and 1980s, but after that is been in a slump (Spekman & Thomas, 2012). The Sheth (1973) model of buying behavior creates a good foundation for further research, yet advance-ments in the field are basically non-existent. Spekman & Thomas (2012) claim, that due to this we aren't prepared to the increased degrees of complexity and dynamism, caused by globalization and technological improvements.

Typically, organizational purchasing decisions are organized through informal groups called "buying centers", whose members are identified by the area of their functional responsibility (Moon & Tikoo, 2002; Sheth, 1973). Miocevic (2011) argues that buying centers can be considered as an "informally organized firm subsystem", which has properties similar to those of a firm, though the latter is naturally a superior system in every way.

The industrial buying process is quite similar, regardless of who defines it. Johnston and Lewin (1996) have seven steps in their process chart, whereas Berthon et al. (1998) have six. Basically the process charts are identical, with the exception that Berthon et al. (1998) combine some of the steps that Johnston and Lewin (1996) set as separate steps (figure 2.2.1.) and Andersen (2001) states that activities prior to supplier selection are called a "pre-relationship phase" for awareness building from a communication point of view.
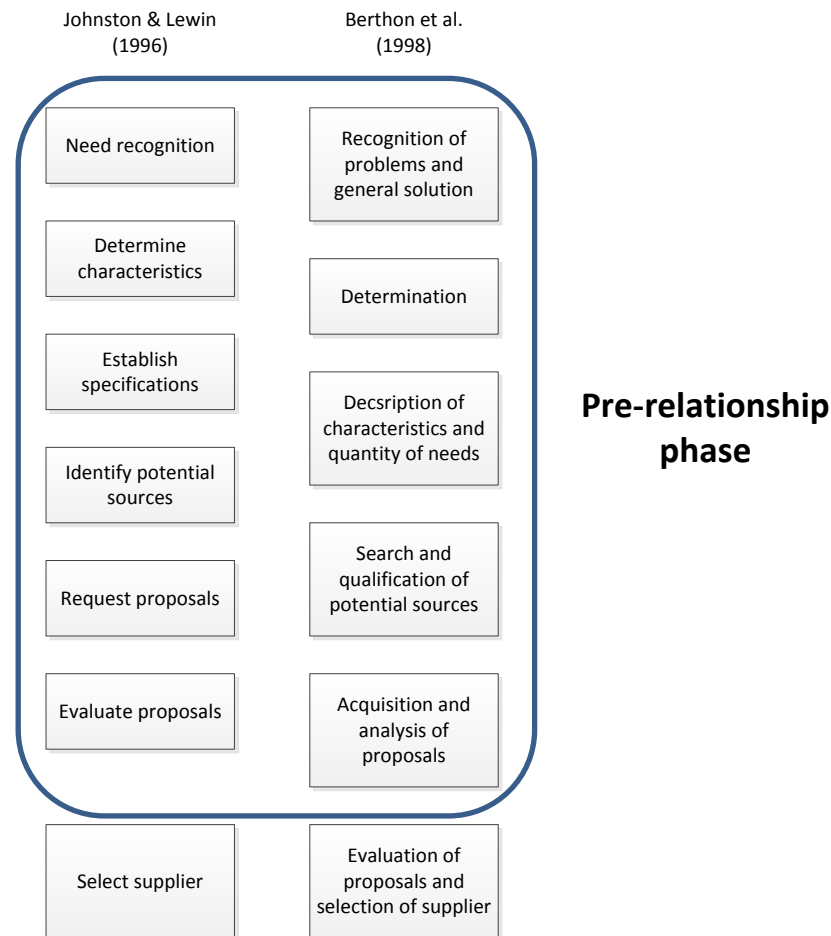
Figure 2.2.1. – *Steps of an industrial buying process (Adapted from Johnston & Lewin, 1996; Berthon et al., 1998)*

Based on their buying process chart, Johnston and Lewin (1996) also illustrate an integrated model for industrial buyer behavior, which has a total of nine components. The model is quite similar to Sheth's (1973), yet both models are based on rationality in the buying decision. Sheth (1973) argues that an objective buying decision is usually based on the prior knowledge and expectations of a buyer, which are also present in Johnston and Lewin's (1996) model as well as environmental and participant(s) characteristics.

Both models are extremely rational, linear and based on a means-end logic, which according to Makkonen et al. (2012) is a problem, as buying processes are very incremental and exploratory, especially in high-commitment situations, which have a high degree of uncertainty. Although rationalist approaches are popular in management literature, they fail to address the matters of uncertainty and complexity that are present in real-life business situations. (Makkonen et al., 2012) This isn't a new notion, as for example Sheth (1973) already addresses that not all business decisions are outcomes of systematic decision-making models, but are influenced by other factors as well.

All buying situations involve steps, similar to processes in figure 2.2.1., yet the way of advancing in the process is which varies. The "muddling-through" model is originally developed by Lindblom (1959), as a response to the problem of following systematic and linear processes in real-life management situations. Makkonen et al. (2012) emphasize that "muddling-through" doesn't suggest that rational models are in fact irrational, but that a higher degree of realism can be taken in to account with "muddling-through" model, while still reaching an attainable level of rational decision-making in complex situations.

Due to the focus of this study being in purchasing of investment goods, which have a high degree of uncertainty and complexity, this study adopts a practice-theory model of "muddling-through", which addresses the factors better than fully rational models. The framework of "muddling-through" has 1) relatively permanent structural elements (on top of the framework); and 2) relatively situational processes and events (at the bottom of the framework) (Giddens, 1984).

The structural elements refer to the attitudes and norms of appropriate organizational buying, which can stem from the macro-environment (culture and government), business networks (strategies and rules regarding relationships) or the company itself (policies). The second construct, relatively situational processes and events, refer to the changing factors that affect the buying process, which can originate from the same sources: macro-environment (changes in laws or regulations), business networks (mergers, conflicts or changes in industry logic) and the company itself (personnel or strategic changes. (Makkonen et al., 2012)

In the central panel of the framework (figure 2.2.2.) adapted from Makkonen et al. (2012), is the "boundedly rational habitus" of each actor of the process, filtering the effects of the two other constructs on the buying process. Habitus, as a term, refers to the internal ability of an actor to determine how the two constructs are perceived, interpreted and acted upon during different steps of the purchasing process. (Makkonen et al., 2012)

Though it is important to notice that the habitus isn't a mechanical function, but a collection of guidelines with which more skilled actors can improvise based on their experience, i.e. habitus generates a strategy for an actor to adjust to the situation (Bourdieu, 1990). In a way, the habitus provides actors with methods to solve novel problems, while conditioning actors to solve known problems with proven methods (Makkonen et al., 2012)
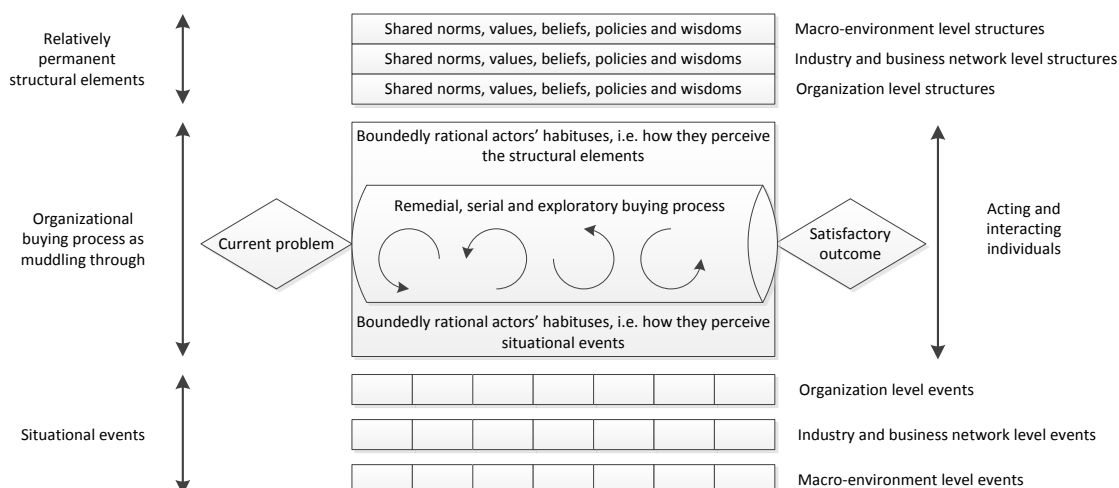
Figure 2.2.2. *– A practice-theory approach for organizational buying as muddling through (Adapted from Makkonen et al. 2012)*

According to Makkonen et al. (2012), their model questions the extent of rationality in organized buying, as rationality isn't only about the means but also about how they are turned into a good-enough end achieving satisfactory outcomes. The model is a good reflection of real-life situations where decision makers use rationality in an attainable level, given the resources at hand on an organizational level. The rational models fail to address the connections of processes to buying processes, while the proposed framework facilitates systematic analysis of "muddling-through" the process of organizational buying and external constructs. (Makkonen et al., 2012)

2.2.1. Purchasing behavior of investment / capital goods

The classification of industrial goods is very unchanged from the 1970's when Patti (1977) categorizes industrial goods and services to six categories: 1) raw materials, 2) accessory materials, 3) capital goods, 4) fabricated materials, 5) components and 6) services and supplies. This thesis focuses on capital goods, also referred to as investment goods that are a category of industrial goods that are used in production of other goods.

Cova and Salle (2007) divide the capital goods further to three more specific categories: 1) capital equipment, 2) complex products and systems (CoPS) and 3) integrated solutions (IS) (figure 2.2.3.). Capital equipment are usually machines of process equipments, whereas complex products and systems (CoPS) are more customized B2B capital goods, such as entire production lines or large IT projects, which have high costs and high degrees of technology and complexity. (Cova & Salle, 2007)

Storbacka et al. (2011) define integrated solutions as deliveries where the supplier has resources or goods that help solve customer specific strategic problems, for example delivering an entire production line, including the operation and maintenance services of

it. This is in line with Suomala et al. (2004) who argue that after-sales are essential in capital goods businesses, as they have the potential to provide income for a long period of time.
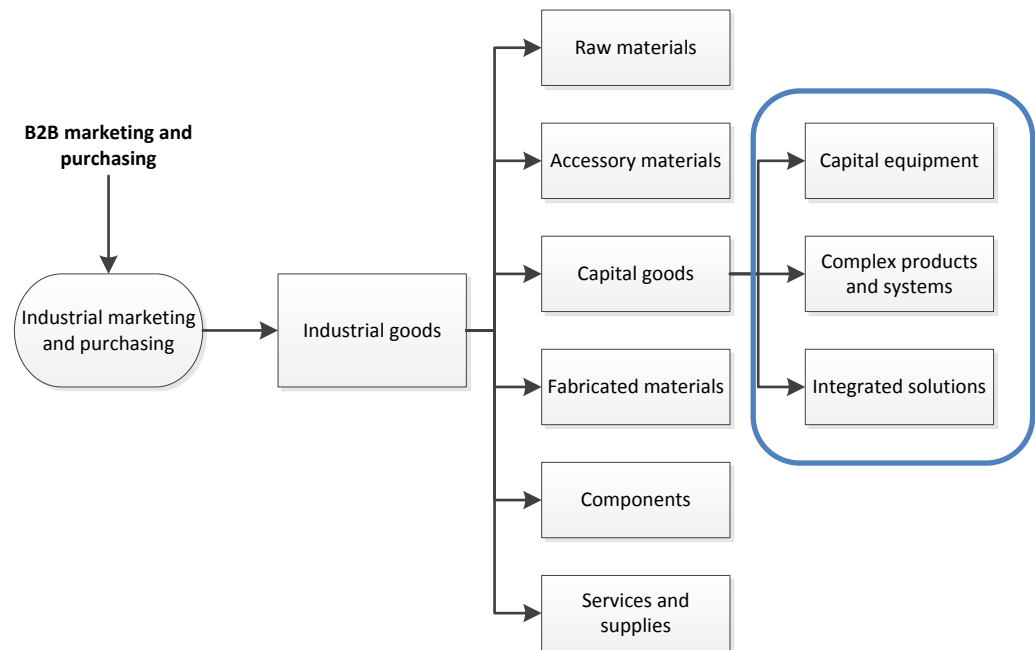
Figure 2.2.3. - *Categories of industrial goods (Adapted from Cova & Salle, 2007)*

Cova and Salle (2007) state that capital goods are mainly fixed assets, e.g. machinery, building etc., which have in common that they are expensive items of very high degree of technical complexity that are typically purchased directly from the manufacturers. This is for the purchaser to have the possibility of including more people from the users to technical experts and top management in the purchasing decision, as investment goods are long-lasting by nature and thus have high risk. From a sales point of view, investment goods can be regarded as projects, as Sievänen (2004) emphasizes the one-of-a-kind production nature of investment goods.

Though, viewing the purchasing of investment goods as projects due to their similar characteristics might be dangerous. Iloranta & Pajunen-Muhonen (2012) argue that investments are a sourcing subcategory that isn't always recognized as sourcing goods. At times, investments' project-like characteristics cause them to be handled without sourcing professionals and contact to the sourcing organization within the firm. This raises the risk that not all competences are utilized in the process. (Iloranta & Pajunen-Muhonen, 2012)

The purchasing process of investment goods follows the same logical path that all purchasing decisions do, the initiation for a purchase if a need that's driven by the demand of the final good (Kotler & Keller, 2006). For investment goods, the driver is usually a

customer's need for a replacement or expansion due to continuous need or long-term planning (Sheth, 1973), or changes in regulations or market needs (Johnson & Bonoma, 1981).

Purchasing decision of investment goods, like other purchasing decision as well, are usually made by buying centers that consist of people with different backgrounds, either inside or outside the firm (Spekman & Thomas, 2012). Hunter et al. (2004) focus on the high risk of capital goods, which causes buyers to "undertake extensive, deliberate choice processes" instead of selecting casual option in order to reduce the risk associated with the decision.

The complexity and high-cost-nature have an effect in the optimal way of handling, but Iloranta & Pajunen-Muhonen (2012) argue that the buying of investment goods are separated from other indirect sourcing activities only by their bigger scale, different way of handling in the accounting and greater attention that it attracts.

2.2.2. Effect of digitalization in B2B purchasing behavior

Traditionally, the involvement of different functions within a company, when determining the purchasing needs is time-consuming, but improvements in technology allow companies to benefit from the advantages of information and communication technologies (ICT). Garrido-Samaniego et al. (2010) argue that ICT changes the way we interact and communicate with each other at various levels, within the organization via intranets or amongst different organizations. The businesses change towards exchanging intangibles, which is problematic from a communication perspective, yet the tangibles are increasingly complex, increasing the amount of information flowing (Aarikka-Stenroos & Makkonen, 2014).

Sheth and Sharma (2005) argue that with the increased use of electronic commerce and advancements in ICT, customers take an increasingly active role in the process, leasing to a concept referred to as "co-creation". Co-creation involves both the customer and seller to act in unison with development work as well as the delivery process. Co-creation lets the customers see efforts translate in the development and delivery of the service (Auh et al., 2007) Sheth and Sharma (2005) also emphasize the importance of value co-creation, as it gives a competitive advantage to a firm and helps deepen the customer relationship from the start, as according to them, the developments will lead to customers seeking partners that "provide co creation opportunities, universal availability, and flexible time schedules".

Claycomb et al. (2005) argue how electronic commerce in general has changed the way of conducting cross-firm transactions, resulting in lower costs and improved supply chain management. Online marketplaces bring together a wide spectrum of customers and sellers, which has eased finding potential suppliers and contacting them with ICT

applications. Also automating repeating transactions raises the efficiency of certain purchasing activities, and removes the time-restrictions that the "offline-era" set. (Claycomb et al., 2005)

In short, digitalization and its possible routes to develop to, allow companies to speed up the purchasing process, regardless of how it is illustrated. Figure 2.2.1 shows two different purchasing process charts, whose steps can be sped up with IT applications, as Adamson et al. (2012) argues how a significant amount of B2B purchasing process can be done before contacting the suppliers. Inter-firm communication is faster with the implosion of IT applications (Garrido-Samaniego et al., 2010) which results in faster problem recognition, need specification and potential supplier search (Claycomb et al., 2005).

Rest of the steps in the process charts can be sped up with the use of IT. Documents and RFQ's can be sent digitally and can be received almost instantly (Hvam et al., 2006), but still require human interaction in some degree. Guided selling is a way of changing the entire pre-relationship phase in a way, which doesn't require for a customer to interact with a salesperson. This increases the degree of co-creation, and allows industrial purchasers to make groundwork in their own pace, not restricted by time or space.

Industrial buyers are more sophisticated than ever and Aarikka-Stenroos and Makkonen (2014) claim that customer references and referrals give critical input in complex buying decision, as they offer neutral judgment and expertise on the matter. The importance of experience-based information is increasingly high in complex buying decision (Aarikka-Stenroos & Makkonen, 2014) and digitalization has eased accessing this form of information with e-commerce applications, such as recommendation technologies and e-marketplaces (e.g. Knijnenburg et al., 2012; Gong et al., 2012; Zhao et al., 2009), increasing the level of autonomy of purchasing organizations.

3. ELECTRONIC COMMERCE IN B2B

3.1. Electronic commerce

E-commerce can roughly be divided into three categories: e-procurement led by buyers, e-distribution led by sellers and e-marketplaces led by third parties (Chang & Wong, 2010). The concept has been widely adopted and has many reported benefits, but also challenges.

Despite the wide usage of web-based and other information systems in B2B, e-commerce lacks a commonly accepted definition in the academic field and as a result, each author uses his or her own definition (Parvinen et al., 2014; Piris et al., 2004) Duffy & Bale (2002) gather different definitions of e-commerce (Table 3.1.1.). It is of note, that all of them agree on the basic notion, that it is about conducting business activities electronically (Piris et al., 2004). In this study, e-commerce is defined as by Claycomb et al. (2005): *"A supply chain innovation that generates cross-firm process integration. It is the use of the World Wide Web to secure the trading of goods, information, and services before, during, and after the sale. It includes electronic data interchange (EDI) and Web- and Internet-based applications".* But it is essential to note that e-commerce refers to the general phenomenon of business exchange, not just parts of it, such as e-marketing, e-purchasing or e-selling.

Table 3.1.1. *– Definitions of e-commerce (Gathered by Duffy & Bale, 2002, ones with an asterisk from primary sources)*

What is e-commerce?	Reference
Electronic commerce covers any form of business or administrative transaction or information exchange that is executed using any information and communications technology (ICT).	UK government's e-center organization, 2002
E-commerce refers to trade that actually takes place over the Internet, usually through a buyer visiting a seller's Web site and making a transaction there	The Economist, 2000
The sharing of business information, maintaining business relationships and conducting business transactions by means of telecommunications networks	Daniel et al., 2000
A supply chain innovation that generates cross-firm process integration. It is the use of the World Wide Web to secure the trading of goods, information, and services before, during, and after the sale. It includes electronic data interchange (EDI) and Web- and Internet-based applications.	*Claycomb et al., 2005
E-commerce refers to a wide range of online business activities for products and services.	*Rosen, 2000
E-commerce is seamless application of information and communication technology from its point of origin to its endpoint along the entire value chain of business processes conducted electronically and designed to enable the accomplishment of a business goal.	*Purohit & Purohit, 2005

The growth of e-commerce changes the way business is operated, in order to gain the most of the benefits, that the advancements in the technological and IT fields, yield. It can be argued that electronic commerce has led to new forms of organizations within the digital environment. (Beige & Abdi, 2015)

Electronic commerce has various benefits that encourage organizations to apply to electronic markets, such as: reducing search costs, eliminating constraints of space and time, facilitating transactions, easier price and product comparison. increased productivity & efficiency of business activities and lower communication expenses (e.g. Jianyuan &

Chunjuan, 2009; Fauska et al., 2014; Beige & Abdi, 2014; Jobber & Lancaster, 2009; Garrido-Samanniego et al., 2010; Croom & Brandon-Jones 2007; Kuruzovich, 2013, Piris et al., 2004; Savrul et al., 2014; Nejadrini et al., 2011)

The potential of electronic commerce is not reached by merely automating document generation, printing and mailing. (Beige & Abdi, 2015) Electronic commerce is a strategic decision that requires cross-firm process integration and integrating the concept to critical business processes of an organization (e.g. Claycomb et al., 2005; Beige & Abdi, 2015 and multiple others).

The implementation of electronic commerce is time consuming and a long-term strategic decision. The process includes high degrees of problems, such as: complicacy, relationship and change management issues during the integration process (Claycomb et al., 2005; Beige & Abdi, 2015). Beige & Abdi (2015) identify a total of seven different critical success factors from multiple different researches (Table 3.1.2.).

Table 3.1.2. *– Critical success factors of E-commerce (Adapted from Beige & Abdi., 2015)*

Critical success factors of E-commerce	References
Commitment & support of senior management	Thatcher et al., 2006; Fu et al., 2006; Vaidya et al., 2006; Janom et al., 2009; Cullen et al., 2009; Zhai et al., 2011; Zhai & Zhaofang, 2009; Eid & Trueman, 2004; Solimana et al., 2004
Purposes & strategies of organization	Ng, 2005; Zakaria et al., 2009; Al-Somali et al., 2011; Eid & Trueman, 2004; Javidian et al., 2012; Li et al., 2005;
Government support	Nasri et al., 2012; Looi et al., 2005; Jianyuan et al., 2009; Thatcher et al., 2006; Chong et al., 2008; Son et al., 2007; Janom et al., 2009; Tan et al., 2007; Chong et al., 2011; Zakaria et al., 2010
Trust	Chang et al., 2010; Marasini et al., 2008; Chong et al., 2009; Jianyuan et al., 2009; Alam et al., 2007; Chong et al., 2012; Behkamal et al., 2006; Zhao et al., 2008; Eid et al., 2004; Zhai et al., 2011; Solimana et al. 2004
Culture	Chong et al., 2011; Wang et al., 2009; Zhang et al., 2012; Marasini et al., 2008; Ng, 2005
Relative advantage	Looi, 2005; Alam et al., 2007; Jianyuan et al., 2007; Zhai et al., 2011; Solimana et al., 2004
Technical infrastructures	Jennex et al., 2004; Eid et al., 2004; Fu et al., 2006; Vaidya et al., 2006; Angeles & Nath, 2007; Kim & Lee, 2007

For the implementation to be successful, the support of senior management is deemed as one of the key factors (Al-Somali et al., 2011; Beige & Abdi, 2015; Buehrer et al., 2005). The support of senior management has remarkable influence on a project, in form of resource quality, thus increasing the success rate of the implementation (Jianyuan et al., 2009)

The second factor is "Purposes and strategies of an organization". Strategic management is crucial for firms to obtain dynamic abilities in constantly changing environments (Al-Somali et al., 2011). Electronic commerce is a strategic decision and processes need to be in line to achieve the advantages that e-commerce can yield (Claycomb et al., 2005; Beige & Abdi, 2015)

Government support is increasingly important of a factor in developing countries, in which the development of technology is controlled by the government. In develop countries; the weight of this factor is much smaller. (Jianyuan et al., 2009; Beige & Abdi, 2015) Most of the researches, that Beige & Abdi (2015) present, are of the opinion that trust is the most important factor in success of e-commerce integration. Without trust, the usage rate of e-commerce tools is significantly smaller, as safety issues arise.

Culture and relative advantage are strongly linked to the support of management and organizational strategy. In this context, culture refers to how people feel and react towards an inspected concept (Thatcher et al., 2006), whereas relative advantage refers to advantages that e-commerce can bring to an organization in relation to earlier operating model (Zhai, 2010 and Li et al., 2008). The culture of an organization needs to be positive towards e-commerce and the technical infrastructure needs to be in place to allow the integration process. Without these conditions in place, change management becomes increasingly difficult and the success rate of e-commerce is lowered.

3.2. Marketing communication channels

B2B buyers are smaller by number, but larger in volume and the relationships are much closer. Due to this, business-to-business marketing communication marketing communication is more focused and tailored to gain and preserve customer relationships. (Anderson et al., 2009)

Companies communicate with their customer through various channels, using different communication models (Hoffman & Novak, 1996). Marketing communication is one of the subsections of organizational communications activities (Figure 3.2.1.) and it's also referred to as customer communication. The concept consists of communication activities that support the sales function. (Vos & Schoemaker, 2008)
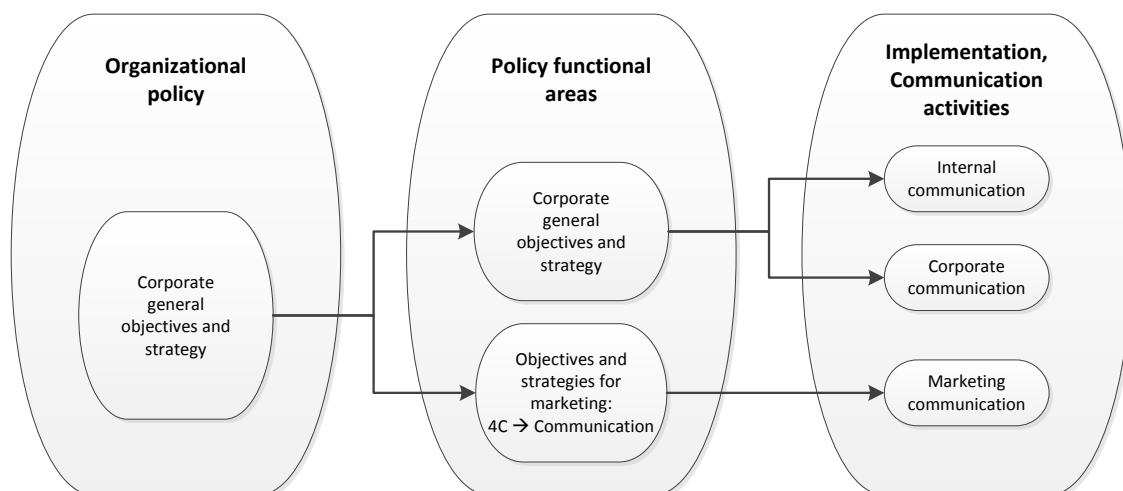
Figure 3.2.1 *- The role of marketing communication in an organization (Adapted from Vos & Schoemaker, 2008)*

The development of the Internet, especially as a tool for global sharing of information, has changed the marketing communication field practices, as the attractiveness if Internet increases (Chong et al., 2010). Traditionally marketing communication is conducted via one-to-many model (figure 3.2.2.), in which a company reaches its customers through marketing efforts that allow very limited feedback from the customers (Hoffman & Novak, 1996). In this model, the seller is responsible for all the content, whereas in the interactive many-to-many model (figure 3.2.3), the content is co-created by sellers and customers alike. The latter model allows much more feedback from the customers and the relationship also includes the mediated digital environment, in which they interact. (Hoffman & Novak, 1996)

The marketing communication channels can be one- or two-way. Traditionally in mass marketing, they one-to-many model (by Hoffman & Novak, 1996) is used, as it may help the seller to create a more favorable image. But the many-to-many model allows customer feedback and thus suits better the aspirations of relationship marketing. (Talonen, 2013) The models do not exclude each other, as customers usually use multiple channels, when searching for potential suppliers.

Relationship marketing has been on the rise in the 21st century (e.g. Cova & Salle, 2007; Iyer et al., 2006). The findings of Iyer et al. (2006) indicate that by developing high quality and consistent offerings to marketing strategies, companies that rely on interpersonal relationships, can be trumped (Iyer et al., 2006)
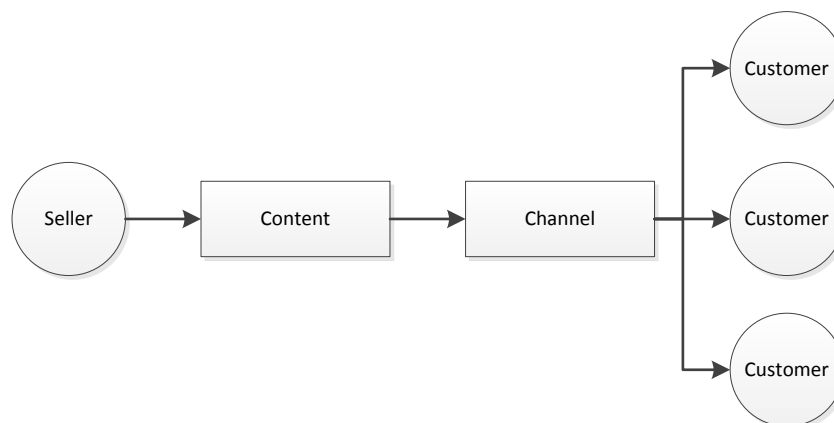
Figure 3.2.2 *– Traditional one-to-many communication model (Adapted from Hoffman & Novak, 1996)*
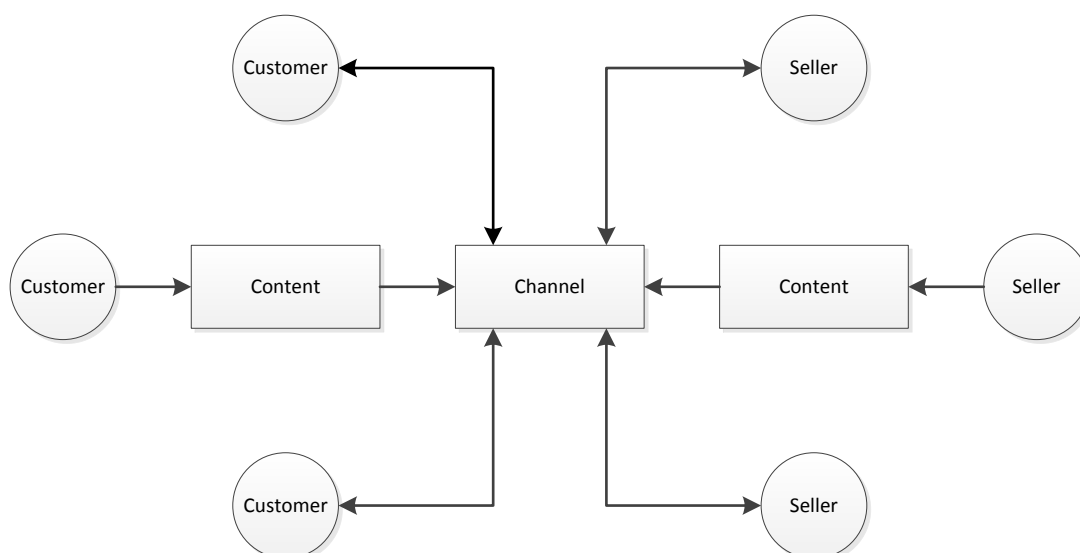
Figure 3.2.3 *– Many-to-many communication model (Adapted from Hoffman & Novak, 1996)*

Marketing communication channels are components of marketing functions, and the rise of e-commerce has affected the way marketing functions operate. E-marketing refers to the use of ICT to build and maintain customer relationships through electronic platforms, to eliminate the constraints of time and space (e.g. Chong et al., 2010; Shets & Sharma, 2005; Watson et al., 2002) E-marketing creates a fundamental shift in the marketing functions, as it allows companies to adapt to customer needs and reduce transaction costs efficiently (e.g. Sheth & Sharma, 2005; Watson et al., 2002)

Electronic marketing has multiple benefits, which are quite in line with the overall benefits of e-commerce as a whole. Gilmore et al. (2007) identify several drivers to motivate e-marketing adoption: lower operating costs, enriched marketing communication mix and competitive advantages in peripheral areas (also Chong et al., 2010; Watson et al.,

2002). Gilmore et al (2007) also raise the issue with SMEs that the implementation of e-marketing, without a specialist in e-marketing, creates difficulties in the implementation itself as well as in responding to competitive threats (Gilmore et al., 2007)

The e-marketing strategy needs to be linked to the corporate strategy, as does e-commerce as a whole. Electronic marketing eases the customization of marketing activities for different products or geographical areas, while gaining the benefits mentioned earlier (Chaffey, 2004; Watson et al., 2002) Chong et al. (2010) present a framework (figure 3.2.4.), which fulfills the traditional marketing practices of creating, communicating and delivering value to customers, if integrated with the IT infrastructure and general e-commerce strategy:
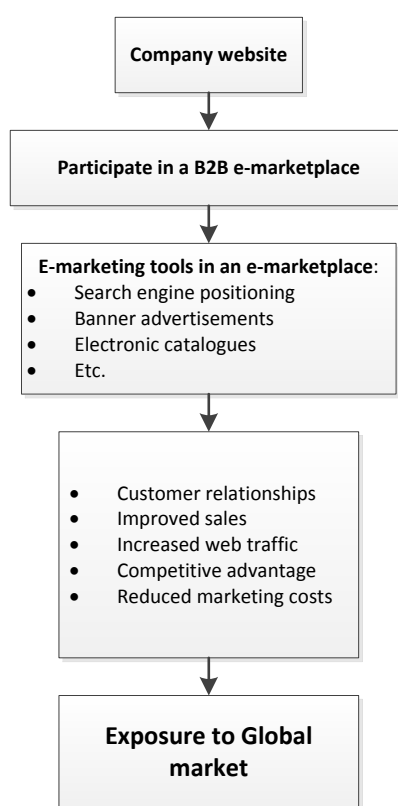
Figure 3.2.4. – E-marketing framework for B2B firms (Adapted from Chong et al. 2010)

By integrating the proposed framework to the current IT infrastructure, Chong et al. (2010) argue that e-marketing should be integrated with other technologies, such as CRM's and ERP's, to help define the overall marketing objectives of an organization.

The primary benefits of e-marketing are reduced costs and extended (Watson et al., 2002). Companies can reach customers that could not be reached via traditional marketing means, in addition to providing nearly unlimited information to the customers around the clock, in a form that is easy to process and understand. (Watson et al., 2002; Chong et al., 2010) Providing customized information to customers, the customer needs

are easier to meet and Sheth & Sharma (2005) argue that this will lead to reverse marketing. Companies can practice customer-centric marketing, instead of mass or segment marketing, providing personalization and reduced transactional costs, thus increasing the overall value of the service experience.

3.2.1. Preferred sources of information in B2B

To maximize the marketing communication channel management's outputs, it's crucial to understand what channels are most used by the preferred targets, i.e. sellers should prioritize channels that are most sought after by buyers. (Talonen, 2013) Gummesson (1998) argues that customer insights are crucial to determine the needs and value-creation processes to design and communicate offerings that satisfy the customer's needs. (Gummesson, 1998)

Communication issues are defined as main components in the industrial buying process, as they provide the information that the decision of purchase is based on (Johnston & Lewis, 1996). With the advances in IT, sourcing for information is increasingly more common (Kuruzovich, 2013), yet it is important to note that the quality lowers, the more are purchased. Although, information purchasing has existed long before Internet, as Sheth (1973) states that information sourcing is very common, especially the more complex and new the potential purchase is to the buyer (Sheth, 1973). The search for information is led by the need to solve a problem and the nature of a problem commands the direction of the search (Spekman & Thomas, 2012).

Talonen (2013) divides information sources to four categories: personal-commercial, personal-non-commercial, impersonal-commercial and impersonal-non-commercial (table 4.2.1.). The source and type of information is greatly influenced by the background of the seeker (Johnston & Lewin, 1996) and the use of information sources varies, depending on which state of the purchasing process are in, the type of purchase and familiarity with the supplier (Talonen, 2013).

Moriarty & Spekman (1984) argue that the usage of non-commercial sources of information increases, the further the purchasing process advances towards the buying decision. Impersonal commercial sources are more commonly used in the prospecting phase, where buyers search for supplier alternatives. Whereas less biased, impersonal-non-commercial sources are used for solution selection. (Moriarty & Spekman, 1984)

Table 3.2.1. – *Taxonomy of information sources by industrial buyers (Adapted from Ta-lonen, 2013, adapted from Moriarty & Spekman, 1984; Deeter-Scmelz & Kennedy, 2002; Foster, 2006)*

	Personal	**Impersonal**
Commercial	Personal selling, Video conferences, Seminars, Interactional websites, E-mail	Printed advertising, Sales literature, Direct-mail, Informational websites, Mass e-mails
Non-commercial	Personal experience, Top management, Users, External consultants, Colleagues, Sourcing function, E-mail, Word-of-mouth	News, Trade associations, Rating services, Internet newsletters, Bulletin boards

Talonen (2013) argues that the significance of personal selling rises after product, solution and brand awareness is set, i.e. mass marketing communication is a viable option. She also states that in the 2010s, geography; position and role of the buyer in the buying center; offering awareness; investigated issue and type of capital good influence the selection of information source the most, i.e. "the mix of preferred information sources varies from one situation to another, even for the same searcher". (Talonen, 2013)

The higher the risks (economic or performance) are, the more used the personal information sources are. (Moriarty & Spekman, 1984) The level of bias is of no effect, as Talonen (2013) states that referrals from colleagues and friends are important factors in the purchase-decision-making process.

3.3.   Perceived benefits of e-purchasing

E-purchasing has many synonyms, as it can be referred to as electronic buying, purchasing, sourcing or procurement; but the general definition stays the same: Electronic purchasing refers to a technological solution, which operates on the basis of using Internet as a main component of the process (Van Weele, 2010; Garrido-Samaniego et al., 2010).

MacManus (2002) argues that an electronic purchasing system needs seven characteristics (figure 3.3.1.). Traditionally, purchasing function's problems are high the amount of

physical documents, fragmented purchasing activities and lack of documentation of how resources are spent and contracts followed. One of the benefits, that electronic purchasing yields, is combining the activities and easing the documentation process and follow-up. (MacManus, 2002)
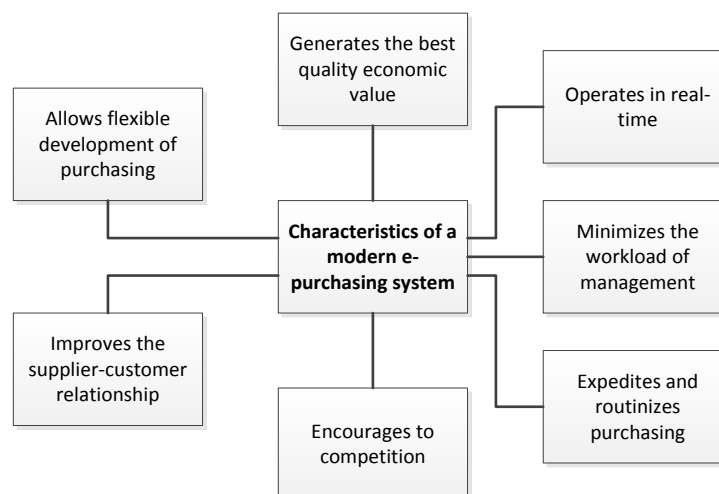
Figure 3.3.1. – *Characteristics of a successful procurement system (Adapted from MacManus, 2002)*

Companies that invest in e-purchasing technologies detect significant benefits and credit those to the adoption of IT in procurement activities (Chang & Wong, 2010). Hunter et al (2004) summarize the benefits of e-business to the following categories: 1) Streamlining the procurement process, 2) connecting buyers and sellers, 3) coordinated supply chain management, 4) after-sales service, 5) sales and marketing efficiencies and 6) intraorganizational efficiencies in the selling organization. (Hunter et al. 2004)

Electronic business applications change the front end of the traditional purchasing process. Using websites as order placement venues, companies can reduce paper handling and other time-consuming transaction, which lead to cost reductions (Kalakota & Robinson, 1999; Porter, 2001) The purchasing process is more streamline and efficient, while allowing human activities to be directed to other value-adding activities (Chang & Wong, 2010; Hunter et al., 2004).

Croom & Brandon-Jones (2007) argue that by streamlining the processes, in order to cut the time of requisition-to-payment, the total acquisition costs of goods in question are lowered. This leads to companies offering the same services as before, but with higher value of service experienced (Chang & Wong, 2010).

Electronic exchanges ease the communication between customers and sellers. The Internet allows customers access to information and sellers globally, aggregating the field. Sellers that are smaller in scale can expand to markets that were closed earlier, whereas

buyers gain access to new sources of products and services. (Hunter et al., 2004) Porter (2001) argues that by expanding the technologies of e-purchasing to the entire supply chain, companies can speed up the information flow, increasing transparency and information availability. Transparency leads to better demand, inventory and production planning, thus increasing the total efficiency of the entire chain.

Electronic purchasing expedites and enhances the operative purchasing process and addresses the issue of fragmented purchasing by improving the transparency and controlling of the function. This allows companies to focus on the strategic management of purchasing, when the operative side is consolidated. (Alt & Puschmann, 2005)

4. GUIDED SELLING IN B2B

4.1. Sales management in B2B-context

The continuously changing competition field forces companies to adapt constantly and find new ways to optimize their operations. According to Dannenberg and Zupancic (2009) sales and customer management are becoming strategic success factors, and more than often the largest cost factor. This can be interpreted, that the sales costs need to be cut, but that would be incorrect. Sales resources can be compared to financial investments, in order to succeed; a company has to invest their resources where the yield is highest. (Dannenberg & Zupancic, 2009)

The definition of "sales management" is controversial, as there isn't a commonly accepted definition of what it includes and what not. Dannenberg and Zupancic (2009) define sales management as controlling and forming of personal sales contacts, the sales system and distribution in local and global markets (Dannenberg & Zupancic, 2009). Then again, Jobber and Lancaster (2009) argue that sales management covers five themes: 1) *recruitment and selection*, 2*) motivation and training*, 3) *organization and compensation*, 4) *sales forecasting and budgeting* and 5) *sales force performance evaluation* (Jobber & Lancaster, 2009). Anderson et al. (2010) define sales management quite similarly to Jobber and Lancaster (2009). Their model argues that sales management should cover:

- Organizing and developing the sales force,
- Managing and directing sales force efforts
- Controlling and evaluating sales force performance.

These three responsibility areas can further be divided to a total of ten different sales force duties and the entire conceptual model is shown in figure 4.1.1. In this study sales management is defined as Anderson et al. (2010) has, as their model is the most detailed one and most parallel to the characteristics and changes that sales management is under. (Anderson et al., 2010)
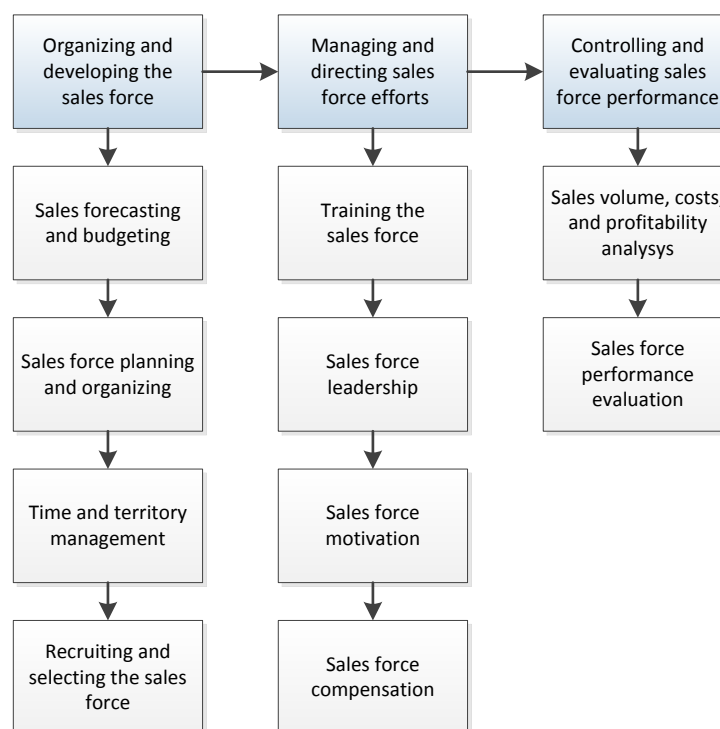
Figure 4.1.1. *– Conceptual framework of sales management responsibility areas and duties (Adapted from Anderson et al., 2010)*

Various researches, (e.g. Storbacka et al., 2009; Töllner et al., 2011, Jobber & Lancaster, 2009) state that the 21st century sales are under changes. Storbacka et al. (2009) argue that the sales process itself is becoming more about creating a relationship, instead of selling a product, as the customers are increasingly more sophisticated and better-informed. As a result, sales are increasingly about the process, instead of a series of separate transactions by different functions. In other words, the sales process doesn't have a fixed starting- or ending-point, as the goal is to reach a profitable delivery of customer value via continuous process from customer need to delivery. (Storbacka et al., 2009)

Töllner et al. (2011) bring up the need of understanding the perception of the relevant solution criteria in order for seller to succeed in the capital goods industry. In order to effectively market technologies and solutions, organizations need to understand customer needs and behavior. It is argued that better understanding would help design solutions that provide superior value. Organizations should be able to identify and meet the customer needs and benefits, regardless of their belief in their own technology and product, to create customer value. (Töllner et al., 2011)

The ever-growing use of Internet in order processing and replenishment is also one of the reasons for the changes that sales functions face. Storbacka et al. (2009) claim that, these traditional duties of the sales function, have become tasks of the operational or

marketing functions, as sales are increasingly associated with account management and solution development to maximize customer value. (Storbacka et al., 2009)

4.1.1. Sales channels

Manufacturing firms generally have two means to reach their customers: direct sales organizations or external intermediaries, i.e. distributors and resellers. But which of the alternatives is the better option, especially considering the rise of Internet-based commerce. (Mattsson & Parvinen, 2011; Yang et al., 2015)

Direct and indirect selling both have their own benefits and according to Yang et al. (2015) intuition would suggest that direct selling would be the better option, as it eliminates double marginalization and thus improves profitability. Mattsson & Parvinen (2011) support this claim, as they argue that one's own means of distribution gives the manufacturer greater control of selling and pricing. Direct selling is especially more favorable in situations where the cost of specialized assets, to serve end customers, is high. (Mattsson & Parvinen, 2011)

The two main means of selling can further be divided into different channel configurations that are shown in figure 4.1.2. Mattsson & Parvinen (2011) introduce four different levels of sales channel configurations. The zero level illustrates direct selling by manufacturer to the customers, as opposed to level one, where there are industrial distributors between the manufacturer and the customers. Level two is a hybrid of the two former configurations. On that level, the manufacturer has representatives that sell either to distributors or straight to the customers. On the final level, third level, the manufacturer has its own sales branch, which acts as the representatives. The difference between sales branch and representatives is, that the representatives are usually an external resource and much smaller in scale. (Mattsson & Parvinen, 2011)

| 0-level | 1-level | 2-level | 3-level |
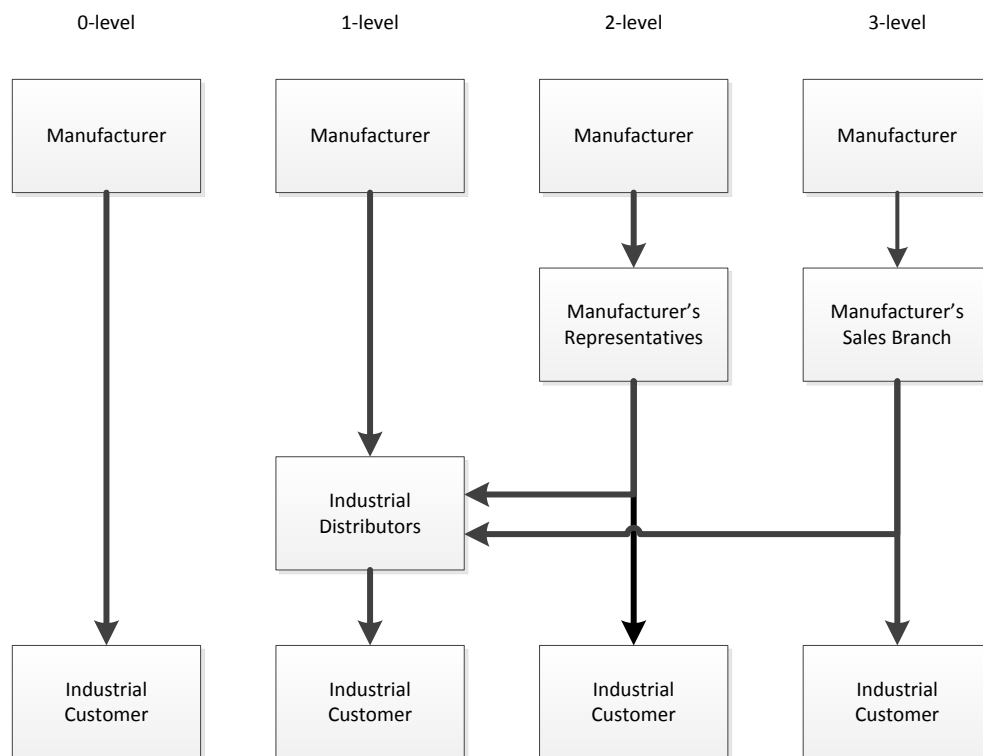
Figure 4.1.2 – Typical industrial sales channel configurations (Adapted from Mattsson & Parvinen, 2011)

Direct and indirect selling both have their own benefits and according to Yang et al. (2015) intuition would suggest that direct selling would be the better option, as it eliminates double marginalization and thus improves profitability. Mattsson & Parvinen (2011) support this claim, as they argue that one's own means of distribution gives the manufacturer greater control of selling and pricing. Direct selling is especially more favorable in situations where the cost of specialized assets, to serve end customers, is high. (Mattsson & Parvinen, 2011)

In sales, there are three different competition models: 1) Bertrand competition, or competition on price, 2) Cournot competition, or competition on quantity and 3) Bertrand-Cournot competition, in which one organization competes on price and the rest on quantity. (Nicholson & Snyder, 2008; Tremblay et al., 2010)

Previous research of, which mean of selling is better, focus on equally substitutable products, but what about situations where there is noticeable asymmetry in substitutability and brand equity? Yang et al. (2015) claim that the benefits of indirect selling are greatly dependent of equal substitutability in products and Bertrand competition. Their analysis shows that with sufficient asymmetry on both substitutability and brand equity manufacturers tend to sell directly, as the benefits of indirect selling are eliminated.

The analysis that Yang et al. (2015) conducted would implicate, that in situations where the rivals compete on quantity, it's preferable to utilize direct sales channels. In complex products, the cost of service will be high, as specification process of customer needs is time-consuming in order to provide the optimal solution. This is in line with Mattsson & Parvinen's (2011) claim that direct selling would be a better option in this situation. Jobber & Lancaster (2009) support this and state that generally low-cost, low-technology items are better suited to longer sales channels, whereas complex and expensive items are sold through short channels, i.e. directly.

It is important to remember that the channel configurations are not absolute, regardless of the nature of sold goods. Jobber & Lancaster (2009) argue that, when selecting a sales channel, there are seven factors that need to be taken in consideration:

- the market;
- channel costs;
- the product;
- profit potential;
- channel structure;
- product life-cycle; and
- non-marketing factors.

Although, these factors are mostly related to the distribution aspect of sales channels and are therefore left out of inspection, in regard of the purpose of this study.

4.2. The effect of digitalization to B2B-sales

The development in information technology (IT) in general, and Internet have greatly affected the nature of selling and sales management. Jobber & Lancaster (2009) identify technological forces that are consequences of the evolution of IT-applications. Many researches claim that Internet has become a powerful tool, which transforms the dynamics of business interactions increasing sales productivity. (e.g. Jobber & Lancaster, 2009; Avlonitis & Panagopoulos, 2005; Kuruzovich, 2013)

As stated in chapter 4, the rise of e-commerce and Internet as whole has changed the competition greatly. The Internet is one of the most commanding forces that drives sales management to adapt. Jobber & Lancaster (2009) have identified three groups of forces that affect selling and sales management (table 4.2.1.), and thus create the characteristics of modern selling: 1) *Behavioral forces*, 2) *Technological forces* and 3) *Managerial forces*. The behavioral forces refer to the customers, buyers and the marketplace in general; technological forces to the evolution of IT and e-commerce, or in other words: how the sales operations are handled currently; and managerial forces to the responsibility areas and duties of sales management. This chapter focuses on the technological forces.

Table 4.2.1 – *Forces affecting selling and sales management (Adapted from Jobber & Lancaster, 2009)*

Behavioral forces
Rising customer expectations
More professionally minded buyers
Customer avoidance of buyer-seller negotiations
Greater leverage of major buyers
Globalization
Fragmented markets
Technological forces
Sales force automation (SFA)
Evolution of IT-applications
Electronic marketplaces
Virtual paying methods
Managerial forces
Direct marketing
Interface of sales and marketing
Qualifications for salespeople and sales managers

Sales force automation or SFA in short, is the main factor in technological forces. Sales force automation is defined as the use of software and technology to automate the business tasks of sales function (Jobber & Lancaster, 2009), freeing resources to account management (Storbacka et al., 2009). Sales force automation allows direct exchange of information and access to the same database, which enables unified information presentation (Jobber & Lancaster, 2009).

Hunter & Perreault (2007) argue SFA has great potential to increase the productivity of a sales function, which is supported by researches (Ahearne et al., 2008; Sundaram et al., 2007). One mean of achieving this is the use of virtual offices. Virtual offices don't require people to be in the same physical space to interact with other people, generating cost and time savings and enhanced job satisfaction through the use of video and phone meetings. (Jobber & Lancaster, 2009)

Areas where improvements are met, due to more time to focus on personal selling, are:

- substitution of capital for labor;
- nature of the sales job;
- reallocation of tasks between the buyer and seller;
- team selling through stronger communication and;
- organizational structure of the sales function. (Tanner & Shipp, 2005)

Although SFA is mostly technological components that allow a new way of working, it shouldn't be viewed as mere technology (Holloway et al., 2013). Customer relationship management or CRM in short, is a tool of sales force automation, while both are core business strategies, like e-commerce as whole. (Holloway et al., 2013; Iriana et al., 2013) Salespersons use technology to assist them in their work, as they view it as useful to them, or more specifically it allows them to be more efficient and productive. (Engle & Barnes, 2000; Effrmeyer & Johnson, 2001; Schillewaert et al., 2001)

The introduction and rapidly growing use of information systems in industrial sales organizations has undoubtedly created a shift in the sales functions, in terms of trying to increase productivity (Avlonitis & Panagopoulos, 2005). Information systems are tools to improve the efficiency of organizations, in venues such as communication and information management (Hunter & Perreault, 2007). Information is more unified within organizations and sourcing for information eases the activities of marketing and sales functions (Kuruzovich, 2013) Prospecting for new customers, serving current ones and building more sustainable relationships is due to the use of Internet in sales functions (e.g. Long et al., 2007; Kuruzovich, 2013)

Currently, stakeholders use technology similarly as sellers, i.e. to identify, evaluate and build relationships with suppliers, whose offerings are closest to their needs (Schultz & Patti, 2009). Aarikka-Stenroos & Makkonen (2014) argue that, due to the shift from exchanging tangibles towards exchanging intangibles, value communication becomes increasingly harder. The increased complexity makes buyers' search more demanding. The importance of acquiring and converting leads is increasingly important and the development of IT applications drives the growth of lead-based sales higher. (Kuruzovich, 2013)

Organizationally, using technology in sales function creates new positions. When implementing technology to selling functions, there should be employees with responsibility areas as ERP and EDI systems. Delegating IT responsibilities to functions, instead of centralizing them, is deemed necessary, as it increases cross-functionality in organizations, easing strategic planning in purchasing, production and marketing function strategies. (Claycomb et al., 2005)

Business IT applications offer sales force tools that not only improve sales force productivity, but can save time in sales and marketing activities. Web technologies make contacting customers cheaper, faster and easier. (Brodsky, 2001) They match the buyers and sellers through new trading networks with automated transactions, lower search costs and increased overall process effectiveness and efficiency (Zhao et al., 2009). Porter (2001) also argues that more dynamic pricing tools and internal information flow are results of the use of IT in business activities, releasing time to value-adding selling activities.

4.2.1. Online selling

Non-academic sources claim that between 57 to 90 percent of a customers' purchasing decision in B2B has been made before contacting the potential supplier (Karr, 2014). This is based on a notion that selling online allows the customers to access information easier and thus do not need the expertise of a salesperson.

Then again, other non-academic sources claim, that the approach is a mere myth. Apollo (2014) argues that the figures have been understood naively and thus have no value, especially in complex purchasing decisions where "the prospect is much more likely to be open to early engagement with potential vendors" (Apollo, 2014). What the non-academic discussion yields, is a fact that an online sales presence is needed, but the quantitative effect of it is greatly debatable, not to mention the measure of it replacing the human interaction.

The Internet has evolved into a useful tool for B2B salespeople. Long et al. (2007) explain that sales reps can prospect new accounts, serve existing accounts and build better relationships more efficiently with the support of Internet. Prospecting and relationship efficiencies can be reached due to the fact that online selling expands the limits of the sales field and can be employed to quicken transactions, depending on their nature (Lichtenthal, 2003).

Parvinen et al. (2014) argue that online selling hasn't been conceptualized in information systems, sales management or electronic commerce literatures, thus how it can be done needs development and further academic inspection. In this study, online selling is an activity, which is distinct from activities such as electronic commerce, electronic marketing and electronic retailing. Instead, it is defined as a human or human-like activity in which digital interaction is employed in order to increase customer value, i.e. as valuable e-saleswork, which includes mechanistic processes in a value chain that can be automated, such as order taking. (Parvinen et al., 2014)

Buyers look for lower prices of goods, decreased order handling cycles and lower administrative costs in general and according to Tarazone-Bermudez et al. (2014), Internet is an essential tool in this crusade. Suppliers can generate a wider customer base and new means to increase sales, reduce excess inventory and reduce administrative costs from their end. To accomplish these objectives, Long et al. (2007) argue that the key is communication. Not only the communication by a salesperson, but non-personal methods of communication on the organizational level, such as advertising, direct marketing and Internet activities that play complementary roles in supporting the selling process. (Long et al., 2007)

Electronic auction tools are probably the most used venue of online selling. Multiple researches (e.g. Li et al., 2011; Tarazona-Bermudez et al., 2014; Carbonneau & Vahi-

dov, 2016; Standaert et al., 2015) study their meaning and role in sales processes. They take place in e-marketplaces, in which customers can connect with potential buyers, without prior knowledge of their existence. Sashi & O'Leary (2002) explain how depending on the form of a web auction tool, the sellers can make an offer for a communicated need with setting a price quotation, thus competing with each other in a form of an auction. The other way an auction tool can take place is that sellers set a base price for their offering, of which buyers compete in style of an auction. (Sashi & O'Leary, 2002)

Online selling effects salesperson's preparations, way of contacting customers and order follow through, thus having a major effect in a sales functions performance. According to Long et al. (2007), it helps salespeople increase their speed and quality of service, as well as lowering customers' time and effort investments in completing a transaction. Online selling has the potential to lower customer's transaction costs and thereby increase the offered net benefit, while enhancing a salesperson's efficiency. (Long et al., 2007)

4.2.2. Characteristics of a good online selling website

By creating good online selling websites, companies can improve the relationship quality with customers (Hsu et al., 2013). Online selling web sites do not replace sales personnel, they can increase the productivity of a sales force by automating the exchange of information and serving as a venue for gaining leads. (Porter, 2001) Many researches (e.g. Hsu et al., 2013; Janita & Miranda, 2013; Thongpapani & Ashraf, 2011) claim that website characteristics are important antecedents of relationship quality. Website characteristics are defined as the user's impression of the elements that the website consists of, i.e. system, information and service quality (DeLone & McLean, 2003).

Thongpapani & Ashraf (2011) introduce information search and risk perception theories that claim that customers should be provided with convenient and comfortable environment, in which the information is easy to access, process and explore. This can be reached by offering personalized websites, which increases the perceived user-friendliness. Interactivity, constant availability of information and efficient information transfer ease the relationship building, thus increasing customer satisfaction and commitment (Hsu et al., 2013). Parvinen et al. (2014) also discuss in the context of e-selling that the customer needs to be detached from the real word and the buying experience needs to feel personal, for the experience to be perceived as a good one.

The DeLone & McLean (2003) IS success models are widely used in IS research and based on them, Chen et al. (2013) create a model for researching success factors of electronic commerce websites (figure 4.2.1.). The model suggests that there is a relationship between three variables, information; system; and service quality, and user satisfaction and attitude towards a web site, which determine the effectiveness of a website.
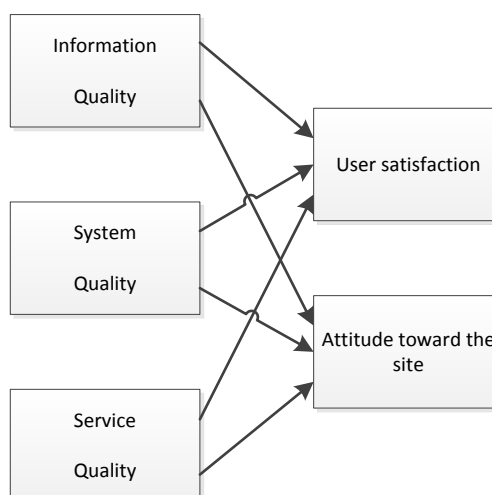
Figure 4.2.1. – Success factors of an electronic commerce website (Adapted from Chen et al., 2013)

Providing information to the customers is extremely important, and with the development of IT applications and use of Internet in B2B, it has become easier. Providing more information has been proved to enhance the customers' abilities to communicate their needs and compare offering alternatives, leading to an improved online experience and potentially satisfactory transaction (Thongpapani & Ashraf, 2011). Chakraborty et al. (2002) highlight the importance of information quality, as according to them the feeling of communicating something of value to a customer is one of the most important predictors of website effectiveness.

On the other hand, regulating the amount of information is equally important. Various researches (e.g. Chen et al., 2013; Thongpapani & Ashraf, 2011; Song & Shepperd, 2006), highlight that too much information can lead to problems regarding locating the desired information, leading to a lower quality experience and potentially loss of a sale. Poor quality websites have difficulty in attracting, satisfying and retaining customers, as the amount of information does have a correlation with information quality, but the manner of presentation is more crucial (Chakraborty et al., 2002). In order to maintain high information quality, Chen et al. (2013) claim, that the presentation must allow the information to be interpretable, understandable, easy to manipulate and accessible.

The second factor refers usability and availability as determinants of system quality. As per Chen et al. (2013), usability can be measured by ease of use, layout logic and arrangement of information, whereas availability is measured by whether the web site can be accessed or is it out of order. Chakraborty et al. (2005) find that usability is an important antecedent of attitude towards the website and together with enhanced user satisfaction the system quality correlate directly with website effectiveness.

System quality is closely parallel with service quality, as system quality enables the quality of a service. Service quality is a multi-layered construct consisting of factors, such as trust, personalization and interactivity (Chen et al., 2013; Chakraborty et al., 2002). For trust to form, a website needs to have a good reputation and security for customers to feel safe to perform transactions and allow access to personal information (Chen et al., 2013). Interactivity can enhance personalization, as Chakraborty et al. (2002) argue that personalization in the context of a website involves treating visitors as individuals, recognizing revisiters and serving information per his/her implicit or explicit preferences.

There are no absolute guidelines, to what online selling sites should include, and what not, but the added value of using the web site is crucial. Briggs & Grisaffe (2010) argue how economic value is essential in B2B transactions, i.e. without value produced, websites might be deemed obsolete and even damaging. Customers, who trust and are satisfied with the contents and services of a website, are more likely to revisit those (Hsu et al., 2013).

Client e-loyalty can be achieved by improving the customer's total experience, and its importance is increasingly crucial for companies' survival, as the usage of electronic commerce grows. The basic laws of relationship management haven't changed, but the playing field has. Electronic commerce raises the bar of in what speed companies have to improve their offerings and adapt, in order to maintain customer loyalty. (Janita & Miranda, 2013)

4.2.3. E-marketplaces

One of the results of the development of IT-applications in B2B is e-marketplaces. Stahl (2000) defines them as a tool that gathers multiple products and services in order to cut purchasing costs via increased choice and price competition, thus improving efficiency. The definition has remained almost unchanged, as Chong et al. (2010) argue that e-marketplaces make significant contributions to e-marketers and they are increasingly more common among SMEs as well as large corporations.

According to Zhao et al. (2009) the emergence of B2B e-marketplaces is one of the major transformations that the development of IT has brought to the industrial context. They match the buyers and sellers through new trading networks with automated transactions, lower search costs and increased overall process effectiveness and efficiency. Chang & Wong (2010) are of the same opinion and highlight how the e-marketplaces are increasingly important to the procurement and sales activities of a company, as they also ease identifying new market opportunities and customers in addition to the benefits that Zhao et al. (2009) stated.

Chong et al. (2010) gathers benefits that various other researchers have found, of e-marketplaces to companies. They can be generalized to themes of cost savings and improved process efficiency, but it is of note that the perceived benefits are in line with the development of sales management, addressed in chapters 4.1. and 4.2.

Table 4.2.2. – Perceived benefits of e-marketplaces (Gathered by Chong et al., 2010)

Perceived benefit	References
Reductions in search costs through easier price, product and service comparison	Kandampully, 2003; Bakos, 1998; Kaplan and Sawhney, 2000
Improved production and supply capability	Barua et al., 1997; Albrecht et al., 2005
Improved personalization and customization of offerings	Bakos, 1998
Enhanced customer relationships	Kierzkowski et al., 1996
Reductions in marketing costs and personnel	Sculley and Woods, 2001; Gloor, 2000
Continuous operation globally	Ngai, 2003; Laudon and Laudon, 2002
Exploration of new market segments	Murtaza et al., 2004
Improved interaction in marketing communication services	Petersen et al., 2007

Chang & Wong (2010) argue that of the perceived benefits, efficiency; legitimacy and IT capabilities are the main drivers for companies to take part in e-marketplaces. Time and cost savings are always of interest to companies aiming to succeed, and it is suggested that e-marketplaces might also give suppliers access to higher authorities in buying companies, but it hasn't been verified.

Legitimacy in this context refers to peer pressure in the industrial field. Participation and non-participation are statements in their own respect and both have their possible consequences. Companies might desire to appear as technologically advanced and take part due to that, or be scared of the risk of isolation and loss of possible business opportunities. Acknowledging the level of one's own IT capabilities is also important. E-commerce and its tools, such as e-marketplaces, are a strategic decision and thus require investments. To build sustainable competitive advantage through e-marketplaces, an IT infrastructure is needed. (Chang & Wong, 2010)

The structure of an e-marketplace is quite standard. Older researches, such as Gulledge (2002), use the same structural model that more recent ones (e.g. Chong et al., 2010) use as well. The e-marketplace is a portal, provided by a third party or a company website, in which buyers and sellers meet. In theory, an e-marketplace can unite an infinite number of buyers and sellers. But due to trust issues (Chong et al., 2010) it's increasingly important that the e-marketplace chosen suits the firm's wants and needs.
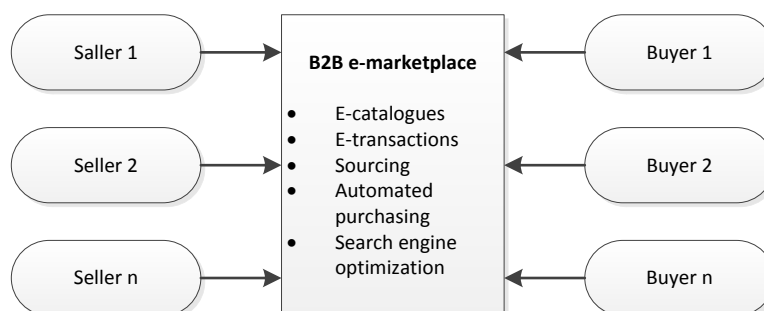
Figure 4.2.2 – The general B2B e-marketplace structure (Adapted from Chong et al., 2010)

Trust is the most important factor regarding e-marketplaces, in addition to competence, friendliness, safety and predictability (Chang & Wong, 2010). The lack of personal contact and anonymity raise the risks involved with information validity and safety. Trust was deemed as a factor that can make e-marketplaces worthwhile for both buyers and sellers (Zhao et al., 2009). Chang & Wong (2010) agree with this, as trust supports collaborative relationships and helps dealing with unfamiliar or new partners by reducing the risks affiliated with e-marketplaces.

4.2.4. Recommendation technologies

The term "recommendation system" isn't set in stone. There a various definition to it, depending on how it is perceived. Various researches (e.g. Park et al., 2012; Pu et al., 2011) use a narrow, i.e. technologist, definition. They emphasize the algorithmic side of the system and that a recommender systems use data analysis in determining the probability of a purchase and creating suggestions for items of interest proactively, based on given preferences or objective behavior.

In this study, the wider definition is used. Schafer et al. (2001) argue that the term *recommender system* includes the software, which recommends products, and the one that helps comparing them. Although, not all recommender systems are algorithmic, making them non-personalized. Knijnenburg et al. (2012) state that recommender systems "offer each user a personalized subset of items, tailored to the user's preferences", which de-

mands an algorithmic approach. Gong (2012) also argues that the use of e-commerce sites is a crucial part of a recommender system.

Therefore, a *recommender system* is defined in this study as follows: "*An algorithmic software, using e-commerce sites, that recommends and compares products in a personalized fashion.*" (Adapted from Schafer et al., 2001; Knijnenburg et al., 2012; Gong et al., 2012)

Recommendation systems are increasingly more popular in the industrial field as a tool of electronic commerce (Gong, 2012). The system learns from a customer and uses the gathered data to recommend products that provide most value. Lopes & Roy (2015) argue that e-commerce organizations are growing exponentially and many organizations rely on websites to attract new customer and keep the current ones. Song & Shepperd (2006) and Thongpapani & Ashraf (2011) bring up the problem of information overload, that e-commerce has caused. Customers have easier access to more choices, which might result in a confused and lost state. Due to this, it is trivial that companies can indicate that their offering can meet the customer needs. (Song & Shepperd, 2006; Thongpapani & Ashraf, 2011)

Lopes & Roy (2015) highlight the importance of recommendation systems. Providing personalized recommendation to an individual user, the user experience improves and the customer is connected to an offering they are interested in. High-quality systems help satisfy the customer needs, but also attract new customers. Low quality recommender systems usually run into two errors: false negatives, items that are desired are not recommended; and false positives, items that are recommended even though it is not desired. Lopes & Roy (2015) emphasize the importance of false positive errors, as they can result to unsatisfied customer and therefore cut the relationship short. (Lopes & Roy, 2015)

The recommender systems bring benefits to sellers as well. Aarikka-Stenroos & Makkonen (2014) argue that, due to the shift from exchanging tangibles towards exchanging intangibles, value communication becomes increasingly harder. The increased complexity makes buyers' search more demanding. Kuruzovich (2013) emphasize the importance of acquiring and converting leads to sales. Recommender systems are a technology that improves the quality of leads and opens new business opportunities for companies via bringing in customers that use recommender systems offering the company's products or services.

Lead-based sales are experiencing a tremendous growth with the development of IT applications (Kuruzovich, 2013). One of the reasons for this is that companies can purchase customer information from service providers in order to generate sales leads. By understanding customers, the recommendation process can be improved and references

can be utilized as well to improve value communication and recommendation systems to maximize customer value. (Kuruzovich, 2013; Gong, 2012)

4.2.5. Sales configurators

Product variety and customization are increasing trends observed worldwide by multiple researches (Pine, 1993; Scavarda et al., 2010; Bils & Klenow, 2001; Cox & Alm, 1998). Increased product variety and customization helps companies offer customers exactly what they want, or as close it as possible within a company's resources (Trentin et al., 2013). Allowing a customer to self-customize a product with a sales configurator, can be a source of experience related benefits, in addition to economic ones, to a customer (Trentin et al., 2014).

Mittal & Frayman (1989) define configuration as "a special type of design activity, with the key feature that the artifact being designed is assembled from a set of pre-defined components". (Mittal & Frayman, 1989; Zanker & Tiihonen, 2008) From there, Zanker & Tiihonen (2008) state that a configurator creates valid configurations of a requested item based on the given criteria and limitations to ensure compatibility and customer requirements. (Zanker & Tiihonen, 2008)

A sales and a product configurator are often interchangeable as terms, yet they can have different meanings. Pimiä (2002) says that a sales configurator is a product configurator adapted for the needs of sales personnel. It is software, an independent application or a part of another one, such as ERP, CRM or PDM, that helps the sales force in the creation of a quotation. The term "choice-board" is also used as a synonym for a sales configurator, but it appears mainly in B2C-side of e-commerce (Bharati & Chaudhury, 2004). Kopra (2003) identifies total of three different usage scenarios of a sales configurator application:

- Internal use by sales men to create quotations
- A dealer us using the application
- External use by end-customers directly (Kopra, 2003)

According to Haag (1998), a sales configuration is a high-level configuration, in which an external user, usually a sales person or a customer, interacts with an application to make creative decision on the offering. Kopra (2003) argues that more than often the configurator is accessed through Internet by the customer in order to generate a configuration detailed enough for automatic quotations. More recent studies, such as Abbasi et al. (2013) support this claim and say that the configurator offers a graphical user interface (GUI) for the customers to guide them through the entire process. During the process, the configurator verifies the feasibility of a configuration and handles possible conflicts. (Abbasi et al., 2013)

A number of companies of all sizes use product and sales configurations in order to involve the customers in defining the preferred attributes of a product, thus increasing customer satisfaction (Huffman & Kahn, 1998). At the same time, companies can gather customer data for future use (Berman, 2002). B2B e-commerce represents a majority of all e-commerce (Forrester, 2012), yet most of the sales configurators are concentrated on the B2C field of e-commerce (Cyledge, 2013). In this research, sales configurators are defined as by Trentin et al. (2013): *"applications designed to support potential customers in choosing, within a company's product offer, the product solution that best fits their needs"*.

For the creation of quotations detailed enough, there are factors that need to be considered. Kopra (2003) explains how the configurator is a front-end application, which uses data from back-end applications, such as product data management (PDM) and enterprise resource planning (ERP) systems. Examples of the data that is taken from back-end applications are customer data, sales item data and availability information. (Kopra, 2003)

Trentin et al. (2014) emphasize how the manufacturer needs to understand the product attributes as well as customers' needs, in addition to levels within these factors as well as configurator capabilities themselves. Sales configurators should have the following capabilities, in order to increased customer-perceived benefits: focused and flexible navigation logic, user-friendly product space description, easy comparison and benefit-cost communication. (Trentin et al., 2014)

The goal of a configuration is that each variant is functional, technically feasible and that it satisfies the customer's needs as well as possible. Haag (1998) also highlights that the primary target is that it supports the variant search process, without forgetting the integration to business processes. (Haag, 1998) Regardless of a wide use of sales configurators, Abbasi et al. (2013) argues that there isn't a consistent body of knowledge regarding their engineering. This causes problems with the configuration in form of unfeasible variants, conflict between the GUI and business logic and efficiency issues. These consequently lead to expensive development and maintenance of the configurators. (Abbasi et al., 2013)

Sales configurators are a tool for companies to avoid the product variety paradox, in which the potential customers might feel flooded by the size of a company's offering. Ironically, the goal of increasing sales by raising product variety, might lead to loss of sales, as the paradox takes effect and the companies aren't able to avoid the pitfall. (Gourville & Soman, 2005) Trentin et al. (2013) suggest that sales configurators, if deployed carefully, can avoid this paradox and help achieve the goal of increased sales and operational efficiency.

4.2.6. Effect of web-based tools in sales and quotation processes

Sales configurators, if properly integrated, can bring various benefits to companies that use them. Abbasi et al. (2013) claim that the ability to offer customized products at the same cost and delivery rate as generic ones is a must to being competitive. Tiihonen et al. (2013) argue that allows companies to adapt customizable products for individual customers efficiently. It is of note that both researches, in addition to Kopra (2003) are of the opinion that most of the benefits of sales configurators can be reached if the products are mass-customized, due to their pre-defined variations. Product modularity is also an issue that rises in the studies as an enabling factor.

Sales configurators aren't used only to create product variants that can be offered. Kopra (2003) brings up key features of a sales system that can be eased with configurators: pricing, bundling, catalogs, document generation and order functions. (Kopra, 2003) Palonen (2003) argues that they can also cut down the lead-time in sales-to-delivery process and uniform the quotation process.

Ershov et al. (2012) say that the quotation is one of the most time consuming steps in the process of winning and order. They continue that the quotation process can be optimized by reducing the quotation costs and identifying customers' needs better. In the quotation process, a rough dimensioning of the offering needs to be made before a price estimation can be created. Hvam et al. (2006) argue that if the quotation-to-order ratio is low, there's huge potential in improving the efficiency, either by improving the ratio or costs affiliated with the process. The more complex a product is, the more engineering needs to be done before a profitable quotation can be given, thus increasing the costs and time consumed. (Hvam et al., 2006)

In the classical quotation process, the activities of it are distributed between several departments. Hvam et al. (2006) raise problems with this model. Much of the resources are spent in co-ordination and a lot time is spent on waiting for internal answers, increasing the lead-time of the quotation process. This results in a iterative quotation process, which is shown in figure 4.2.3., and which is time consuming and inefficient.
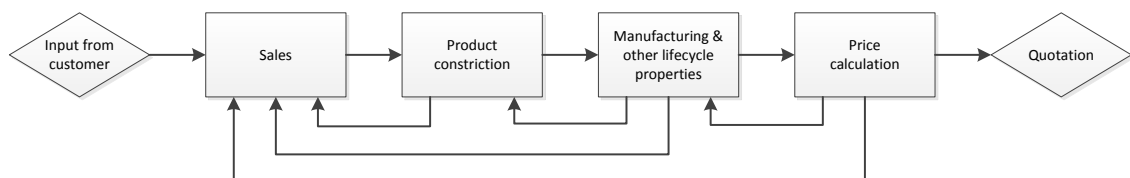

Figure 4.2.3. – *Quotation process without the use of configuration systems (Adapted from Hvam et al., 2006)*

According to Hvam et al. (2006), by implementing configuration systems, a company can optimize the quotation and engineering processes, thus lowering the costs and time spent in them and increasing efficiency. Blecker & Friedrich (2007) have gathered benefits that suppliers and customers perceive with the integration of configurator systems in the processes. In addition to the ones that Hvam et al. (2006) introduce, the most notable benefits, to the supplier, are reductions in iterations, errors, technical checking and effort spent in specification.

According to Blecker & Friedrich (2007), configurators also address the problem regarding low quotation-to-order ratio and increase the chance of meeting the customers' needs. The quotation process with configuration systems is shown on figure 4.2.4. From the figure it can be seen that the iterative nature of the quotation process has been eliminated and the process is streamlined.
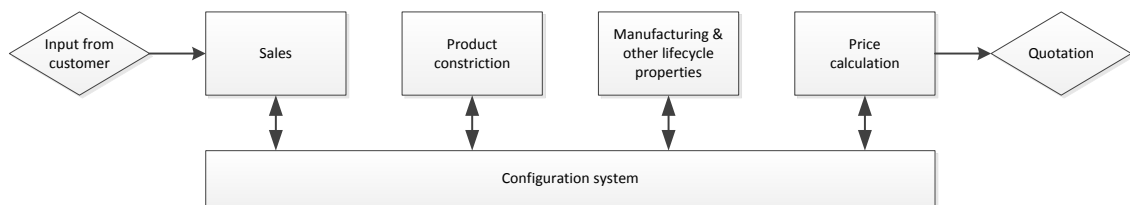
Figure 4.2.4. *– Quotation process with the use of configuration systems (Adapted from Hvam et al., 2006)*

Entire tables of the customer and supplier benefits are in appendixes 1 and 2. The customer benefits aren't addressed in the text, in regard to the purpose of this study.

4.3.   Framework of digitally guided selling

Multiple studies have researched value co-creation for both companies and customers (e.g. Grönroos, 2008; Payne et al., 2008). Customized offerings can be shown to a customer via an interface, which allows them to see the development work as well as the delivery process. Co-creating value requires the manufacturing company to be customer-oriented so customer preferences can be identified and offerings be adapted to match them.

The guided selling process enables better quality information to the selling company about customer behavior and needs. In short, digitally guided selling is a combination of sales and marketing operations, IT systems and product & sales configurators to aid sales function in their work, not do the work itself but determine what the optimal product configuration would be for the customer.

In digitally guided selling, customers are being guided during their buying process by providing necessary information when it is required to fulfill their needs optimally. In

the process, sales function is guided by certain procedures or systems that aim to create a solution, which is optimal both for the customers and the selling company. The use of digital tools in the customer-supplier interaction has become more common and can provide multiple benefits for the companies. Guided selling is especially important in the context of complex technical products and services, as it combines the knowledge of the sales representatives with the IT tools efficiently.

Digitally guided selling is a field that is relatively little researched and the academic field lacks a definition of the concept. The themes of earlier chapters have the potential to increase customer participation and enable more effective work practices for sales representatives. From a non-academic point of view, guided selling is defined by Tacton (2015) as "—the part of configuration that adds more than just selections. It adds business value."

Based on the earlier theory chapters, this chapter suggests that digitally guided selling consists of the following components working in unison as components of the framework (figure 4.3.1.)

- Product data management (PDM) system
- Enterprise resource planning (ERP) system
- Customer relationship management (CRM) system
- Sales configurators
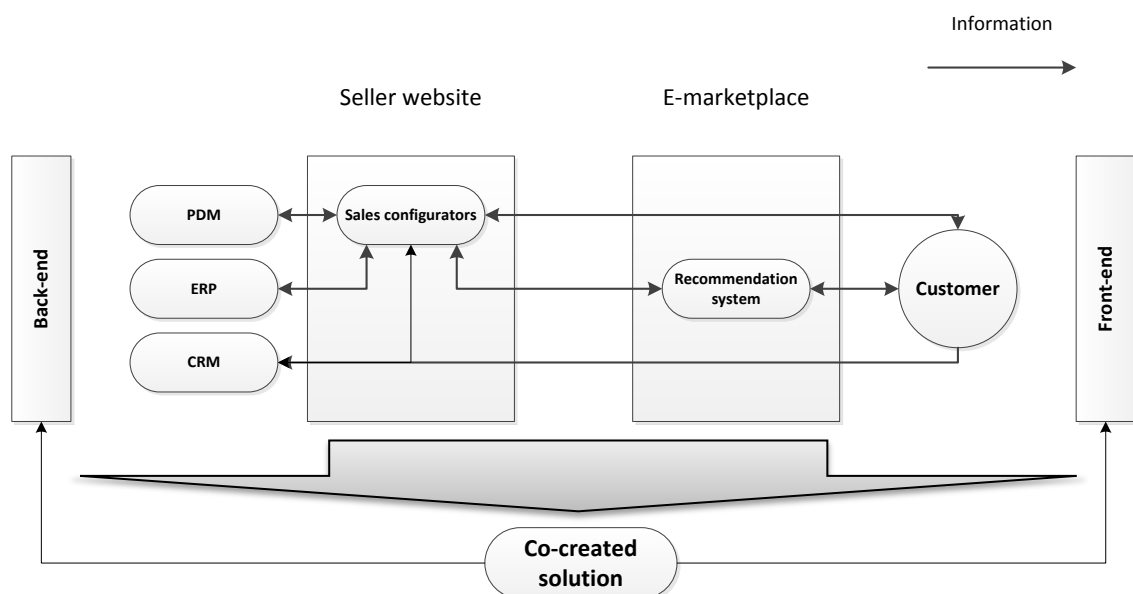- Recommender systems
- E-marketplaces
- Company web sites

Figure 4.3.1. – *Framework of digitally guided selling process*

In the framework, the customer can reach the sales configurator either directly or via an e-marketplace, which recommends the offering of the selling company. The information of needs flows to the sales configurator, which has the ability to mirror it to the offering of a seller by reflecting it to the data in the seller's back-end systems, such as PDM, ERP and CRM. During this, the customer receives information back from the configurator on whether their configuration is possible or not, while the seller's IT systems gather the data. If the configuration is applicable, the final output of the framework is a co-created solution to the customer's needs.

The primary output of the framework is an automated, official offer document of a customer's specified product or service configuration for his/her needs, but the final output is a co-created solution. Information of the created solution flows to the front- and back-ends of the framework, i.e. the selling company and the customer. The goal of the framework is to be a toolbox that supports selling, while considering both the end customer's point of view as well as the selling company's agenda.

4.3.1. Implementation

The potential for automating sales function is huge (Gohmann et al., 2005) and literature is filled with examples of failed SFA implementation projects. Reasons behind the failures of implementation are generally for same reasons and for example Gohmann et al. (2005) argue that the acceptance of new systems and processes are critical for succeeding. If the sales force perceives the changes as unfavorable development, the probability of failure increases.

Long et al. (2007) emphasize the importance of support of management and training as the leading factors towards successful SFA implementation; and note the perception of sales people as the second biggest factor. This puts pressure to the organization as a whole to communicate the value and the potential of the changes, if the full benefits are to be realized.

This chapter addresses the challenges of implementing guided selling as a combination of its parts and their challenges, as the academic field is generally in agreement that any implementation projects, of information technology in sales functions, face the same pitfalls and have same factors affecting success rate. Table 4.3.1. combines barriers and challenges of guided selling's components from multiple sources, thus creating a list of factors affecting the success rate of an implementation phase of guided selling.

The management support needs to be continuous, but non-interfering (Lientz & Rea, 2001), i.e. it should provide the resources and a clear vision to show their support beyond mere public announcements (Valmohammadi & Dashti, 2015). Changes that have an effect to the entire strategy are always expensive and the high costs of hardware, maintenance and expertise (Valmohammadi & Dashti, 2015) create challenges, as the

benefits aren't certain to realize, unlike in an investment to machinery where the benefits are easier to calculate (Toktas-Palut et al., 2014).

Table 4.3.1. – Barriers and challenges of implementing guided selling (Adapted from Toktas-Palut et al., 2014; Valmohammadi & Dashti, 2015; Dlodle & Dhurup, 2010; Buehrer et al., 2005; Lientz & Rea, 2001)

Barrier
Lack of top management support
Cost vs. benefit concern
External stakeholders' incompatibility
High investment cost of IT infrastructure and/or software
Inadequate business processes to support changes
Inadequate IT infrastructure of suppliers/business partners
Bad fit with the company culture
Inter-operability concerns with other used software
Lack of adequate technical and/or IT infrastructure
Lack of knowledge and/or skilled personnel
Lack of flexibility in process and documentation
Lack of system integration with suppliers/business partners
Change resistance
Security, confidentiality, and authentication concerns
Time needed for the implementation process

Most of the other factors are related to technical inadequacies, such as lack of IT infrastructure in- or outside the company; software compatibility or a mere bad fit with the company culture. (Lientz & Rea, 2001; Toktas-Palut et al., 2014; Buehrer et al., 2007) The costs and challenges of implementation rise considerably, if the prerequisites for the implementation aren't there, as it's not uncommon that all companies aren't aware of the amount of work related to increasing electronic commerce presence (Valmohammadi & Dashti, 2015).

Other than technical challenges, such as bad fit with the company culture and change resistance can be met with increasing management support and training. Buehrer et al. (2007) claims that the most common obstacles of SFA automation are personnel age and forcing of the change. They argue that the age factor is mostly related to the fact that older people aren't as comfortable with technology as younger generations, due to the low level of technology in work in their youth. They add that according to their research, this isn't as deep a pitfall as it seems. Older generations are open to changes, as long as sufficient training is provided, as their starting level is lower than younger generations that have grown surrounded by technology. (Buehrer et al., 2007)

The list of challenges is quite intimidating. Lientz & Rea (2001) argue that all of the reasons can be tied to one notion: the implementation projects are treated similarly to any standard projects a company carries out in its usual business. Standard projects have a clear start and an end by definition, but a guided selling implementation is a change to the entire operating practice and business strategy, which requires constant check-ups and continuous attention from the management even after the initial implementation phase. (Lientz & Rea, 2001)

All studies emphasized the meaning of management support and that basically all challenges can be conquered with high levels of support and continuous training. Organization needs to be adapted to the happening sales process developments (Toktas-Palut et al., 2014), address the complexity and problems of changes (Valmohammadi & Dashti, 2015) and provide adequate resources to change management (Buehrer et al., 2007).

4.3.2. Outputs & Benefits

The primary output of the guided selling process is a RFQ for a co-created solution for a customer's need. Ershov et al. (2012) say that the quotation is one of the most time consuming steps in the process of winning and order, as in the process, before a RFQ can be created, a rough dimensioning of the target needs to be done. This is especially challenging in situations where the offering is complex, as it requires more engineering in order to make a profitable RFQ, thus increasing the costs and time consumed (Hvam et al., 2006)

Thus, Hvam et al. (2006) argues that in a situation where the quotation-to-order ratio is low, there's huge potential in improving the efficiency, either by improving the ratio or costs affiliated with the process. Configuration systems allow companies to optimize the quotation and engineering processes, thus lowering the costs and time spent in them and increasing efficiency. Blecker & Friedrich (2007) agree with Hvam et al.'s arguments and introduce additional benefits of reducing iterations, errors, technical checking and effort spent in the RFQ process, as well as increasing probability of meeting customer's needs.

Guided selling, sales configurators especially, can bring various benefits to companies that integrate them properly. Tiihonen et al. (2013) argue that configurators allow companies to adapt customizable products for individual customers efficiently, thus supporting Abbasi et al.'s (2013) claim that the ability to offer customized products at the same cost and delivery rate as generic ones is a must to being competitive in the current business environment.

Palonen (2003) claims that configurable products and configurators working in unison can dramatically cut down the lead-time in sales-to-delivery process in the companies which used to manufacture tailor-made products on the basis of individual customer

needs. Mass production companies can switch to configurable products better serve individual customer needs, without losing the benefits of economies of scale. Therefore, with the proper usage of the configuration, the benefits of mass production and customer specification fulfillment can be combined. (Palonen, 2003)

Sales configurators aren't used only to create product variants that can be offered. Kopra (2003) brings up key features of a sales system that can be eased with configurators: pricing, bundling, catalogs, document generation and order functions. Integrating different sales and marketing operations to configuration systems allows companies to reduce the need for costly and outdated sales materials, have better margin analysis capabilities, have more consistent and better quality quotations and reduce the errors on orders. (Kopra, 2003)

Order errors can have costly consequences, unless it is noticed in time, especially regarding complex products. Trentin et al. (2013) claim that sales configurators help companies to avoid the product variety paradox, in which the vastness of a company's offering or the customizability might overwhelm customers with information. Ironically, companies have been enlarging their product portfolios in order to increase sales, yet it might backfire in a form of a lost sale (Gourville & Soman, 2005).

Guiding selling through a sales configurator allows resellers (Yu & Skovgaard, 1998) and customers (Forza & Salvador, 2002) to finalize the product specification themselves, thus increasing customer participation and lowering risk of an order error. The seller, on his part, gains more and better quality information about the behavior of distributors and end customers.

Customers are increasingly more often taking a more active role in the purchasing processes, often looking for relevant information of potential suppliers before an initial contact. Guided selling allows them to match an offering to their needs before creating potentially redundant work for the seller.

Customers can customize a potential offering in a customer interface and later in the process see how their efforts have affected the development and delivery of a purchased solution (Auh et al., 2007). This increases the image of service to the customer, when they can actively take part in the specification and development process (Huffman & Kahn, 1998), simultaneously as the seller gathers information about the customer (Berman, 2002).

From a non-academic point-of-view, Tacton (2014) is a software provider that has a guided selling software in the markets. They argue that there are five types of how guided selling adds business value to their customers:

1) Understanding needs
2) Funneling in on a selection
3) Selection impact
4) Propagation
5) Information presentation

In short, they claim that it helps a company's sales force to close more business with same resources by capturing the "--know-how of your most experienced product specialists and sales people – and puts it in the hands of your entire sales force." The benefits they argue guided selling has are completely in line with the ones provided by literature earlier in this chapter: shorter quotation process, better need mapping and error reduction. (Tacton, 2014)

Regardless of whether one looks at academic or non-academic sources, one thing is constant: It is crucial to be able to find the best possible product and service configuration from both the customer and the company's perspective. This is especially crucial in industries where the products are complex and/or relatively technical. The emphasis is on the constantly changing environment and new tools, process and techniques that are being developed, but the most critical aspect is improving the collaboration between sales and production, which guided selling is aiming to improve.

5. RESULTS

5.1. The case company

The case company, from here on Scanclimber, is a Finnish engineering company, which designs, manufactures and sells equipment and services for various high rise work tasks at construction sites. Their product portfolio consists of work platforms; industrial elevators and hoists; construction hoists and transport platforms. Furthermore, they provide technical consultation, spare parts and repair services for products from their portfolio.

Most of Scanclimber's customer portfolio is rental companies (95 percent) and the rest are end users. The rental companies operate in scaffold-, swing stage-, aerial work platform and equipment renting. The end users are construction and industrial companies or their subcontractors, which prefer to rent machines instead of buying their own. 65 percent of their sales are from Europe, 25 percent from the United States of America and ten percent from the rest of the world. (Scanclimber, 2015)

5.2. Sourcing processes at interviewed companies

5.2.1. Sourcing in practice

Company A divides its sourcing needs to two categories: fleet- and non-fleet-sourcing. Fleet-sourcing includes machinery and equipment for rental needs, whereas non-fleet includes all other sourcing, such as install-, maintenance-services and other, various equipment needed for daily work. The fleet-sourcing is further divided by product-groups, which have different responsible persons. The sourcing process itself has on average six steps that are always performed when it comes to large machinery. This is mostly due to the fact that the steps are basically a must in order to make sure that the investment is optimal.

The sourcing function is responsible for competitive tendering for all product-groups and a technical manager for reviewing the product quality and functionality. This includes defining the technical specifications and whether they can be altered, as they have more technical know-how than the sourcing personnel. This way of working is part of the company's group strategy, which guides the way of working of local country-based teams.

The sourcing of rental machinery and making of frame agreements belongs to the centralized sourcing function, but the operative purchasing is performed by local offices

based on their current needs. In situations where no frame agreements are done, the party responsible for completing an order from a customer performs a tendering process from agreed suppliers.

Company B, defined as a SME in this study, has a sourcing portfolio, which contains all machinery and equipment related to building needs. This includes everything from small drills to large lifting equipment. Due to the smaller size of the company, there are two people responsible for the sourcing activities: the CEO and chief of operations. Smaller equipment, such as drills etc., can be purchased by an office manager from accepted suppliers, but larger investments are discussed between the two personnel in charge and ordered directly from the manufacturer.

Company C is a SME as well, but differs from the other companies in that they do not compete in the open market as the others, but they work in a supporting role for the entire business group. Their sourcing portfolio is in line with the others, as it includes all building related equipment that is further rented inside the business group. Due to being a part of a larger business group, the company C has adopted a category sourcing model, much like company A, based on product groups. In most cases, there are one to three decision makers in the process, depending on the product group in question.

Company D is the other large company (turnover exceeding 100 million Euros), in this study. They have yearly equipment investments, which can further be divided to reinvestments and expansion investments, and daily need-based sourcing items. All orders are made directly to the manufacturers, but they are co-operating with importers as well. Their process is quite similar to the other large company (A): sourcing negotiates frame agreements and prices and unit managers choose the products that are best in each situation, based on their better technical know-how.

As an answer to reactive need-based investments, company D can earmark products with manufacturers with a six-week cancelling period prior to the order placement day. The decision making responsibility transfers according to their category sourcing model, which is also divided based on product groups, i.e. lifting machinery are a different category than small equipment. Similarly to company A, the business group sets a certain yearly investment budget, in which the sourcing operations are quite informal, but the process is still quite similar always due to practical reasons and group strategy guidelines.

5.2.2. Decision-making criteria and analyses

A theme that arose in every interview is that the industry and its sourcing needs are extremely need-based, which creates challenges for forecasting. Companies A and D have certain forecasting methodologies in use, as do the other two, but to a smaller extent. Company A states that history data is mainly used in sales function in demand forecast-

ing, which in turn is applied in machinery need casting. The forecasts are based on historical demand forecasts, which are further reflected to current machinery portfolio's utilization rates, maintenance needs and current capacity product group-wise.

If current utilization rates are reaching their maximum values, it has an effect to the capacity that the company has to offer, thus raising a question towards a need for expansion investments. If sales forecasts suggest that current capacity won't meet the expected demand, the sourcing manager begins planning a business-case-analysis of whether expansion is rational. Factors that have an effect to demand levels are seasonal demand changes and average historical yearly demand. The capacity levels are crucial in scenarios where sales might be lost due to not being able to supply. All offers are based on two things: does the company have the capacity currently to meet the demand and can they gain additional machinery in time for the order.

Company D's forecasting methodologies are quite similar. They have yearly planned machinery investments that are based on the same factors are company A's. Utilization rates, machinery age, forecasted demands and rational rental rates are the main components of analyzing whether new machinery is needed. The main difference to company A, is that they have more business controllers that are more actively following the factors and their changes. These analyses are used as a basis in creating a yearly investment budget with the sales function and reflected to last year's EBITDA.

The budget for machinery investments is divided percentage-wise for each month of the upcoming year, based on the created analyses on whether new equipment are needed and when. Within the budget, the unit managers have the authority to make investment decision by themselves, but they also have the option of applying for additional budget if needed. The need for extra resources must be indicated quantitatively by a business-case analysis.

The sales function is in a big role in product portfolio management, as they are constantly communicating with the product management function about potential projects, which gives them a sense of incoming needs. Historically, the created forecasts are reliable, as both companies are large in size and thus have a great network within the industry allowing them longer preparation cycles than the SMEs. Similarly to company A, company D reflects their demand forecasts to their current capacity, after which a business-case-analysis is performed whether new machinery are needed or not.

The SME's have different processes in use. Company B holds yearly meetings where they try to model the upcoming year's demand levels, based on historical data and reflect that to their current capacity, similarly to the two large companies. A challenge that SMEs face is that machinery ties a significant amount of capital in it, i.e. same number

of machinery is relatively a lot more significant amount of capital to SMEs than larger firms.

Due to this, historical data of utilization rates, costs and gains of current machinery are used to approximate a potential base capacity level, with the aim of only having products that make money for the company. All investments are always need-based. A thorough cost versus benefits analysis is performed for all investments in order to minimize redundant machinery and as an answer to the reactive nature of the industry.

Reactivity is a theme that is highest in company C. They do not make any kind of forecasts, which might be explained by the fact that they do not compete in the same sense as the other companies and thus do not have a need for demand forecasting in the same extent. Instead, their operating model can be characterized as a crosscut of large companies and company B. The main business group defines a budget for them that is followed. Otherwise the entire process is quite free-flowing, because as long as they stay within the budget, they have the authority to react to needs communicated by the business group.

The unit manager at company C doesn't see the benefit of forecasting, as all projects are by nature different, yet sharing similar characteristics. They have a high base capacity level, which allows them to respond to needs of worksites that cannot be anticipated until the project starts. In situations where the own capacity doesn't suffice, an analysis on whether it's more rational to purchase the needed equipment or rent it is performed. What all four companies have in common is that the product portfolio is under constant surveillance in order to determine whether a product is still good to use or whether it is too old. The most common reasons for a reinvestment is the increased maintenance costs of too old of a machine or customer feedback on current portfolio.

The investment decision analysis methodology is basically uniform in all four companies. All machine purchases are deemed as investments due to their high price, thus raising a need for a business-case analysis. The analysis contains the following quantitative factors in all companies:

- Transaction cost
- Maintenance costs
- Expected rental price level
- Effect on sales
- Usage time
- Minimum utilization rate
- Salvage value
- Depreciation time

Basically the analysis methodology can be shortened to the term life cycle costs, LCC from now on. All four companies feel that the mere transaction cost gives no value to them, as the products move from multiple customers to others, thus increasing the importance of LCC and its management. All companies use the above mentioned list of quantitative factors in their cost versus benefits analysis in order to determine how much and in what conditions does the investment make them money.

The analysis is performed by the interviewed persons in their respective companies as groundwork for higher management on why the decision should be done. In the SMEs, the interviewed personnel have the authority to make the investment decision by themselves, as do the persons in company D, if it is within the budget. The only company that needs to get an approval from higher management is the company A, as the final decision transfers to the person responsible for the respective business unit.

The analyses also include qualitative factors that are as concordant between the companies as the quantitative ones. Quality and safety are the most important factors, as they are the calling cards of the companies and their products. The products are used by multiple different users in different conditions and with different utilization rates. This puts pressure in the quality and endurance of the products that they supply to their customers.

The large companies (A & D) also take new and potential products for pilot runs. The goal of the pilot runs is to test the products in practice to make sure of their quality and functionality. If deemed acceptable, they have the possibility to become regular products. The piloting process of company D is stricter than the other large companies'. Every quarter, a manufacturer has the possibility to enter the piloting process and gain a global brand position in their portfolio. This is due to the fact that as a global business group, they move equipment between countries and thus there is a need to have uniform brand portfolio for used equipment.

This is common in all the other companies as well. The brand portfolio is tried to be kept as small as possible so the company has the resources to maintenance the products themselves if necessary, as well as practical reasons such as operating system familiarity and spare parts availability. The brand portfolio is also kept quite small due to practical reasons. Company C states that the manufacturer pool is quite small, thus all suppliers are known by personal extensive experience. This is common with all interviewed companies, as they all have structured supplier selection methods. May it be yearly determined frame agreements with suppliers to create a priority list based on lowest LCC costs (companies A, B and C) or a clearly stated method such as ABC-classification (company D), with the same classification logic behind the curtains.

This creates a dilemma for manufacturers: How can you gain name for yourself, if you need name to make sales? The piloting processes are one way to get one's foot between the door, yet it is equally important to understand the dynamics behind supplier selection criteria other than the ones already mentioned. Customer input is deemed extremely important in all companies on what machinery they are looking to invest in in the future and the importance of after-sales was highlighted in two interviews (companies B and D). The chief of operations in company B also expects the industrial design to become more important in the future, as most of the equipment are visible outside worksites as well to passerby's.

5.2.3. Documentation and searching for information

The documentation processes aren't in as a high of a priority in the smaller companies as in the larger ones. Company A has a harmonized documentation process on the business group level, in order to maintain a uniform way of working. This is the situation in company D as well due to the global nature of the entire business group in both companies. On paper, the sourcing processes in the large companies seem quite set in stone, but in practice they are quite flexible in both companies. Company D shares the most characteristics with the SMEs in regard to process flexibility, as both have a set investment budget in which they have the authority to make necessary investments themselves.

What is of note, is that the SMEs do not have documented sourcing processes, but the steps are quite similar to the large companies due to the nature if investment processes in general. RFQs and business-case analyses are performed every time, but on paper they are as flexible as they are in practice, in contrast to the larger companies'. But what all companies have in common is that the sourcing processes of investment goods are extremely straightforward from need recognition to delivery.

The sources of information are quite similar in all companies, regardless of their size. All interviewees mentioned that the aim is to have the best and most modern machinery in order to stay competitive. All companies follow actively industry-specific magazines, trade fairs and competitors' product portfolios in addition to customer input that was mentioned earlier. References are mainly used only in situations where a new manufacturer attempts to enter the market, as the current players are well-known. They are either asked directly from the possible supplier as well as using Internet search engines, such as Google for background work.

Two of the interviewees (company D, persons A & B) mentioned that the investment cycles of their industry are well-known and thus manufacturers increase their contacting efforts during falls. The contact from manufacturers is a theme that rose in all interviews, as the industry is perceived as quite conservative by the interviewees. Thus the

importance of face-to-face communication was said to be of extreme importance in information seeking as well as a communication method in complex sourcing activities. One of the interviewees (company B) wished that the manufacturers would increase their after-sales-activities and would inform them of their R&D-plans as well for them to communicate further in the SCM.

5.3. Digitalization within the company

The level of digitalization is quite divided between the company sizes. All companies have digital tools at least on some level in use, but the depth and strategical importance is where the differences show up. All companies, except for company C, have their own websites where the products are shown in catalogs. The main goal of all digitalization in the four interviewed companies is cost follow-up. The product portfolio is under constant surveillance in order to track their products and their performance, may it be via Microsoft Excel (company B) or separate software (companies A, C and D).

The company A states that without digitalization, business wouldn't be possible due to Internet's great role in information search and Microsoft Office tools in analyses and documentation processes. RFQs and orders are created digitally in all companies, but from here on it's clear that the bigger the size of a company, the higher the level of digitalization is.

The smaller companies do not have any electronical purchasing or selling tools in use, as both SMEs state that the main uses of digitalization in them are cost follow-up and unit tracking. The main reasons for these decisions are quite clear. The chief of operations in company B feels that digitalization is on the rise in their industry, but due to their small size, electronic tools are deemed not necessary outside financial services. Whereas company C doesn't feel that the role of IT in sales or marketing doesn't need to be increased due to them not competing in the markets in the same sense as the other three companies do.

Regardless of these reasons, both interviewees in the SMEs have high beliefs that the personal know-how and selling are still the best ways of conducting business. This is emphasized by the interviewee from company B especially in the context of complex goods. He argues that complex offerings are easier to be optimized and the need recognized via phone or in face-to-face meetings, yet feels that the importance of digitalization will only increase in time in their respective industry.

The larger companies (A & D) have a higher level of digitalization than their smaller counterparts. Company A has an electronic procurement system, which is about to be distributed to the entire business group, in place for order creation. This is mainly for automating the order creation process regarding bulk-products, not investment goods.

All orders for investment goods are created and received in formats that are compatible with Microsoft Office tools, as an EDI solution was tested, but later deemed not good enough.

Company D is the one with the largest amount of electronical tools and thus highest level of digitalization of the interviewed companies. Most the digital tools are in internal use and in business support roles, such as separate analysis software in back-office functions, tablets on worksites and unit tracking software. These are deemed as necessary electronical tools in their business context. Tablets and smart phones allow personnel at worksites to receive manuals and other information instantly and in different languages, thus lowering the language barrier with foreign workers.

They also have electronic purchasing software for bulk-products and spare parts with the intention of expanding it to purchasing machinery, if the pilot project is successful and useful. Whereas other interviewed companies (company C) have unit tracking software for cost follow-up, company D utilizes the same concept more widely. Their products have GPS-tracking and user history gathering functions to limit who can use the machines and when, in order to reduce the risk of stealing or misplacement. The tracking portal is also accessible for selected customers in their respective worksites.

The utilization of digital tools in sales and purchasing is quite limited at the moment at the company. They have their own websites where a rental portal is open for customers to choose products best fitting to their needs, but only to selected customer with the aim of expanding it to everyone. The logic behind the portal is that the customers can have a floating price offer for products, based on their rental history and current market price level. I.e., the more you use their products, the better price you get. This lessens the need for yearly frame agreements, thus creating more business whilst increasing customer loyalty.

The current internal IT network is the largest of in company D, but person B also argues that it creates challenges. The software do not communicate with each other, thus decreasing the benefits and rendering most of their functions redundant. In his field of work, he feels that the industry is conservative by nature and that has an effect in what applications are necessary and what not.

Both interviewees from company D have a strong feeling that the digitalization in their industry is about break into a bigger role than it currently has, yet contradicting the rationale on why. Person A feels that purchasing machinery digitally has great potential in the future after the good feedback on their own rental portal, whereas person B feels that information search about specifications and rental situation will be the main driver for increased digitalization whilst personal selling keeps its role as the main sales avenue in the industry.

5.4. Attitudes towards guided selling

5.4.1. Prior knowledge of the concept

The prior knowledge of digitally guided selling was nonexistent to all interviewees. After explaining the basic idea of the concept with an example from Audi's car configurator, all interviewees understood the logic behind it and two of the interviewees recognized it, yet the terms used weren't familiar. Most of the earlier experiences were tied to B2C-environment, with the exception of persons from company D, and company A to some extent.

The interviewee from company A compared the concept to their own internal purchasing software, which recommends for example computer mice or DVI-cables when ordering a laptop internally. Then again company D had more extensive experiences of the concept. They have a portal in use that allows their customers to choose a configuration of products and equipment, from the company's portfolio, matching their needs that will be delivered to a requested worksite. The service configuration can be altered monthly depending on the phase of an ongoing project. Also, one of their suppliers has a similar service in place, a software that optimizes the need for industrial lifts based on the inputs from project managers. The software optimizes the lift size, type and amount of the lifts needed at a worksite. The service is perceived to have brought company D more sales due to increased customer requests of this service.

5.4.2. Perceived benefits

The perceived benefits and need for digitally guided selling in purchasing functions divided the interviewee pool to three groups: those that feel that it would add next to no benefits at all (company C), those that feel it would bring benefits in automating processes (company B) and those who feel that it might have some benefits if implemented properly (companies A and D).

The unit manager from company C feels that the industry is too complex and the need recognition is too hands-on that a configurator would bring any real value in purchasing equipment. Basically every case they've had, they've had to personally go to the worksite and define what kind of a solution is needed at the time. The personal know-how of the equipment and hands-on situation inspection are in too big of a role that a configurator would help in analyzing the problem, thus rendering it useless. He does add that it might bring some value in automating spare parts ordering, but doesn't see it very significant.

The chief of operations from company B mostly agrees with that view of the potential benefits. The industry is at least at the moment extremely conservative and the special knowledge of the company is in too big of a role for guided selling to work, as the

knowledge at the worksites is too low of the subject. The basic requirement for digitally guided selling would be that their customer has the expert knowledge of what they need. According to the interview this isn't the case, thus creating a too big of a risk of purchasing and further delivering a wrong product for their customers' needs.

The risk is even higher in complex investment goods, such as lifting equipment due to the amount of money in question. This leads to a situation where face-to-face interaction is the best solution, as then the specification is easiest to perform. From a need recognition and equipment specification point of view, it might have some benefits in situations where the basic specifications are performed hands-on but the communication is done via the tool, in a form of guiding the choices and acting as a check-up list. Although the current way of working is seen as equally useful, as the analyzing of needs is already performed with Microsoft Office tools. He does add, similarly to unit manager from company C, that it might have potential as a spare parts purchase automation tool.

The larger companies have a more positive outlook on the configurator and guided selling as whole. The sourcing manager from company A feels that it has the potential to ease their work, as the technical aspect of the sourcing process is not her responsibility. Most of the benefits are seen in automating order processes in spare parts, but also in ordering bundles of the needed product, spare parts and services. This might fasten the process of getting products up for rental.

Although, it is important to note that these benefits are mostly seen in cases where the specifications are already decided, thus making the configurators an order automating tool and not a configurator in the classic sense. Also, she feels that integrating such a tool in the purchasing processes of complex goods is very high, due to the value of purchases and technical complexity of the goods.

Company D and the interviewees there are the most positive towards the concept, perhaps due to more extensive experiences of it. Contradictory to the SMEs, the person A feels that configurators could speed up the price comparison process, as by phone or e-mails it's quite slow. The most important factor is that the first step of a configuration would need to be need recognition and not a model or a certain equipment, i.e. for example the need to lift three people to a certain height as a starting point instead of choosing product A, B or C as the first step.

Spare parts order automation is a theme that arose in both interviews as well. The company has a unit tracking software in place, which shows the serial number, model et cetera of a product, which needs a spare part. A 3D-modelling of the product that allows pinpointing the needed spare part product- and model-specifically and ordering it instantly would be of great potential, as long as it's mobile and thus usable at worksites

instantly. It was mentioned that Scanclimber already has a flaw diagnostics service in place and turning it mobile would also be useful.

The prior experiences of the concept have given the company views of product categories where digitally guided selling would provide value. In basic lifting equipment the potential is seen as relatively small due to the fact that specifications are quite set in stone, thus making the concept mainly a checking list. But in more complex lifting equipment such as lifts, the potential is visible. If the starting point is the need to lift a certain amount of people to a certain height, a configurator would provide great value in optimizing the solution to the need. It would also allow more complex customization options and remove the redundant characteristics and their forced selling. The person B also sees the same potential in optimizing horizontal equipment selection.

5.4.3. Perceived challenges

The list of benefits is quite one-sided towards large companies and how they perceive their possibilities, but the list of challenges is more uniform. Company C sees the entire concept as redundant and not yielding any benefits, thus didn't list any challenges either in addition to the fact that it wouldn't bring any value. The data and linkages in configuration process are themes that raised questions in all other four interviews. The sourcing manager at company A emphasized the amount of work that is required to arrange the master data and keep it up-to-date at all times. If the data and linkages aren't spot-on, the risks of losing sales due to not having up-to-date configurations, selling a machine that cannot be manufactured or selling with an incorrect price are all risks that came up in the other interviews as well.

The variation of products is high within the industry, according to the chief of operations at company B, which only increases the amount of data that needs to be perfect. The RFQs are rarely correct even currently, as the specifications are changed by their respective customers quite often, thus forcing to configuration to be done again. He feels that from this point of view, managing the RFQs and their editing is easier the way it is handled at the moment.

The variation of products and their specification between different year models is also a theme that raised concerns. The data needs to be exact and not approximate, thus creating challenges in creating a manageable amount of configurations, according to the product manager B. From a spare point of view, he was concerned on how guided selling would aid in situations where from personal experience can be determined that a new product isn't needed if the current product is altered slightly. An example he gave was of a bucket loader that could reach needed dimension if a part of it is changed.

A concern that also was common (companies B and D) was that is using the new tool worth it in comparison to old methods. The risk of a misconfiguration is quite high, as

most needs must be determined case-by-case, thus increasing the amount of configurations and the time it might consume to create one. The time spent in creating a configuration and data reliability were the most common concerns in the three companies outside company C. Yet, the interviewee from company B feels that the generational change might be the determining factors on the usefulness of guided selling, as currently the industry is conservative and age distribution one sided to older generations.

5.5. Summary of the results

The main findings of how the customers firms conduct their sourcing activities correlate with the size of the company in question. The larger companies (A and D) have more formal sourcing processes on paper, but in practice they are as flexible as their smaller counterparts'. The reason for formality in them is that they have documented processes that are followed for practical reasons. All purchasing decisions of investment goods follow the same steps as the smaller companies do, but documentation requirements in the larger companies require more formal process charts.

The large companies have clear category management models where the decision-making responsibility transfers product-group-wise, whereas the smaller ones have mainly one or two persons who handle all sourcing activities due to resource constrictions. What all companies had in common was that they emphasized the reactivity of the industry, which creates challenges for forecasting processes.

Forecasting methods are basically the same in the three companies that have them in place (A, B and D), but differ in the way they are conducted. The larger companies have other functions that are responsible for creating demand forecasts that are then reflected to their current product portfolio on its state. If the current product portfolio is deemed inadequate or reinvestment needs are identified, they start preparing business-case-analyses for the investments. The company D follows the same methodology of trying to anticipate the upcoming year and its demand, but this process isn't conducted by a sales function, due to that not existing. Instead the chief of operations and CEO of the company hold a meeting where they try to model the upcoming year and reflect that to their current portfolio.

The analysis methods are uniform in all four companies. The business-case-analysis is based on the expected life cycle costs, the projected demand and achievable rental price in addition to a number of qualitative factors, of which safety is the most important. But these factors aren't the only ones that have an effect in the supplier selection, as all companies attempt to keep their supplier portfolios small, to ease maintenance and other supporting services. The larger companies had structured processes for new supplier and product acceptances, whereas the smaller ones trusted mainly in their personal knowledge and customer input.

The level of digitalization correlates with the size of the company as well. All four companies have digital tools in place, but the smaller ones use them only for cost follow-up, whereas the larger companies have more electronical tools in place inside the company as well as for supplier and customer interaction. The smaller companies haven't felt the need for the same tools due to their small size and the conservative nature of the industry. All companies feel that digitalization is increasing in the industry, but the direction of its evolvement is unclear. The interviewees at company D had different mindsets on the direction and future applications of digital tools in their industry, whereas others felt that the direction was still unclear.

Sales configurator and guided selling weren't familiar terms with any of the companies at first, but after explaining the main idea of them, they all had experiences with a configurator, either from their personal life or from work-related context. The company D has most extensive experiences of configurators, as some of their current suppliers already had such tools in place as did they themselves as well. Company C felt that the configurators would serve no purpose in their industry, but the rest felt that spare parts ordering automation could be one useful function. The two large companies where more positive towards the concept and felt that it could also have other uses and it has the potential to ease them in their work. Company D highlights how most of the potential could be in lift need optimization due to their earlier experience with such a service from another supplier of theirs. The trustworthiness of data and linkages was the main concern in companies A, B and D. The amount of work needed to update the master data to a sufficient level is huge and the amount of money involved in investment goods purchases is significant, which raised concerns. Company A especially felt that the bar of integrating such action in investment goods purchasing function is extremely high due to the affiliated risks.

5.6. Discussion

The purchasing processes in the interviewed companies it is important to see that the formality of the processes goes hand-in-hand with the size of the company. The smaller companies (B and C) have no need for formal documented purchasing processes and the bureaucracy that they bring with them. Due to the scale of their business, mere Microsoft Excel-files are good enough tools to address documentation activities. The larger companies (A and D) then again have the need for documented processes and structure that they bring with them due to their global nature, scale of business and resources. They have category models in place and companies of their size need to make sure that the way of conducting business activities is uniform in all functions globally.

The smaller companies have "less moving parts" and decision-making responsibilities are focused on few people company-wide, whereas the larger companies have different businesses of the same size or bigger than the entire business of the small companies.

This has practical challenges such that managements have to address and create guidelines and more structure, which translates between different functions inside the organization.

The size of product portfolios and how to manage them is a challenge that the companies face differently. Larger companies have more resources to follow the profitability of products and have products themselves. The chief of operations in company B states that one of the biggest challenges they face is the mere capital tied to the machinery. Investment goods tie a significant amount of capital in them thus limiting the scale of business for small companies, a challenge that larger companies face differently due to more available resources.

Surprisingly, the level of forecasting was quite low, as all companies argued that the industry is extremely reactive-based, thus difficult to forecast. What all companies had in common was that they forecasted their machinery needs by forecasting their products' demand. Company C had the lowest level of forecasting, as they stated that they have a high base capacity level and reacting to upcoming needs was easy, as they weren't competing in the same sense as the other three companies, but acted as a supporting function to the group business only. This allowed them access to better knowledge of upcoming worksites and based on their experience and knowledge, they could approximate what would be needed and in what amounts. The other companies didn't have this luxury and thus attempted to approximate the possible demand of each year, based on historical data and built industry network.

The purchasing processes of the interviewed companies do not follow the classical purchasing processes such Johnston & Lewin's (1996) or Berthon et al.'s (1998) that are presented in figure 2.2.1., but the more recent model of "muddling-through" by Makkonen et al. (2012) in figure 2.2.2. This evident, as three companies have a yearly investment budget that within they are authorized to make investment decision if the business-case-analysis is valid. The fourth company has group level guidelines of how to conduct sourcing activities, thus filling the characteristics of "muddling-through" locally. The reactive-nature of the industry guides companies to implement this purchasing process unknowingly.

Similarly to Makkonen et al.'s (2012) model, all companies conducted business-case-analyses on investment decision, in order to use rationality at an attainable level, given the resources at hand on an organizational level. The analysis principles are uniform in all companies and they include quantitative factors such as transaction cost, maintenance costs, expected rental price level, effect on sales, usage time, minimum utilization rate, salvage value and depreciation time. Qualitative factors such as safety and quality were deemed equally as important to the quantitative ones. The goal of the analysis was to determine whether the machine would make money for the company and under what

conditions. The analyses were conducted also a couple of times a year in order to prepare for possible reinvestments that were noticed during product portfolio analyses. If a machine was identified as not profitable anymore due to its age or risen maintenance costs, a reinvestment analysis needed to be conducted.

From the interviews it wasn't possible to identify one clear source of information that would've been significantly more used than others. Suppliers are aware of the investment cycles in the industry, thus increasing their contacting efforts during autumns. Otherwise all companies listened to customer input and took part in trade fairs, read industry specific literature in physical and digital form and relied in the knowledge they had in their company, thus using all four information sources by Talonen (2013).

Table 5.7.1. – Taxonomy of information sources by industrial buyers (Adapted from Talonen, 2013)

	Personal	Impersonal
Commercial	Personal selling, Video conferences, Seminars, Interactional websites, E-mail	Printed advertising, Sales literature, Direct-mail, Informational websites, Mass e-mails
Non-commercial	Personal experience, Top management, Users, External consultants, Colleagues, Sourcing function, E-mail, Word-of-mouth	News, Trade associations, Rating services, Internet newsletters, Bulletin boards

Based on the level of digitalization, the argument by the interviewee from company B, that the industry is very conservative, stands. All companies have digital tools for following the performance of their products and their costs. The smaller companies do not see them necessary due to their size, whilst they manage with Microsoft Office tools sufficiently. Surprisingly, the amount of IT applications in sales and purchasing functions was quite low in the larger companies as well. Company A has an electronic ordering software for internal use and they do see that digitalization is on the rise in their respective industry.

The highest level of digitalization is in company D, which as multiple electronic tools, such as a unit tracking software, which tracks the location, user history and limits who

can use machines and at what hours. They also have a piloting project of a software for electronically purchasing bulk products, which they plan to expand to investment goods as well, if the piloting project is perceived as successful. Although, the interviewees at the company had different opinions on how digitalization is going to evolve in the future. The person A feels that electronic purchasing is only a question of time even in the context of investment goods, whereas the person B thinks that information search will merely grow its role, but purchasing activities will remain as they are.

The expectations of the future of digitalization were quite shattered among other interviewees as well. Company A believes that the role of digital tools will expand in purchasing activities, as does the interviewee at company B, when the current generation retires and younger generations take their place in the industry. Yet they couldn't pinpoint on the direction this would take the industry. The interviewee at company C kept his general line and feels that digitalization shouldn't change the current way of working, but this outlook might be affected by their different competitive situation.

The knowledge of guided selling is surprisingly low, regardless of the conservativism in the industry. Neither of the small companies have business experience of the concept and company A has only of a similar idea, regarding their internal equipment ordering software. This leads to a vision of the sales configurator in the sense of a mere order automation tool, as the perceived risks are too high in the context of investment goods (company A) or the importance of personal selling and expert knowledge cannot be replaced with a configurator (companies B and C).

The company D has business experience of a sales configurator and they themselves have a configurator in place for their customers. Their customers can configure a bundle of products and services for a month at a time, which will be delivered to the requested worksite and can be altered every month. In addition, one of their lift suppliers has a well-received configurator which optimizes the type and amount of lifts at the worksites based on the entered specifications.

The perceived potential is in line with the level of digitalization in the companies. Company C doesn't feel the need for either and treats IT applications as necessary tools for business support instead of possible business drivers. Company B is in the middle-ground, as they feel that digitalization and configurators have potential, but the size of the company limits their use of these tools. They also feel that in the classical sense of a configurator, guided selling doesn't have that much potential than an order automation tool will. Though they do feel that digitalization is on the rise and the change of generations in the industry might change this view. This view is also supported by the general notion that the younger the interviewee is, the more positive outlook one has on the concept.

Company A perceives potential in the concept, but as the discussion proceeds, the risks and challenges of implementation exceed the potential benefits, concluding in the notion that an order automation tool might be the safest bet, due to the affiliated risks. Company D has the most experience with sales configurators and highest level of digitalization, thus unsurprisingly they had the most positive outlook on the concept. Lift configuration was seen as the most potential product group in guided selling context, due to the high number of moving parts and great experiences with configurators in that context. Basic lifting equipment was deemed as too general specification-wise for a configurator to have any impact.

From an implementation point of view, the most critical factor was that the configuration should start from a need and not selecting equipment or a model as the first step. Companies B and C emphasized how in most cases they have to go to the worksite and then determine what they would need, and a configurator needs to go around this problem. They were also concerned that a configurator would double their work, as they'd have to analyze the worksite and then remake a configuration based on it. This was also emphasized by company D and thus they argued that software mobility is a must so configurations can be done on-site.

Yet the main concern of companies A and D was the data reliability. Investment goods are expensive and complex and the workload of arranging master data in reliably is huge. They were concerned on whether the data can be trusted, as the risks are remarkable. This was emphasized even more with the other two companies due to the conservativism of the industry and age distribution within the industry. Personal selling is a way of working that is deemed trustworthy and sufficient enough, yet digitalization couldn't be side barred. Currently, guided selling is perceived to have limited potential in the traditional sense of a configurator, as most felt that risks outweigh the potential benefits and thus the bar to integrate such a concept in purchasing activities is high. Yet, one product group, which is perceived to have configuration potential, was identified as lifts.

Digitalization is coming to the construction industry, as interviewees stated, but the extent of it is still unclear. An important notion of the study is that the younger the interviewee, the higher the level of digitalization is in the company and the more sales configurator experiences interviewee has, the more positive outlook they have towards the concept of guided selling.

6. CONCLUCIONS

6.1. Answers to research questions

This chapter attempts to answer the research questions, based on the literature review and empirical research that was conducted. The main research question is addressed after the sub questions, which were:

- *How do the focal companies arrange their sourcing activities and what are these activities?*
- *What is the level of digitalization in the industry, what does its evolvement look and what are the attitudes towards guided selling in their context?*
- *How guided selling should be implemented in regard to the current sourcing activities?*

The interviewed companies can be divided into two categories: those with category management model and those who don't. The larger companies had product category management models in place due to their larger size and thus transferred responsibility based on them. The SMEs had no category models in use, as they didn't feel that they were needed. What all companies had in common was that they all purchased equipment and machinery related to construction activities. The purchasing processes followed Makkonen et al.'s (2012) model of organizational buying as "muddling-through", as the industry was seen as very reactive-based and thus all companies had guidelines under which to operate in considering the situational restrictions as well.

The level of digitalization was relatively low in the interviewed companies, especially in the SMEs. The large companies had digital tools in use, company A in internal use only whereas company D had some for selected customer only, but not for the entire customer portfolio. Three of the four companies felt that digital break is about to take place in the industry, but the direction of it was still unclear. Two persons felt that their importance in sales and purchasing functions will rise, whereas the others felt that information seeking via digital tools will rise, but the way of conducting sales will stay as it is.

The attitudes towards guided selling were divided. The younger the interviewee, the bigger the company and the more experiences the interviewee had with digital tools resulted in a more positive outlook towards the concept, yet many felt that the industry isn't quite ready for sales configurators in the traditional sense of configuration. Order

automation tool gained some support and company D felt that a sales configurator had potential in lift configuration, but not in other product groups.

The bar of implementing guided selling in purchasing activities was seemed extremely high, due to the risks affiliated with it. Most concerns were raised by whether the linkages and data could be trusted, as the products in question are expensive and complex. This was only emphasized by the fact that the industry is extremely conservative and personal selling is still high and there aren't that many suppliers. Yet, one of the interviewees, who felt in general that digitalization and configurators do not have potential at the moment, argued that a generational change is about to happen with digital revolution and this might have effects to the potential that cannot yet be determined.

Based on the sub questions and literature review, the main question *"What is the potential of guided selling in investment goods sales?"* can be addressed. Larger companies did see potential in the concept, but limitedly. The industry is about to face a digital revolution, which might change the perception of guided selling. Based on the conducted research, it is impossible to determine absolutely whether guided selling has potential or not. The main findings of this study guide on what characteristics a sales configurator should have to succeed and what challenges it faces. In order to determine the potential, more thorough research is required.

6.2. Contributions and implications for future research

This study contributes academically by suggesting a framework for a concept, which is researched very scarcely. This study provides a suggestion based on a literature review and brainstorming sessions with two lecturers of the concept. The attitudes towards the concept and guidelines to implementation are also provided in practice. Furthermore, this study increases understanding of organizational buying in B2B-context and how it's conducted in relation to academic models. The gathered research can be utilized in further research of guided selling and in how sales configurators should be implemented and what characteristics they should have.

The practical contributions of this study are related to increasing understanding of the case company's customers' way of operating. They are provided with a view on how their customers conduct their purchasing activities and what analysis methodologies are used when comparing offerings. They also have a glimpse of the potential of guided selling and in what areas to focus on in the project. Lastly, they get information on their competitors' good practices and what possible pitfalls and factors they should consider if and when implementing guided selling in their operations.

To fully understand the potential of guided selling, more research is required. This study can be used as a starting point on aspirations to understand guided selling and in what

ways it can provide value. The framework in this study is a mere suggestion of what it could be, yet there isn't an identifiable consensus on the definition of guided selling or understanding of it and its parts in the academic field. The need for further research is evident, as companies worldwide want to achieve more with the same amount of resources as currently and in theory, guided selling has the potential to be a crucial part of this evolution.

Digitalization is an increasingly noticeable trend even in a conservative industry such as construction. The direction that digitalization will take the industry remains unclear it is important to study how it will show and how it should be prepared to. In the study it came up that smaller companies do not see the need to have digital tools in the same extent as larger ones do, may it be for resource-based reasons or practical ones. For SME's, it's crucial to know whether they can succeed in the future without digital tools and how the generational change will affect the industry and its level of digitalization.

6.3.   Limitations

This research had some clear limitations. A single-case study as a research method doesn't advise to generalize the results of it (Saunders et al., 2009). Furthermore, a case study can be subjective as a research method, thus increasing the possibility of errors by the researcher and his views of the matters. Also the sample was relatively small (five interviews in four companies), thus increasing the risk of not gaining an understanding of the entire industry. Though, the companies varied in size and their competitive models, which compensate the small sample size to some degree.

The literature review revolved around the themes of sales management and electronic commerce, yet it doesn't directly link any of the electronic tools to the concept of guided selling, which might create some disparity in how the concept is understood. The framework is based mostly in the researcher's own interpretations of what it could consist of, brainstorming sessions with two lecturers and non-academic sources, which may lower the reliability of the suggestion.

Interviews as a method are also subjective to bias. As a research technique, it is vulnerable to subjectivity from the interviewers and interviewees. A risk of misunderstandings of questions, phenomena or answers is always present, which might have an effect of some degree. It is also important to note that the questionnaire that the interviews were based on evolved between interviews and that the researcher was quite inexperienced in conducting such research methodologies in addition to making notes at the same time.

BIBLIOGRAPHY

Aarikka-Stenroos, L. & Makkonen, H. 2014. Industrial buyers' use of references, word-of-mouth and reputation in complex buying situation. Journal of Business & Industrial Marketing, Vol. 29, Iss 4, pp. 344-352. 2014.

Abbasi, E.K. & Hubaux, A. & Acher, M. & Boucher, Q. & Heymans, P. 2013. The Anatomy of a Sales Configurator: An Empirical Study of 111 cases. CAiSE'13 - 25th International Conference on Advanced Information Systems Engineering – 2013, Valencia, Spain. pp. 162-177. 2013.

Adamson, B. & Dixon, M. & Toman, N. 2012. The end of solution sales. Harvard Business School.

Anderson, J.C., Narus, J.A.and Narayandas, D. 2009 Business Market Management; Understanding, Creating, and Delivering Value, 3rd edition, Upper Saddle River, New Jersey, Pearson Education Inc., p. 496. 2009.

Alt, R. & Puchmann, T. 2005. Successful use of e-procurement in supply chains. Supply Chain Management: An International Journal, Vol. 2, Iss. 2, pp. 122-133. 2005.

Apollo, B. 2014. The B2B buying decision process: challenging the 57% myth. Inflexion-point. 2014. Available: http://www.inflexion-point.com/blog/the-b2b-buying-decision-process-challenging-the-57-myth.

Auh S. & Bell S.J. & McLeod C.S. & Shih E.(2007. Co-Production and Customer Loyalty in Financial Services. Journal of Retailing, Vol. 83, Iss.3, pp. 359–370. 2007.

Beige, S.A.K. & Abdi, F. 2015. On the critical success factors for B2B e-marketplace. Decision Science Letters, Vol. 4, Iss.1, pp. 77-86. 2015.

Anderson, R. & Babin, J. & Hair, J. & Mehta, R. 2010. Sales Management: Building customer relationships and partnerships, USA, South-Western, 462 p. 2010.

Avlonitis, G. & Panagopoulos N. 2005. Antecedents and consequences of CRM technology acceptance in the sales force. Industrial Marketing Management, Iss. 34., pp.355-368. 2005.

Barnes-Vieyra, P. & Claycomb, C. 2001. Business-to-business e-commerce: Models and managerial decisions. Business Horizons, Vol. 44, Iss. 3, pp. 13-20. 2001.

Berman, B. 2002. Should your firm adopt a mass customization strategy? Business Horizons, Vol. 45, Iss. 4, pp. 51-60. 2002.

Berthon, P. & Lane, N & Pitt, L. & Watson, R.T. 1998. The World Wide Web as an Industrial Marketing Communication Tool: Models for the Identification and Assessment of Opportunities, Journal of Marketing Management, Vol. 14, pp. 691-704. 1998.

Bharati, P. & Chaudhury, A. 2004. Using Choice-Boards to Create Business Value. Management Science and Information Systems Faculty Publication Series, Paper 17. p. 16. 2004.

Bils, M. & Klenow, P.J. 2001. The acceleration in variety growth. The American Economic Review, Vol. 91, Iss. 2, pp. 274-280. 2001.

Blecker, T. & Friedrich, G. 2007. Mass Customization Information Systems in Business. Hersey, PA, p. 332. 2007.

Bourdieu, P. 1990. The Logic of Practice. Cambridge, Polity Press, p. 340. 1990.

Bryman, A. & Bell, E. 2011. Business research methods, 3rd edition, Oxford University Press, Oxford. p. 765. 2011.

Buehrer, R.E. & Senecal, S. & Bolman Pullins, E. 2005. Sales force technology usage – reasons, barriers and support: An exploratory investigation. Industrial Marketing Management, Iss. 34, pp. 389-398. 2005.

Carbonneau, R. & Vahidov, R. 2016. A Multi-attribute bidding strategy for a single-attribute auction marketplace. Expert Systems with Applications, Vol 43, pp. 42-50. 2016 (To be published).

Chakraborty, G. & Lala, V. & Warren, D. 2002. An empirical investigation of antecedents of B2B Websites' effectiveness. Journal of Interactive Marketing, Vol. 16, Iss. 4, pp. 51-72. 2002.

Chakraborty, G. & Srivastava, P. & Warren, D.L. 2005. Understanding corporate B2B web sites' effectiveness from North American and European perspective. Industrial Marketing Management, Vol. 34, Iss. 5, pp. 420-429. 2005.

Chang, H.H. & Wong, K.H. 2010. Adoption of e-procurement and participation of e-marketplace on firm performance: Trust as a moderator. Information & Management, Vol. 47, Iss.5-6, pp. 262-270. 2010.

Chen, J.V. & Rungruengsamrit, D. & Rajkumar, T.M. & Yen, D.C. 2013. Success of electronic commerce Web sites: A comparative study in two countries. Information & Management, Vol. 50, Iss. 6, pp. 344-355. 2013.

Cho, Y. & Kim, J. & Kim, S. 2002. A personalized recommender system based on web usage mining and decision tree induction. Expert Systems with Applications, Vol. 23, Iss. 3, pp. 329-342. 2002.

Chong, W.K. & Shafaghi, M. & Woollaston, C. & Lui, V. 2010. B2B e-marketplace: an e-marketing framework for B2B commerce. Marketing Intelligence & Planning, Vol. 28, Iss.3, pp. 310-329. 2010.

Claycomb, C. & Iyer, K- & Germain, R. 2005. Predicting the level of B2B e-commerce in industrial organizations. Industrial Marketing Management, Vol. 34, Iss. 3, pp. 221-234. 2005.

Colvin, G. 2000. Value driven: Seller, beware! Fortune, Vol. 141, Iss. 9, pp. 74-74. 2000.

Cox, W.M. & Alm, R. 1998. The right stuff: America's move to mass customization. Annual Report – Federal Reserve Bank of Dallas, pp. 3-26. 1998.

Croom, S. & Brandon-Jones, A. 2007. Impact of e-procurement: Experiences from implementation in the UK public sector. Journal of Purchasing & Supply Management, Iss. 13, pp. 294-303. 2007.

Dannenberg, H. & Zupancic, D. 2009. Excellence in Sales: Optimising Customer and Sales Management. Springer, Wiesbaden, p. 232. 2009.

DeLone, W.H. & McLean, E.R. 2003. The DeLone and McLean model of information systems success: A ten year update. Journal of Management Information Systems, Vol. 19, Iss. 4, pp. 9-30. 2003.

Dlodle, N. & Dhurup, M. 2010. Barriers to e-marketing adoption among small and medium enterprises (SMEs) in the Vaal Triangle. Acta Commercii, Vol. 10, Iss. 1, pp. 164-180. 2010.

Duffy, G. & Dale, B.G. 2002. E-commerce processes: a study of criticality. Industrial Management & Data Systems, Vol. 102, Iss. 8, pp. 432-441. 2002.

Ershov, M. & Avramenko, Y. & Häkkinen, J. & Kraslawski, A. & Beloglazov, I. 2012. Quotation Tool for Process Equipment, Computer Aided Chemical Engineering, Vol. 30, pp. 442-446. 2012.

Ferrell, L. & Ferrell, O.C. 2012. Redirecting direct selling: High-touch embraces high-tech. Business Horizons, Vol. 55, Iss. 3, pp. 273-281. 2012.

Forrester, written by Andy Hoar. 2013. US B2B e-Commerce Sales to Reach $559 Billion By The End Of 2013. Available at: http://blogs.forrester.com/andy_hoar/12-10-18-us_b2b_ecommerce_sales_to_reach_559_billion_by_the_end_of_2013. 2013.

Forza, C. & Salvador, F. 2002. Product configuration and inter-firm co-ordination: An innovative solution from a small manufacturing enterprise. Computers in Industry, Vol. 49, Iss. 1, pp. 37-46. 2002.

Garrido-Samaniego, M.J. & Gutierrez-Arranz, A.M. & San José-Cabezudo. 2010. Assessing the impact of e-procurement on the structure of the buying centre. International Journal of Information Management, Iss. 30, pp. 135-143. 2010.

Giddens, A. 1984. The constitution of society. Cambridge, Polity Press. 1984.

Gilmore, A. & Gallagher, D. & Henry, S. 2007. E.marketing and SMEs: operational lessons for the future. European Business Review, Vol. 19, Iss. 3, pp. 234-347. 2007.

Gohmann, S.F. & Guan, J. & Barker, R.M. & Faulds, D.J. 2005. Perceptions of sales force automation: Differences between sales force and management. Industrial Marketing Management, Iss. 34, pp. 337-343. 2005.

Gong, S. 2012. A Flexible Electronic Commerce Recommendation. Physics Procedia, Vol. 24, Part B, pp. 806-811. 2012.

Gourville, J.T. & Soman, D. 2005. Overchoice and assortment type: when and why variety backfires. Marketing Science, Vol. 24, Iss. 3, pp. 382-395. 2005.

Grönroos, C. 2008. Service logic revisited: Who creates value? And who co-creates? European Business Review, Vol. 20, Iss. 4, pp. 298-314. 2008.

Gulledge, T. 2002. B2B eMarketplaces and small- and medium-sized enterprises. Computers in Industry, Vol. 49, Iss. 1, pp. 47-58. 2002.

Haag. A. 1998. Sales Configuration in Business Processes. IEEE Intelligent Systems. Iss. 4, pp. 78-85. 1998.

Haig, M. 2001. B2B E-Commerce Handbook: How to Transform Your Business-to-Business Global Marketing Strategy. Kogan Page, p. 320. 2001.

Holloway, B. & Deitz, G. & Hansen, J. 2013. The Benefits of Sales Force Automation SFA): An Empirical Examination of SFA Usage on Relationship Quality and Performance. Journal of Relationship Marketing, Iss. 12. pp. 223-242. 2013.

Hsu, L. & Wang, K. & Chih, W. 2013. Effects of web site characteristics on customer loyalty in B2B e-commerce: evidence from Taiwan. The Service Industries Journal, Vol. 33, Iss. 11, pp. 1026-1050. 2013.

Huffman, C. & Kahn, B.E. 1998. Variety for sale: Mass customization or mass confusion? Journal of Retailing, Vol. 74, Iss. 4., pp. 491-513. 1998.

Hunter, L.M. & Kasouf, C.J. & Celuch, K.G. & Curry, K.A. 2004. A classification of business-to-business buying decisions: Risk importance and probability as a framework for e-business benefits. Industrial Marketing Management, Iss. 33, pp. 145-154. 2004.

Hunter, G. K., & Perreault, W. D. (2007). Making sales technology effective. Journal of Marketing, Vol. 71, Iss. 1, pp. 16–34. 2007.

Hvam, L. & Pape, S. & Nielsen, M.K. 2006. Improving the quotation process with product configuration. Computers in Industry, Vol. 57, Iss. 7, pp. 607-621. 2006.

Iloranta, K. & Pajunen-Muhonen, H. 2012. Hankintojen johtaminen : ostamisesta toimittajamarkkinoiden hallintaan. Tietosanoma, Helsinki. 2012.

Iriana, R. & Buttle, F. & Ang, L. 2013. Does organizational culture influence CRM's financial outcomes?. Journal of Marketing Management, Vol. 29, Iss. 3-4, pp. 467-493. 2013.

Iyer, G.R. & Sharma, A. & Evanschitzky, H. 2006. Global marketing of industrial products: Are interpersonal relationships always critical? Industrial Marketing Management, Vol. 35, Iss. 5, pp. 611-620. 2006.

Janita, M.S. & Miranda, F.J. 2013. The antecedents of client loyalty in business-to-business (B2B) electronic marketplaces. Industrial Marketing Management, Vol. 42, Iss. 5, pp. 814-823. 2013.

Jianyuan, Y. & Chunjuan, Z. 2009. An Empirical Study on influence factors for organizations to adopt B2B E-marketplace in China. Management and Service Science, MASS'09, Conference Paper, pp. 1-6. 2009.

Jobber, D. & Lancaster, G. 2009. Selling and Sales Management. Pearson Education, Harlow, 8th Edition. p. 546. 2009.

Johnston, W.J. & Bonama, T.V. 1981. Purchase process for capital equipment and services. Industrial Marketing Management, Vol. 10, Iss. 4, pp. 253-264. 1981.

Johnston, W.J. & Lewin, J.E. 1996. Organizational buying behavior: Toward and integrative framework. Journal of Business research, Vol. 35, pp. 1-15. 1996.

Karr, D. 2014. Most of the purchase decision in B2B happens before contact with your company. Marketing TechBlog. 2014. Available: https://www.marketingtechblog.com/research-purchase-b2b-online/

Kennedy, K.N. & Deeter-Schmelz, D.R. 2001. Descriptive and predictive analyses of industrial buyers' use of online information for purchasing. Journal of Personal Selling and Sales Management, Vol. 2, Iss. 4, pp. 279-290. 2001.

Kivistö, T. & Puumalainen, K. & Tervonen, A. & Virolainen, V. 2005. The scope of purchasing – a framework for monetary analysis. Conference Paper, 14th Annual IPSERA conference, France. 2005.

Knijnenburg, B.P. & Willemsen, M.C. & Kobsa, A. 2011. A pragmatic procedure to support the user-centric evaluation of recommender systems. Proceedings of the Fifth ACM Conference on Recommender Systems (RecSys '11), 321–324. New York, NY, USA. 2011.

Kodama, M. 2007. Project-based organization in the knowledge-based society, Imperial College Press, London, p. 269. 2007.

Kopra, T. 2003. Specification and evaluation of a sales configurator in a global metal industry company. Master's Thesis, Tampere University of Technology, Tampere. 2003.

Kotler, O. & Keller, P. 2011. Marketing Management, 14th Edition. Prentice Hall, p. 816. 2011.

Kraljic, P. 1983. Purchasing must become supply management. Harvard Business Review, Vol. 61, Iss. 5, pp. 109-117. 1983.

Kuruzovich, J. 2013. Sales technologies, sales force management, and online infomediaries. Journal of Personal Selling & Sales Management. Vol. 33, Iss. 2, pp. 211-224. 2013.

Li, M-J. & Juan, J.S-T. & Tsai, J.H-C. 2011. Practical electronic auction scheme with strong anonymity and bidding privacy. Information Sciences, Vol. 181, Iss. 12, pp. 2576-2586. 2011.

Li, Y. & Xu, L. & Li, D. 2013. Examining relationships between the return policy, product quality, and pricing strategy in online direct selling. International Journal of Production Economics, Vol. 144, Iss. 2, pp. 451-460. 2013.

Liao, S. & Chen, Y. & Hsieh, H. 2011. Mining customer knowledge for direct selling and marketing. Expert Systems with Applications, Vol. 38, Iss. 5, pp. 6059-6069. 2011.

Lichtenthal, J.D. 2003. Business buyer relationship management through seamless Internet integration. Journal of Relationship Marketing, Vol. 2, Iss. 3-4, pp. 67-83. 2003.

Lientz, B.P. & Rea, K.P. 2001. Dynamic E-Business Implementation Management: How to Effectively Manage E-Business Implementation, 1st edition, Academic Press, Inc., Orlando. p. 340. 2001.

Lindblom, C.E. 1959. The Science of "Muddling Through". Administration Review, Vol. 19, Iss. 2, pp. 79-88. 1959.

Liu, Z. & Li, M. & Kou, J. 2015. Selling information products: Sale channel selection and versioning strategy with network externality. International Journal of Production Economics, Vol. 166, pp. 1-10. 2015.

Long, M. & Tellefsen, T. & Lichtenthal, J. 2007. Internet integration into the industrial selling process: A step-by-step approach. Industrial Marketing Management, Vol. 36, Iss. 5, pp. 676-689. 2007.

Lopes, P. & Roy, B. 2015. Dynamic Recommendation System Using Web Usage Mining for E-commerce Users. Procedia Computer Science, Vol. 45, pp. 60-69. 2015.

MacManus, S.A. 2002. Understanding the incremental nature of e-procurement implementation at the state and local levels. Journal of Public Procurement, Vol. 2, Iss. 1, pp. 5-28. 2002.

Makkonen, H. & Olkkonen, R. & Halinen, A. 2012. Organizational buying as muddling through: A practice-theory approach. Journal of Business Research, Iss. 65, pp. 773-780. 2012.

Mattsson, J. & Parvinen, P. 2011. Best Cases in B2B Sales Management. The Federation of Finnish Technology Industries, Tampere. p. 347. 2011.

Miocevic, D. 2011. Organizational buying effectiveness in supply chain context: Conceptualization and empirical assessment. Journal of Purchasing & Supply Management, Iss. 17., pp. 246-255. 2011.

Mittal, S. & Frayman, F. 1989. Towards a generic model of configuration tasks. 11th International Joint Conferences on Artificial Intelligence, pp. 1395-1401. California. 1989.

Moncrief, W.C. & Marshall, G.W. 2005. The evolution of seven steps of selling. Industrial Marketing Management, Iss. 34, pp. 13-22. 2005.

Moon, J. & Tikoo, S. 2002. Buying decision approaches of organizational buyers and users. Journal of Business Research, Vol. 55, Iss. 4, pp. 293-299. 2002.

Moriarty Jr, R.T. & Spekman, R.E. 1984. An Empirical Investigation of the Information Sources Used During the Industrial Buying Process, Journal of Marketing Research, Vol. 21, pp 137-147. 1984.

Ngo, L.V. & O'Cass, A. 2013. Innovation and business success: the mediating role of customer participation. Journal of Business Research, Vol. 66, Iss. 8, pp. 1134-1142. 2013.

Nicholson, W. & Snyder, C. 2008. Microeconomic Theory: Basic Principles and Extensions, 10th Edition, South-Western part of Cengage Learning, Mason, Ohio, p. 725. 2008.

Palonen, V-M. 2003. Web based product configurator. Master's Thesis, Tampere University of Technology, Tampere. 2003.

Park, D.H. & Kim, H.K. & Choi, I.Y. & Kim, J.K. 2012. A literature review and classification of recommender systems research. Expert Systems with Applications, Vol. 39 Iss. 11, pp. 10059–10072. 2012.

Parvinen, P. & Oinas-Kukkonen, H. & Kaptein, M. 2014. E-selling: A new avenue of research for service design and online engagement. Electronic Commerce Research and Applications, Available online: http://www.sciencedirect.com/science/article/pii/S1567422314000775. 2014.

Patti, C. 1977. Buyer information sources in the capital equipment industry. Industrial Marketing Management, Vol. 6, Iss. 4, pp. 259-264. 1977.

Payne, A.F. & Storbacka, K. & Frow, P. 2008. Managing the co-creation of value. Journal of the Academy of Marketing Science, Vol. 36, Iss. 1, pp. 83-96. 2008.

Pu, P. & Chen, L. & Hu, R. 2011. A user-centric evaluation framework for recommender systems. Proceedings of the fifth ACM Conference on Recommender Systems, RecSys '11, pp. 157–164. New York, NY, USA. 2011.

Pimiä, H. 2002. Internet based offering concept for configurable multi-brand products. Master's Thesis, Tampere University of Technology, Tampere. 2002.

Pine, B.J.I. 1993. Mass Customization: The New Frontier in Business Competition, Harvard Business School Press, Boston, MA, 1993.

Piris, L. & Fitzgerald, G. & Serrano, A. 2004. Strategic motivators and expected benefits from e-commerce in traditional organisations. International Journal of Information Management, Vol. 24, Iss. 6, pp. 489-506. 2004.

Porter, M.E. 2001. Strategy and the Internet. Harvard Business Review 79, No. 3, pp. 62-78. 2001.

Pu, P. & Chen, L. & Hu, R. 2011. A user-centric evaluation framework for recommender systems. Proceedings of the fifth ACM Conference on Recommender Systems, RecSys '11, pp. 157–164. New York, NY, USA. 2011.

Purohit, M.C. & Purohit, V.K. 2005. E-commerce and Economic Development. Foundation for Public Economics and Policy Research, New Delhi, India. p. 122. 2005.

Rosen, A. 2002. The E-commerce Question and Answer Book: A Survival Guide for Business Managers. American Management Association, New York, USA, p. 226. 20

Saunders, M. & Lewis, P. & Thornhill, A. 2009. Research Methods for Business Students. Fifth edition, Harlow, Pearson Education Limited. 614 p. 2009.

Savrul, M. & Incekara, A. & Sener, S. 2014. The Potential of E-commerce for SMEs in a Globalizing Business Environment. Procedia – Social and Behavioral Sciences, Vol. 150, Iss. 15, pp. 35-45. 2014.

Scanclimber, 2015. The official webpage of the company. Available at: http://scanclimber.com/.

Scavarda, L.F. & Reichhart, A. & Hamacher, S. & Holweg, M. 2010. Managing product variety in emerging markets. International Journal of Operation & Production Management, Vol. 30, Iss. 2., pp. 205-224. 2010.

Schafer, J.B. & Konstan, J.A. & Riedl, J. 2001. E-Commerce recommendation applications. Data Mining and Knowledge Discovery, Vol. 5, Iss. 1–2, pp. 115–153. 2001.

Schultz, D.E. & Patti, C.H. 2009. The evolution of IMC: IMC in a customer-driven marketplace. Journal of Marketing Communications, Vol. 15, Iss. 2-3, pp. 75-84. 2009.

Sashi, C.M. & O'Leary, B. 2002. The role of Internet auctions in the expansion of B2B markets. Industrial Marketing Management, Vol. 31, Iss. 2, pp. 103-110. 2002.

Sheth, J.N. & Sharma, A. 2005. International e-marketing: opportunities and issues. International Marketing Review, Vol. 22, Iss. 6, pp. 611-622. 2005.

Sievänen, M. 2004. The Effect of Customization on Capital Goods Manufacturing Business. Doctoral Thesis, Publication 485, Tampere University of Technology, Tampere. 2004.

Song, Q. & Shepperd, M. 2006. Mining web browsing patterns for E-commerce. Computers in Industry, Vol. 57, Iss. 7, pp. 622-630. 2006.

Spekman, R.E. & Thomas, R.J. 2012. Organizational Buying Behavior: Where We Have Been and Where We Need to Go. Darden Business School Working Paper No. 1993207; Georgetown McDonough School of Business Research Paper No. 2012-05. 2012.

Standaert, W. & Muylle, S. & Amelincky, I. 2015. An empirical study of electronic reverse auction project outcomes. Electronic Commerce Research and Applications, Vol. 14, Iss. 2, pp. 81-94. 2015.

Stocback, K. & Ryals, L. & Davies, I.A. & Nenonen, S. 2009. The changing role of sales: viewing sales as a strategic, cross-functional process. European Journal of Marketing, Vol. 43, Iss. 7/8, pp. 890-906. 2009.

Suomala, P. & Sievänen, M. & Paranko, J. 2004. Customization from the after sales point of view—implications of product and item customization for spare-part business. Technovation, Vol. 24, Iss. 10, pp. 831-840. 2004.

Tacton. 2014. Guided Selling – make it easy for your customers to buy from you. Available at: http://www.tacton.com/solutions/guided-selling/.

Talonen, P. 2013. Integrated Marketing Communication in Connecting Buyer and Seller Prior to Selecting the Supplier of Industrial Capital Goods. Doctoral Thesis, Publication 1141, Tampere University of Technology, Tampere. 2013.

Tanner Jr, J.F. & Shipp, S. 2005. Sales technology within the salesperson's relationships: A research agenda. Industrial Marketing Management, Iss. 34, pp. 305-312. 2005.

Tarazona-Bermudez, G.M. & G-Bustelo, B.C.P. & Martinez, O.S. & Alvarez, B.T. & Rojas, L.A.R. 2014. Reverse electronic auction web tool for B2B. Computers in Industry, Vol. 65, Iss. 5, pp. 841-849. 2014.

Thongpapani, N. & Ashraf, A.R. 2011. Enhancing online performance through website content and personalization. The Journal of Computer Information Systems. Vol. 52, Iss. 1, pp. 3-13. 2011.

Toktas-Palut, P. & Baylav, E. & Teoman, S. & Altunbey, M. 2014. The impact of barriers and benefits of e-procurement on its adoption decision: An empirical analysis. International Journal of Production Economics, Vol. 158, pp. 77-90. 2014.

Tremblay, C.H. & Tremblay, V.J. 2011. The Cournot–Bertrand model and the degree of product differentiation. Economics Letter, Vol. 111, Iss. 3. pp. 233-235. 2011.

Trentin, A. & Perin, E. & Forza, C. 2013. Sales configurator capabilities to avoid the product variety paradox: Construct development and validation. Computers in Industry, Vol. 64, Iss. 4, pp. 436-447. 2013.

Trentin, A. & Perin, E. & Forza, C. 2014. Increasing the consumer-perceived benefits of a mass-customization experience through sales-configurator capabilities. Computers in Industry, Vol. 65, Iss. 4, pp 693-705. 2014.

Töllner, A & Blut, M. & Holzmüller, H.H. 2011. Customer solutions in the capital goods industry: Examining the impact of the buying center. Industrial Marketing Management, Vol. 40, Iss. 5, pp. 712-722. 2011.

Valmohammadi, C. & Dashti, S. 2015. Using interpretive structural modeling and fuzzy analytical process to identify and prioritize the interactive barriers of e-commerce implementation. Information & Management, Available: http://www.sciencedirect.com/science/article/pii/S0378720615001044

Van Weele, A. 2010. Purchasing and Supply Chain Management: Analysis, Strategy, Planning and Practice. Cengage Learning EMEA, 5th Edition. p. 418. 2009.

Vos, M. & Schomaker, H. 2008. Integrated communication; concern, internal and marketing communication. Eleven Publishing, 4th Edition, Amsterdam. 2008.

Watson, R.P. & Leyland, F.P. & Berthon, P. & Zinkham, G. 2002. U-commerce: expanding the universe of marketing. Journal of the Academy of Marketing Science. Vol. 30, Iss. 4, pp. 333-347. 2002.

Yang, S. & Shi, V. & Jackson, J.E. 2015. Manufacturers' channel structures when selling asymmetric competing products. International Journal of Production Economics, Available: http://www.sciencedirect.com/science/article/pii/S0925527315001188. pp. 1-11. 2015.

Yin, R. K. 2009. Case Study Research Design and Methods. Fourth edition, California, Sage Publications Inc. 219 p. 2009.

Zanker, M. & Tiihonen, J. 2008. Configuration and Recommender Systems: Two Converging Reseach Fields. IEEE Intelligent Informatics Bulletin, Vol. 9, No. 1. 2008.