TAMPERE UNIVERSITY OF TECHNOLOGY

UMAIR EJAZ

INFORMATION SOURCES IN MAKING BUSINESS-TO-BUSINESS PURCHASE DECISIONS FOR INTEGRATED SOLUTIONS

Master of Science Thesis

Prof. Miia Martinsuo has been appointed as the examiner at the Council Meeting of the Faculty of Business and Built Environment on 5th October, 2016.

ABSTRACT

TAMPERE UNIVERSITY OF TECHNOLOGY
Master's Degree Programme in Industrial Engineering and Management

UMAIR, EJAZ: Information sources in making business to business purchase decisions for integrated solutions.
Master of Science Thesis, 87 pages, 2 appendices (8 pages)
October 2016
Major: International Sales and Sourcing
Examiner(s): Professor Miia Martinsuo
Keywords: Purchase process, investment goods, configuration, pricing and quotation system, business-to-business markets, integrated solutions, information sourcing

The study is need based analysis of customer purchase behavior focusing on information sourcing for purchase, reaction to guided selling and how they will perceive online configuration, pricing and quotation (CPQ) system for investment good (investment good i.e. construction machinery). The case study is Finnish Construction Company providing construction machinery in Business to business markets. It is certain that every company has different structure and roles defined for the teams with respect to investment decisions, yet understanding the general system or approach was the main purpose of the tasks in pre-study of Scan-CPQ. In addition, another target was to recognize the information sources that had significant impact towards investment decisions in construction industry.

The data was collected in a systematic manner, questionnaires and structured interviews were used for data collection allowing the researcher to gather utmost possible information from the respondent. The literature review aimed to understand the penetration of digitalization in business processes and shift in business to business dealing using e-commerce.

The study shows that digitalization has played its part in the overall business process, but in focus to the construction industry there is still room for more integration of communication channels and involvement of social media. The results show that while making investment decisions the companies stick to the traditional approaches of making purchase decisions. Due to the involvement of high capital in such items the use of technology may be limited to sourcing of information, as the literature points towards the lack of trust on information provided on online sources, to be the reason. CPQ is a new dimension and according to the limited knowledge gained from the study, it may be said that companies see it as a viable option but making decisions based on the system will still take some time.

PREFACE

This thesis has given me an excellent opportunity to get insight into the industrial approach towards investment decisions. Being a part of the industry myself, I realized the complex nature of B2B decision making in relation with procurement processes. In addition, it became more clear after conducting research that in B2B business especially construction industry, there is a considerable vacuum with reference to adaptation of advanced purchasing methods.

I would like to thank my thesis supervisor Prof. Miia Martinsuo for her support in converting the raw research data into a Master's thesis. Special thanks to Jarkko Ovaska from Scanclimber Oy for guidance and providing direction at every stage of research related to this thesis. The obtained results would not have been possible without his continuous support. I would also like to thank all my colleagues at Scanclimber who were supportive during the research process.

Last but never the least, I would thank my parents and my wife, Sehar for continuously motivating me to graduate and start with new chapter of my life.

Umair Ejaz
Tampere, 08.09.2016

TABLE OF CONTENTS

ABBREVIATIONS AND NOTATION

B2B	Business-to-business
CPQ	Configuration, Pricing, and Quotation
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
SFA	Sales force automation

1. INTRODUCTION

1.1. Background of the study

Purchasing process theoretically is rather a simple process where one needs to identify their needs and strive to fulfill that need from the most cost efficient source (O'Cass, 2000). But when it comes to business to business world, this process includes many parameters for example, quality, quantity, delivery, cost, etc. where many other factors are an important part of the process as well like product type, deciding on potential supplier, their evaluation, payment methods, price negotiations, minimum order quantity, etc. (O'Cass, 2000). Thus, the B2B purchase decision making is complicated practice especially in case of making first B2B purchase from certain source.

When making first business to business (B2B) purchase decision from a new supplier, it is interesting to identify the importance as well as the role of information sources being used in making any decision. Information sources include all kind of sources which could play their part in any possible way towards the purchase decision (Laesser and Bieger, 2000). These information sources could include trade magazines, vendor's website, brochures, trade events, peer reviews, colleague suggestions, social media, newsletters and many others. The basic purpose is to create awareness for the buyer to consider certain source to procure from.

Integrated solutions are getting more significance these days and companies are starting to emphasize on introducing such solutions in their systems to reduce the time and effort on certain processes (Häubl and Trifts, 2000). Integrated solutions are referred as different components being combined together as a whole to get certain desired results. Companies these days are focusing on developing new strategies to understand customer needs and improving the overall traditional processes in newer ways. One of such ways is combinations of products and services in the form of integrated solutions. (Davies, 2003) One of the measures under which these integrated solutions could be analyzed is the value that they bring to the customers ultimately providing competitive advantage for the organization. If one of such solutions i.e. CPQ is considered, this tool configures the end product, price the product according to the defined specifications and helps to quote the calculated price to concerned people. This is the basic function of this integrated solution (Borkar, Cohn, Cox, Gleason and Gross, 1988). There are many other additions and functions that could be added to this solution depending on the requirements of the whole process but the main point here is the value that integrated solutions add for the organization and hence overall business.

The B2B purchase decision making model explains the systematic procedure to conclude that a certain purchase needs to be done (Hoyer, 1984). Decision making process regarding purchases consists of different stages from identification of need to the post purchase

evaluation. It is interesting that purchase decision making is integral part of several companies so many times a day yet many of the decision makers are not aware of such the model itself.

According to Hoyer (1984), the purchase decision making model begins with the identification of a need or problem. Once it is recognized, extensive information search is required in order to have certain alternatives to solve this problem. Once, some alternatives are available and listed, there is a need for intensive evaluation of every option. The most feasible which in purchasing context could be, required quality with best available price is selected and procurement process is initiated with the supplier. The purchasing process is a separate approach which depends on the business model i.e. B2B or B2C. The last part of decision making model is post purchase behavior which includes the evaluation of the decision being made to solve the problem. The loop goes on as new problems or areas are focused to solve certain complexities (Hoyer, 1984). Purchase decision making is highly critical for companies to determine their success in this era where every penny matters.

1.2. Research setting

This study is based on the project of a Finnish construction company i.e. Scanclimber. The company deals in construction machinery (investment/ capital good) and wanted to launch an integrated online system (CPQ) through which their customers can configure the desired machine online and get a tentative quotation from the company website. The concept was to reduce the time in decision making process and make the supply chain more efficient. This would reduce the hours spent on the initial information gathering and will also enable the customer worldwide to look at all the options before actually making the purchase decision.

The project is called as the Devenio project and is based on guided selling through integrated solutions and e-procurement. A survey was created to understand the information sources and their influence on buying behavior of customers in B2B rental construction industry. This was important pre-study in order to understand the practical feasibility of web based configurator services for guided selling, also known as CPQ (Configure Price Quotation). The research was done under the supervision of Production Manager and the same research was further used for the decision making of Devenio project.

1.3. Objective of the study and research questions

Companies these days are focusing more on improving their ways of working and are trying to adapt to technological developments occurring in the world (Phan, 2003). According to Phan (2003) traditional methods are more and more being outdated with the passage of time and top management of organizations even though used to traditional methods are not as resistant towards changes as they were a decade ago. B2B purchasing is no exception as well since previously mostly the information sources were to call colleagues and get opinions in case the company is looking for new vendors. Nowadays the trend has change even in B2B business, the use of web based content has been observed important in decision making

process for many industries (Kaplan and Sawhney, 2000). Based on the background and the objective of the research is…

"…to understand the purchase behavior of customers towards investment goods specific to construction industry. Furthermore, to gain a better knowledge of how the customer sources information for such decisions and to what extent electronic information sourcing and integrated solutions are being used for making B2B purchase decisions".

The study is based on a project on pre-development phase of CPQ design for a Finnish construction equipment manufacturing industry. CPQ stands for Configuration, Pricing, and Quotation and as the name states; it is an integrated tool which helps to design a product by selecting different specifications according to the requirements. This tool prices the product according to the customized criteria and provides the quotation of the product design at one click. This makes the pricing and quotation process faster, efficient and transparent for both company as well as customers.

Based on the research objective the study will address following questions:

- *What is purchase process of companies while purchasing investment goods?*
- *How the buyer companies source supplier information to make purchase decisions?*
- *How CPQ system is perceived and what is the value that this CPQ tool brings in a b2b purchase process?*

1.4. Structure of thesis

The structure of the thesis is as follows; 1st chapter is introduction explaining background of the research study, need identification of the study and major research points the study has touched. 2nd chapter provides detailed literature review on the researched variables i.e. purchase behaviour in investment good, information sourcing by the customer and lastly how digitalization and e-commerce has changed the structure of business and in this setting how online integrated solutions can provide a competitive edge to the buyer and supplier. 3rd chapter provides the methodology of the research, giving the details of how the research was conducted and tools that were used to extract the information. Chapter 4 gives the details analysis of the results from the questionnaire and interviews conducted for the research with numerical and graphical presentation. Chapter 5 comprises of the discussion on the results providing linkages between the literature and actual responses from the respondents from business setting. Chapter 6 concludes the study giving the answers of the research questions, also provides limitations of the study.

2. THEORETICAL BACKGROUND

2.1. Business to business purchasing

Purchasing management is one of the most important functions of any business activity best described by one of the pioneers of purchase management researcher Arjan J. van Weele (2010): "Purchase management is a phenomenon that defines all activities relating to manage supplier relationships with the business. It focuses on making the structure and bringing continuous improvement in purchasing process within the organization and its suppliers." (Weele, 2010)

Iloranta & Pajunen-Muhonen (2012) describes that being a part of the European Union has given Finnish economy a rise and the market size of Finnish companies has increased from 5 million to approximately 500 million persons. The world has become a global village and with the advancement of the communication means the world has actually become one huge market place. This has diversified the mechanism of business as well resulting in much complicated purchasing networks. This particular nature of business has increased the possibilities of higher efficiency and rapid development but at the same time has increased the amount of risk involved while making business decisions i−e purchase decisions. (Iloranta & Pajunen-Muhonen, 2012)

Kivistö et al. (2005) states purchasing is the most important function of Finnish businesses as according to the Finnish Monetary analysis of public companies, the purchasing cost function constitutes 80 percent of the total of company's cost structure. Purchase related activities have become more complex as a result of developments in technology and global markets. According to Iloranta & Pajunen-Muhonen (2012) purchase management has evolved from an integral function to one of the prime functions of any company, hence providing competitive advantage to the companies.

Miocevic (2011) supports another school of thought and insists that companies should not take purchasing function as a means of cost reduction but as a cost reducer which makes the decision keeping in view that customer value is compromised.

The purchasing management process is complex. It is important to understand that lowest possible price for the items might not be the desired objective of every purchase (Hunter et al., 2004; Miocevic, 2011). In some situations, it is wise to opt or aim for the lowest prices solution but in other higher value generation may be more important regardless of associated cost. Colvin (2000) further explains that for buyers it is critical to make situation based decisions as in certain situations price of the product matters but in others the value generated by the supplier of a rather expensive product matters more than just the price.

To understand these critical situations of the buyer while making a purchase decision Kraljic's (1983) gave his purchasing portfolio approach. The model explains different buying situations. The model was revisited by Dubois and Pedersen (2002) According to Karljic (1983) in the model (fig 2.1.1.), the firm's purchase strategy depends on two variables: Importance of purchasing (IP) and complexity of supply market (CSM). Based on these variables the matrix explains the complexity of buying decision, where IP is high and CSM the area is called as leverage items. Here the market has more suppliers and the decision making is important but not complex. In Non-critical items the IP is low and the CSM is also low these are the kind of decisions where the buyer can opt for the lowest priced item. Bottleneck items have high CSM and sourcing of such items is difficult thus it is important for the for the buyer to find the right supplier and look for the value of the item. The strategic items are highest priority here the IP is high and the CSM is also high thus the buyer need to make the decision based on the price as well as the value that the supplier is providing (Dubois and Pedersen, 2002).

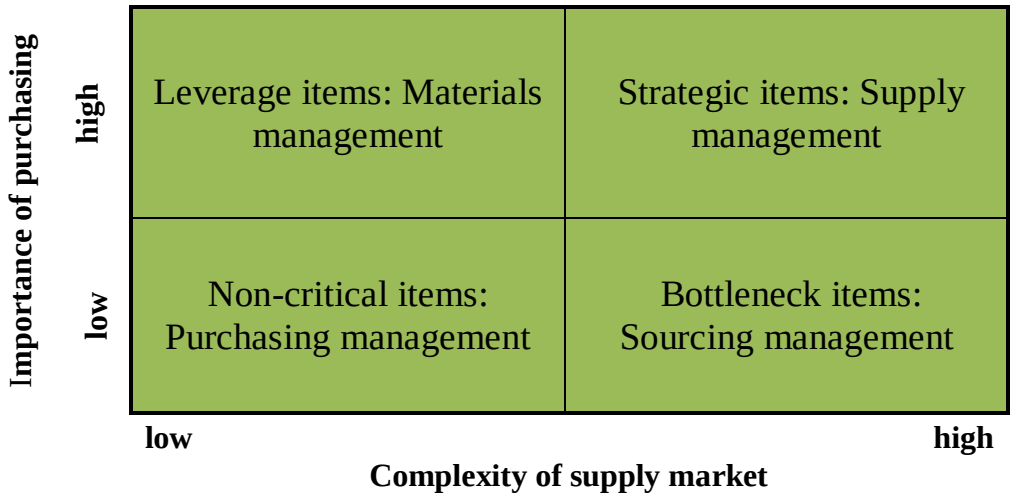

Figure 2.1.1. *The Kraljic purchasing portfolio model (modified from Kraljic, 1983, p. 111)*

Miocevic (2011) is supporter of differentiation i.e. approaching every purchase decision with different approach. According to Miocevic (2011) every purchase decision is different from other thus the buyer should approach his decisions in different situations from different angles. The main purpose of purchase management is to reduce the cost factor but the purchase manager should not only consider the cost factor although it does result is better financial performance. It should be taken into account that purchase management may lead to low value dimension in the whole supply chain. The purchase manager must make the decisions on the basis of efficiency and effectiveness and ensure long term customer value and company health (Miocevic, 2011).

After Kraljic the purchase portfolios were explained by many other researchers. These portfolios (fig: 2.1.2) were also based on the approach of two dimensional frameworks. Some of the major portfolios are (Bensaou, 1999) with Buyer specific investment and supplier

specific investment and discusses the power of supplier and buyer in the capital market. Similarly, Olsen and Ellram (1997) explain similar dimensions as of Karljic in his Portfolio Model, difficulty in managing the purchase situation and strategic importance of the purchase. This model also emphasizes the importance of the buyer's decision based on the value generation of the purchase. These purchase portfolio matrixes help the business to understand different kind of decisions involved while making purchase decisions and helps the business to sustain the competitive edge (Wagner and Johnson, 2004) and generate higher profitability with efficiency using different purchasing strategies (Gelderman and van Weele, 2005). As the businesses are getting more and more complex the purchasing portfolio models have received more attention from the academia as well as businesses. These models have practicality and can easily be understood to provide guidelines for the purchase process and how the buyers make their decisions in the b2b markets (Dubois and Pedersen, 2002). According to Gelderman (2003) a surveys results that in manufacturing and engineering sectors almost 74% of Dutch purchasers and 55% of French purchasers (Kibbeling, 2005) use these purchasing portfolio analysis as a strategic tool to make their purchase decisions.

Portfolio models[a]	Classification dimensions	Categories	Action plans	Phases in developing a supply strategy
Kraljic (1983)	Importance of purchasing[b] Complexity of supply market	*Materials/components* Non-critical items[c] Leverage items Bottleneck items Strategic items	Exploit Balance Diversify	1. Classification 2. Market analysis 3. Strategic positioning 4. Action plans
Van Stekelenborg and Kornelius (1994)	Control need of the internal market demand Control need of the external supply market	*Supply situations* Plain supply situation Internally problematic supply situation Externally problematic supply situation Complicated supply situation	Purchasing as effort manager Purchasing as demand manger Purchasing as supply manager Purchasing as integrative manager	1. Classify supply situation 2. Determine purchasing activities
Olsen and Ellram (1997)	Difficulty of managing the purchase situation Strategic importance of the purchase	*Purchases* Non-critical Bottleneck Leverage Strategic	Strengthen the relationship Improve the supplier attractiveness/the performance of the relationship Reduce the resources allocated to the relationship	1. Analysis of the company's purchases 2. Analyse the supplier relationships 3. Develop action plans
Bensaou (1999)	Buyer's specific investments Supplier's specific investments	*Relationships* Market exchange Captive buyer Captive supplier Strategic partnership		1. Classify relationships 2. Identify contextual profiles 3. Design management profiles
Gelderman and Van Weele (2000)	Supplier's dependence Buyer's dependence	*Supply strategies* Efficient processing Exploit power Volume insurance Balanced relationship		

Figure 2.1.2. *Comparison of Purchase Portfolio Models (Dubois, Anna, and Pedersen (2002)*

The Kraljic (1983) model is one of the most important approaches in the literature of business to business purchasing. This model emphasizes on the effectiveness of every purchase decision Miocevic (2011) instead of efficiency of that purchase. It is important for the business and the purchase managers to understand the difference and importance of effectiveness of a purchase and efficiency of the purchase. This decision directly impacts the whole supply chain process and value of the product provided to the end customer. It is easier to achieve efficiency by making the purchase decision quickly and is difficult to take control of the factors involved to get the desired effectiveness. Thus it is important that the strategic role of business managers is also taken into account with the purchase managers. Miocevic (2011) provides the argument that purchasing function actually strengthens the supply chain in any business, and the difference is made by differentiating between the organizations efficient and effective buying behavior (table 2.1.1.).

Table 2.1. *Efficiency and Effectiveness dimension distinction table in organizational buying (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 consumer
Lateral involvement level	Purchasing managers only	Managers from various business functions
Decision making	Centralized	Decentralized
Nature of exchange	Transactional	Transection

2.1.1. Management of purchasing process

The studies relating to organizational buying behavior started strong between 1970s and 1980s, but after that it has been in a decline (Spekman & Thomas, 2012). The Sheth (1973) model of buying behavior provided a strong base for research in this area, but no promising advancement are made in the later years. According to Spekman & Thomas (2012) due to lack of research and development of new theories we may not be able of understanding the dynamics of globalizations and technological advancements.

In a typical organization the buying decisions are made through proper processes observed by “buying centers”, these buying centers have member who are selected based on their functional relevancy (Sheth, 1973). According to Miocevic (2011), in many ways a buying

centers can be termed as an “subsystems that are informally organized in a firm”, which has similar properties as of the firm however firm’s authority supersedes that of a buying center in every way.

According to Alves (2002) there are seven step in the management purchase process of supplies or subcontracting services in construction industry (fig: 2.1.1). Each step has certain cost associated to which starts from the generation, follow through and management of that step. This cost varies significantly based on the quality and what is transected. The quality control methods are applied at each step whose cost is of probabilistic nature.

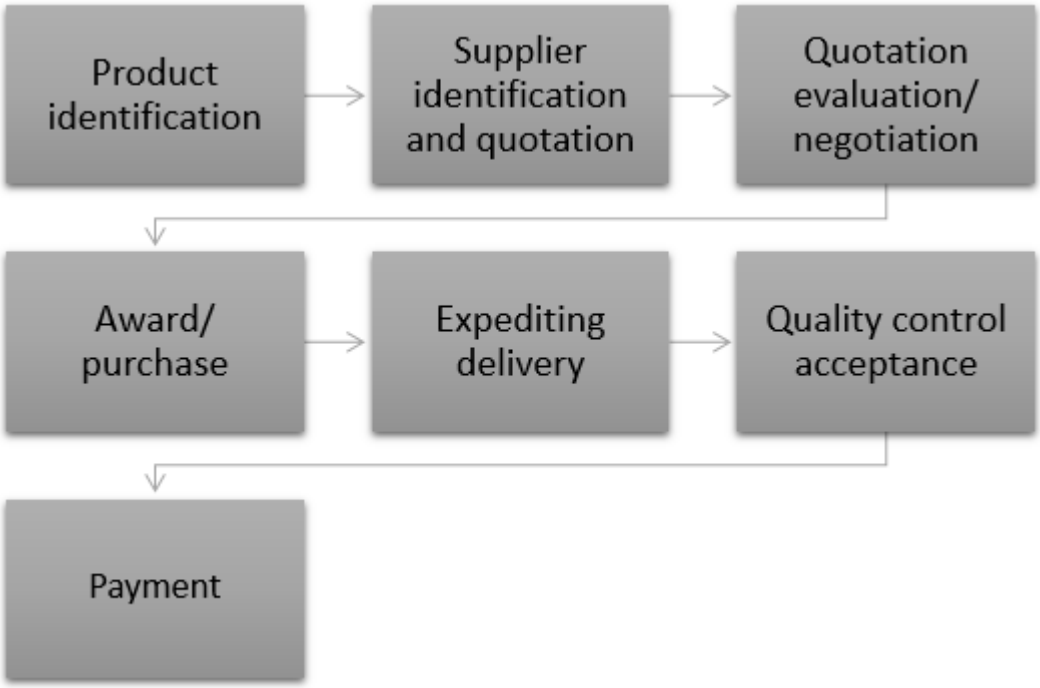

Figure 2.1.1.1. *The steps of the purchasing process (Alves, 2002)*

As discussed earlier the buying centres make the purchase decisions. Webster and Wind (1972) explains that traditionally the buying center comprises of five roles 1) User, 2) Influencer, 3) Decider, 4) Buyer and 5) Gatekeepers. Since it has already been told that the members of these buying centres are also members of the organizations. Thus the attitude and decision making of these members are influenced by others in the total organization which is reflected on the buying decision. It needs to be understood that only the provided information about a certain product does not determine the purchase decisions but the are other external factor which are also effecting the buying decision and making it more complex (Webster and Wind, 1972).

2.1.2. Purchase decision making process

Given in researches the process of purchasing in industrial goods is somewhat similar. The two famous process charts of Johnston and Lewin (1996) possesses seven steps in their

process chart, whereas Berthon et al. (1998) consist of 6 steps. There is not much difference in both the approaches however Berthon et al. (1998) put together two steps which in Johnston and Lewin (1996) are considered to be separate (figure 2.1.2.). According to Andersen (2001) the activities before supplier selection are termed as "pre-relationship phase" from a communication aspect this is for awareness building.

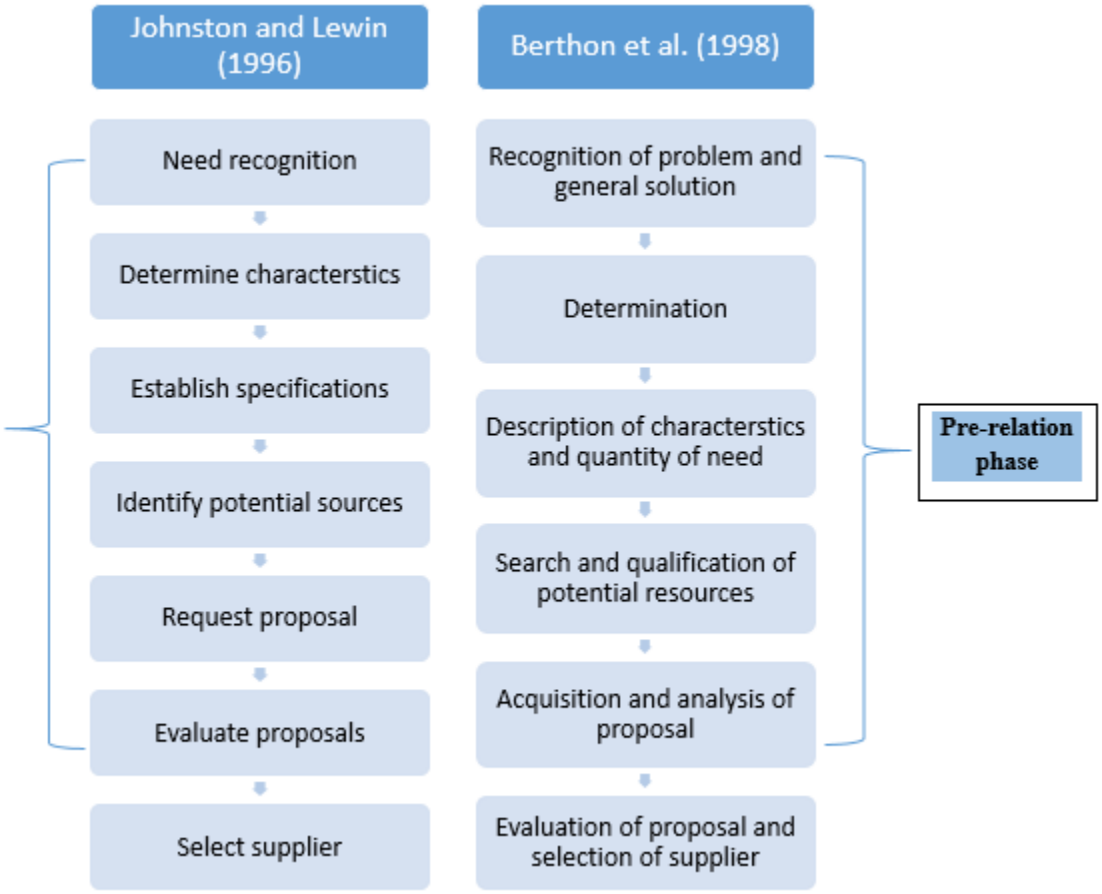

Figure 2.1.2.1. *Industrial buying process (Johnston & Lewin, 1996)*

Based on the first buying process chart, Johnston and Lewin (1996) also presented an integrated model for the behavior of industrial buyers. This model constitutes of nine parts. This model possesses similarities with the model that Sheth's (1973) put forward here the basis of both models is rationality of the buying decision. Sheth (1973) argues that in industrial good there is mostly objective buying and in such decisions the decision is made on the based on the prior knowledge of the buyer, his expectations, environment or the personal preferences (characteristics of buyer), all these factors are also a part of Johnston and Lewin's (1996) model.

Both the models under discussion have a rational approach, linear and are based on means-end logic. However according to Makkonen et al. (2012) is not true in nature. According to

Makkonen et al (2012) buying process is more complex than this and many times these steps have to be repeated especially in case of high commitment situations. When there is high degree of uncertainty the purchase process gets incremental and more exploratory. Rationalist approaches have found a good deal of following in management literature but it does not address the complex and uncertain situations businesses face in the real life (Makkonen et al., 2012). This is not a new dimension as already discussed Sheth (1973) already proposed, as the decisions in business are more complex and not all decisions are made through the same systematic process but there are other factors which influence the outcome of every situation.

2.1.3. "Muddling-through" model

The overall purchasing process comprises of similar steps as discussed in (fig: 2.1.3) yet there is a variation while advancing the process. To tackle the problem of systematic advancement of management decisions in real life business situations Lindblom (1959) gave the "muddling-through" model. Makkonen et al. (2012) supports the model and explains that "muddling-through" does not undermine or nullify the rational models or suggests that these models are in fact irrational, but it brings in higher degree of realism. The "muddling-through" model gives a higher probability of reaching a rational decision in complex decision making situations.

The focus of this particular study is on capital goods purchasing and renting which is rather complex in market. This kind of product purchase and renting decisions involve higher amount of investments and thus the degree of complexity and uncertainty is higher, thus this study adopts the "muddling-through" model which addresses such factors in a better way than the traditional rational models. "Muddling-Through" framework has two parts 1: structures that are relatively permanent (on top of the framework); and 2: the structural elements that are relatively situation based (at the bottom of the framework) (Giddens, 1984).

The structural elements of the model points to the norms and attitudes prevail in the organization while making the buying decisions. These norms generate from the external environment at macro level involving culture and government, business networks (strategies and rules) or the organization itself (company policies and procedures). The second component of the model is rather more situational and refers to more diverse factor (easily changeable) which affect the buying process directly. These factors also arise from the same sources: including the macro-environment i.e. (change in economic laws), industry situation (mergers, conflicts and changes in the logic of industry) and the organization itself (personnel or changes in the company strategy) (Makkonen et al., 2012).

As explained by Makkonen et al. (2012) the center of the "Muddling-through" model (figure 2.1.3.) is the "bounded rational habitus" of each component of the process which are filtering the effects of the two other constructs on the purchase process. The term Habitus points to the ability of each component to ascertain how two of the constructs can relate to one another which will determine how the particular construct is interpreted and worked upon in various steps of the buying process. (Makkonen et al., 2012)

There is no mechanical function of the habitus. It is a collection of guidelines which helps the components to improvise according to the situation based on their experience, i.e. habitus provides a strategy for the components to act in a particular situation (Bourdieu, 1990). In this way the habitus provides components a way to original problems, while conditioning components to resolve the already known problem with proven methods (Makkonen et al., 2012)

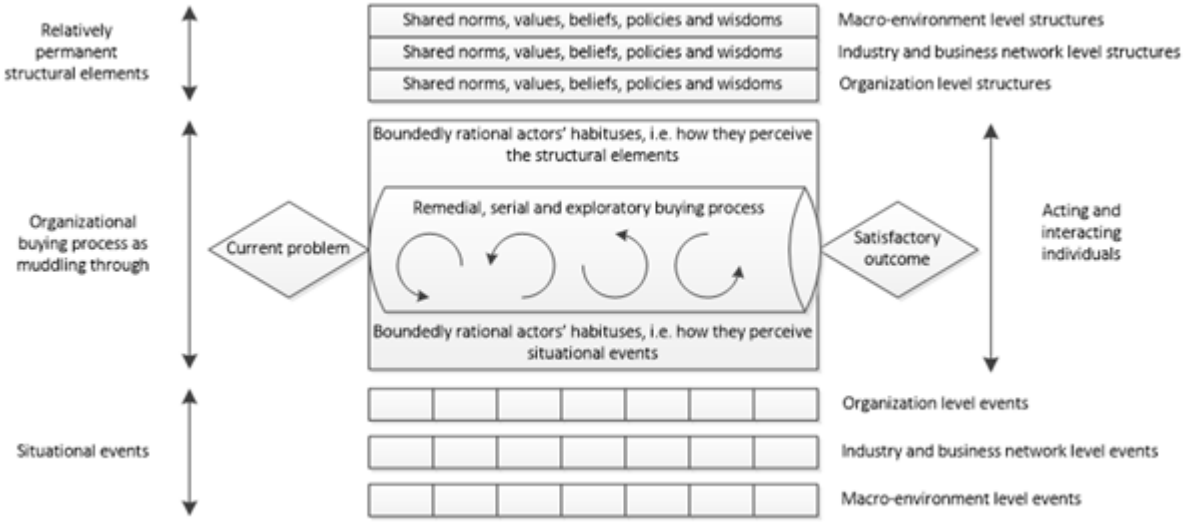

Figure 2.1.3. *A practice-theory approach for organizational buying (muddling through model) (Makkonen et al. 2012)*

According to Makkonen et al. (2012), this model point towards the rationality that is achieved while making organized buying decisions. As rationality is not limited to how the steps are organized during the purchase decision, but also how satisfactory the outcome of the process was. In real life decision makers use rationality while making decisions and the model provides a good reflection of such realistic situations faced by them at the company level. The previous rational models address the purchase process in detached manner where it exists alone in the organization but in real life it is linked to many other processes in the company. The proposed model provides a systematic analysis of organizational processes and "muddling-through" taking into account the external constructs. (Makkonen et al., 2012)

2.1.4. Purchase behavior of capital goods

There are quite similar views about the classification of capital/ industrial goods since 1970's. Patti (1977) put forward six categorizes of: 1) raw materials, 2) accessory materials, 3) capital goods, 4) fabricated materials, 5) components and 6) services and supplies. In this study the focus is on third category of capital good i.e. capital good are the ones which are used in the production of other products.

Storbacka et al. (2011) states that integrated solutions are the set of product and services which the suppliers deliver that helps the customer solve certain business problems in which he does not possess the desired expertise for example to deliver the whole production line which will include the operation and services relating to maintenance as well. Suomala et al. (2004) agrees with it and adds that after-sales services are essential component in business dealing in capital goods, since they provide an opportunity for income generation for a long period of time.

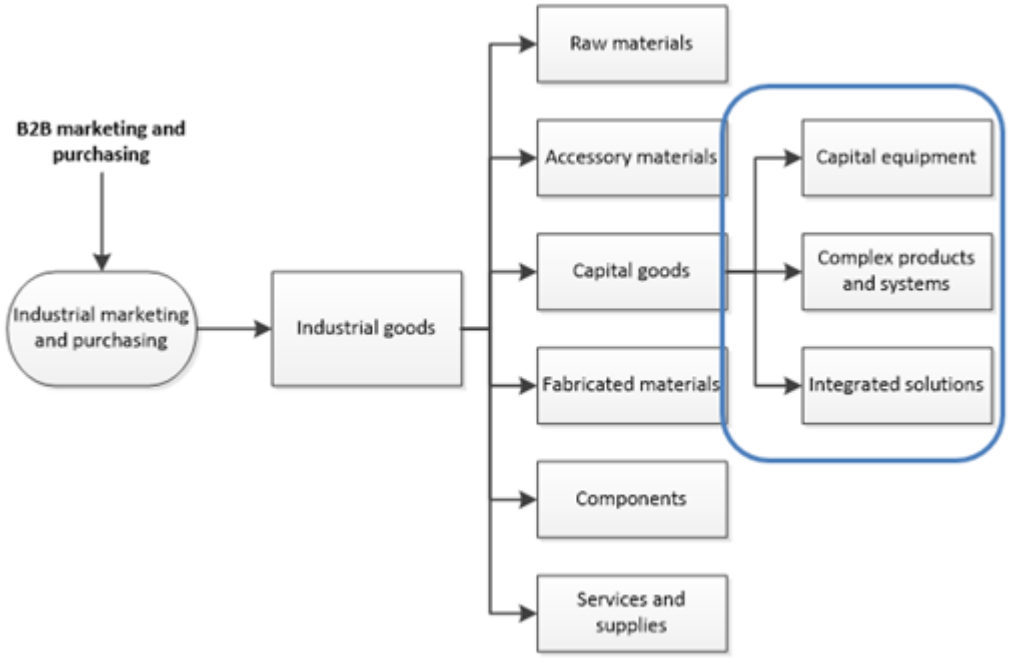

Figure 2.1.4. *Categories of industrial goods (Cova & Salle, 2007)*

According to Cova and Salle (2007) capital goods mainly include fixed assets, such as heavy machinery, plant or building etc., these have heavy costs involved with technical expertise and are generally directly purchased from the manufacturer. In this situation the purchaser is advised to involve more people from technical background and from the management while making the purchase decision since these kind of purchases involve high cost and have long term effect on the company involving higher risk. According to Sievänen (2004) investment good can also be termed as projects as many of them are one-of-a-kind production nature.

Although, investments good being categorized as a project due to the similar nature might be a dangerous decision. According to Iloranta & Pajunen-Muhonen (2012) generally the investments are a subcategory of sourcing and it is not particularly used for only sourcing goods. Many of the times the in investments like projects sourcing professional are not asked and even the firm directly coordinates with the sourcing firms. This increases the risk that the desired competencies for a particular project are not being utilized in the purchase process. (Iloranta & Pajunen-Muhonen, 2012)

The process of purchasing of investment good flows on the same logical path that is followed during any other purchase decision. Initiation of any purchase is need driven of the final

product required. (Kotler & Keller, 2006). In case of investment goods, the driving need is customer's requirement to replace or expand a certain long term project (Sheth, 1973), or the changes by the government rules and regulation or that of any external environment (market need) (Johnson & Bonoma, 1981).

Purchasing decision of capital goods are also undertaken by buying centers which consist of different backgrounds equipped with technical and market knowledge. This process is similar as of other purchase decisions. (Spekman & Thomas, 2012). According to Hunter et al. (2004) buyers "undertake extensive, deliberate choice processes" in case of capital/ investment goods since there is high risk involved, instead of merely selecting any casual option to reduce the risk factor involved in the decision.

The way of handling the purchase process is complex due to high cost nature, but Iloranta & Pajunen-Muhonen (2012) argue that the purchase of capital goods is only separated from normal goods due to their huge scale and money involved, it attracts more attention and there is difference in accounting.

2.2. Information sources and e-commerce

2.2.1. Digitalization in purchasing processes

Digitalization has brought real shift in traditional company functions. Many of the hefty and time consuming processes have been digitalized in companies and the involvement of technology has helped in simplified the flow of information and communication. According to Garrido-Samaniego et al. (2010) Information and communication technology (ICT) has changed the mode of communication with in the companies and outside the companies. The flow of information is quicker and responses are faster, now a day's companies are focusing on intangible item which has made the communication process more complex and at the same time the purchasing tangibles has become more complex since now more information is digitized for every purchase. (Aarikka-Stenroos & Makkonen, 2014).

Sheth and Sharma (2005) says that electronic commerce has increased in our daily life and with the advancement of ICT the role of customers has increased as they take an active part in the process, this is called as "co-creation". Co-creation is the process that involves the customers and the producers to work as a team in agreement in the development and the delivery process. Co-creation enables the customer witness the efforts put in producing and delivering the service (Auh et al., 2007). It has also been emphasized by Sheth and Sharma (2005) co-creation adds value to the process, it gives the competitive advantage to the business by bringing in the customer and making him a part of the process. This increases the faith of the customer on the firm and later the customer will look for a co-creating partner in order to develop "provide co creation opportunities, universal availability, and flexible time schedules".

Claycomb et al. (2005) says that e-commerce has changed the business world; it has changed the way transections used to take place within organizations, which has reduced the cost and

efficiently improved the supply chain management. Market places have turned online, and with the globalization of these markets it is easier to spot the right supplier and has increased the spectrum of both buyers and seller with ICT applications. In addition to this automating the recurring transections is saving time and bringing efficiency in the processes and most of all the time restrictions are removed that were previously hindering and delaying processes in the "offline-era" set. (Claycomb et al., 2005)

In a nutshell the digitalization and its possible routes has enabled the companies to speed up the processes that have been discussed in. Figure 2.1.2 which shows charts of different purchasing processes, the steps if these purchasing processes can easily be automated and sped up by using IT applications, as Adamson et al. (2012) says that there is a significant amount of B2B purchasing processes that can be done without contacting the supplier directly through e-commerce. IT has improved the speed of inter firm communications (Garrido-Samaniego et al., 2010) that resulted in faster need recognition, specification, problem handling and searching the potential suppliers (Claycomb et al., 2005).

There are a thousand ways that IT can speed up the business processes. Documentation and requests can be made digitally and received almost instantly without any disturbance or threat of information mishandling (Hvam et al., 2006), still it does require an ample amount of human interaction. There is another way of increasing selling and reducing human interaction and effort of just sending quotations to the buyers that is a new phenomenon in the current market place known to be "guided selling". Through guided selling the pre-relationship phase of customer and buyer is reduced, increasing the amount co-creating work allowing the firms to work according to their own pace and do not apply repeated efforts over quotation and need recognition with the customer.

2.2.2. Information sources and their impact on purchase decisions

E-commerce can be segregated into three parts: e-procurement which is directed by buyers, e-distribution which is directed by sellers and e-marketplaces are directed by third parties (Chang & Wong, 2010). This segregation is widely accepted and adopted, reportedly has brought benefits to the businesses but has its own challenges.

Although information systems which are web-based are widely used in in B2B processes, academic field does not provide a definition that is widely accepted. Thus every author uses their own definition with minor changes in the wording and understanding (Parvinen et al., 2014; Piris et al., 2004). Duffy & Bale (2002) provides definitions of e-commerce gathered from different authors (Table 2.2.2.). The one thing common in all the definitions is that e-commerce is about business activities done electronically (Piris et al., 2004). For this particular study the definition used for e- commerce is by Claycomb et al. (2005): E-commerce is an innovation that brings integration in cross functional processes in the company sing World Wide Web for trading information, goods and services before and after the sales. It is web based and needs electronic data integration (EDI). 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 2.2.2. *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 business has grown their horizons by using technology and IT, the overall operations of the business are changed with the inculcation of e-commerce. It can be said that the electronic commerce has led the businesses to gain new form in the digitized environment. (Beige & Abdi, 2015)

There are many benefits that are associated with the e-commerce which actually forced the business to apply to electronic market places for example it reduces search cost, manages time

constraints, difference of time zone, bigger markets, facilitation n transections, easier communication with buyer and supplier, increased productivity & efficiency of the business (Nejadrini et al., 2011)

Electronic commerce is not just limited to smart way of communicating and automating and generating documents. (Beige & Abdi, 2015) Electronic commerce is the new way of doing business, it is a strategic decision that requires both horizontal and vertical integration of business processes (Beige & Abdi, 2015).

Implementing e-commerce is a management decision, it is complex and involves the restricting of many processes, and its impacts are long term. The implementation process includes many difficulties, such as: compliance, issues that are face during the management of implementation phase, integrating and consensus (Claycomb et al., 2005; Beige & Abdi, 2015). According to Beige & Abdi (2015) there are a total of seven different critical success factors from multiple different researches (Table 2.2.3.).

Table 2.2.3. *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

One of the key factors in a project's success is the top management's support (Buehrer et al., 2005). The senior management's support brings in confidence, finances and resources for the project, rest assuring the quality of the project and at the same time increases the implementation success rate. (Jianyuan et al., 2009)

The second factor involved in success of any project is the core purpose and the strategies used by the organization. The business environment is continuously changing hence to cope up firms need to strategize to obtain dynamic abilities (Al-Somali et al., 2011). Electronic commerce is also a strategic decision that involves many different departments, thus it has to be made by the management so that its implementation is aligned with other processes. (Claycomb et al., 2005)

In developing countries, most of the development related areas are dependent on the government support. Technology and technical developments are supported by government due to lack of resources thus such changes have bigger costs. In developed countries this cost weight is lesser in comparison. (Jianyuan et al., 2009) According to Beige & Abdi (2015) there is a hidden success factor for e-commerce integration i.e. trust. There is a significant decrease in the usage of e-commerce tool if the trust and safety issue arises.

The company has some hard core and some soft areas, company's culture and relative advantage are two of the soft areas which are directly linked to the company's strategy and support of its management. Here culture represents the feelings/ reaction of people involved towards a certain situation of inspected concept (Thatcher et al., 2006), whereas relative advantage depicts the related advantage that any new implementation can bring (in this case e-commerce) into the company in relation to earlier operating model (Zhai, 2010 and Li et al., 2008). In order to implement e-commerce in any company it is important that the people understand its importance (supportive culture) and the needed infrastructure is in place, otherwise it becomes very difficult to manage e-commerce and success rate is immensely decreased.

2.2.3. Importance of communication in information sourcing

B2B relationships are different that B2C, in B2B dealing the buyers have a small number but the quantity ordered is large and similarly the buyer and supplier relationship is closer. Due to this factor of marketing and business communication, the communication is more focused of preserving and gaining the trust and relationship with the customer. (Anderson et al., 2009)

For B2B communications the companies use different communication channels and using various communication models (Hoffman & Novak, 1996). Communication in marketing is one of the sub-sections of overall organizational communication (Figure 2.3.1.1) and is also known to be customer communication. The overall concept describes different activities during communication process and is deemed to support the sales function. (Vos & Schoemaker, 2008)

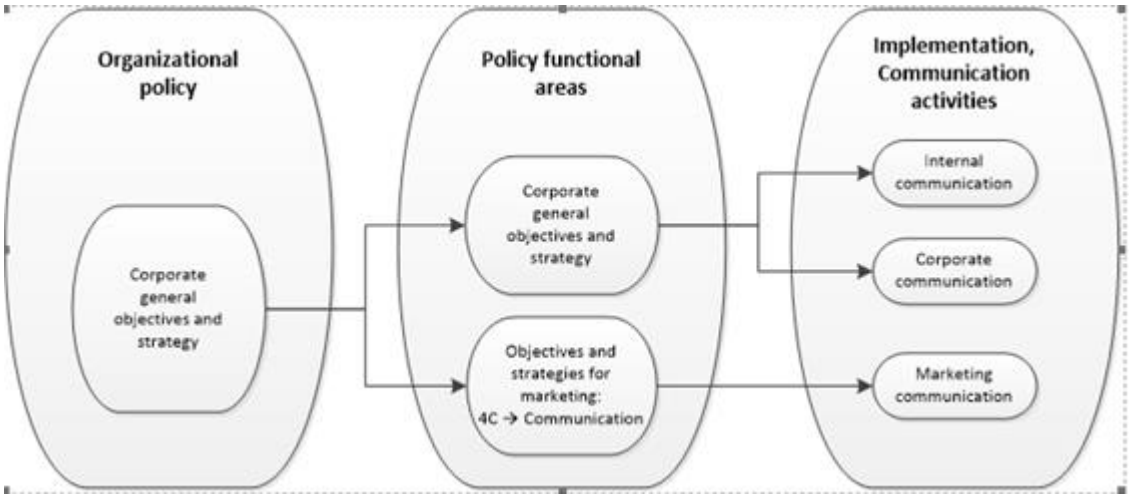

Figure 2.2.3.1. *The role of marketing communication in an organization (Vos & Schoemaker, 2008)*

The field of marketing communication has been drastically changed with the increase of internet usage and how the information is shared globally has improved the communication methods of businesses (Chong et al., 2010). According to traditional approaches the marketing communication model used was one-to-many model (figure 2.2.3.2.), this model makes the businesses reach their perspective or existing customers marketing efforts allowing very limited customer feedback (Hoffman & Novak, 1996). In the discussed model the information flow is usually one sided i.e. from company to customer, whereas the other model many-to-many model (figure 2.2.3.3), is more interactive and the information is co-created by the company and the customers alike. The latter discussed model allows a more interactive relationship of the parties with the mediation of digital environment. (Hoffman & Novak, 1996)

Marketing communication can be one- or two-way, it depends on the company preference. In traditional mass marketing methods one-to-many model (by Hoffman & Novak, 1996) was used, as it lets the seller make the decision on information sharing and make a favorable image on customer. But in relationship marketing the many-to-many model is more suited as it allows the customer to give feedback and his input. (Talonen, 2013) Here the importance of both the models prevails and these don't exclude each other. The customer uses many channels to source information from suppliers.

In the 21st century the relationship marketing is gaining popularity (e.g. Cova & Salle, 2007; Iyer et al., 2006). As described by Iyer et al. (2006) companies can gain additive advantage if the continuously work on their offering and marketing strategies with effective interpersonal relationships (Iyer et al., 2006).

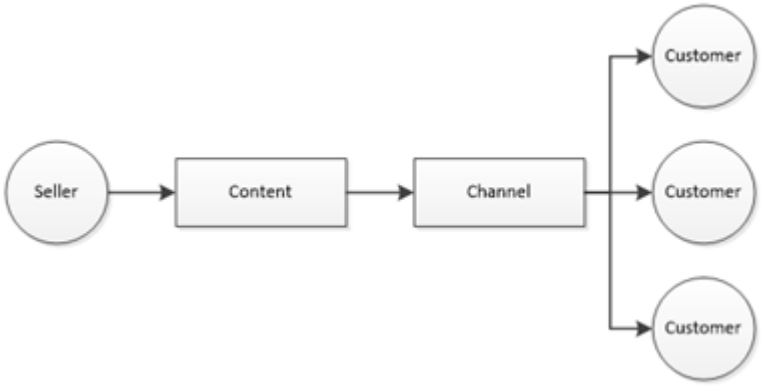

Figure 2.2.3.2. *Traditional one-to-many communication model (Hoffman & Novak, 1996)*

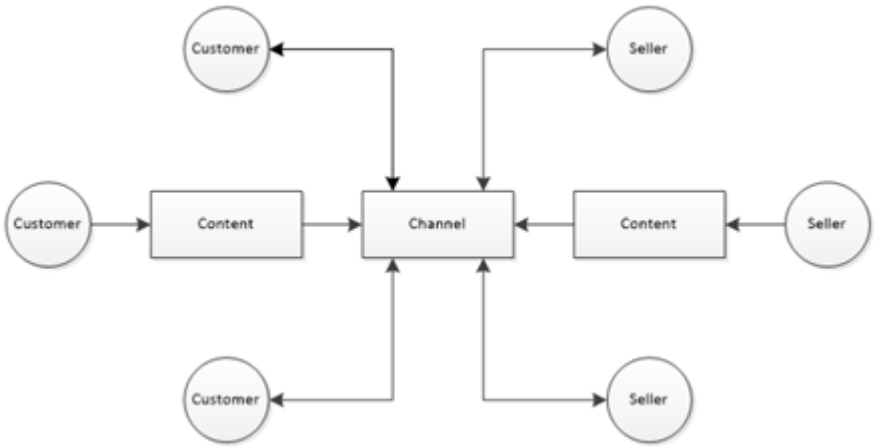

Figure 2.2.3.3. *Traditional many-to-many communication model (Hoffman & Novak, 1996)*

Marketing function is composed of different communication channels and the increased use of e-commerce has positively affected the way of how marketing function operates. In order to remove communication constraints like time and space people have started using E-marketing. It means that now ICT is used through electronic platforms to maintain and built customer relationships (e.g. Chong et al., 2010; Shets & Sharma, 2005; Watson et al., 2002). Marketing fuction is tremendously shifted its operations after incorporating E-marketing techniques as it allows the companies to work according to the customer demands and at the same time it is an efficient way to reduce transection cost (e.g. Sheth & Sharma, 2005; Watson et al., 2002).

Business has reaped many benefits by using electronic marketing which are quite similar to overall benefits of e-commerce. Gilmore et al. (2007) put forward many reasons to adopt e-marketing as a business communication option: competitive advantage, much lower operating costs, dimensional marketing mix/ communication are the important areas (also Chong et al., 2010; Watson et al., 2002). Gilmore et al (2007) also raise the point concerning mainly SMEs that implementing e-commerce with a specialist can create problem for the marketing function while implementation and later operations resulting in competitive threats (Gilmore et al., 2007)

As in business it is important that all the strategies are linked together similarly e-marketing strategy is mandatory to be linked to the overall business strategy, as does e-commerce as a whole. Electronic marketing enables the business to customize marketing activities according to the different needs of the customers across the globe. (Chaffey, 2004; Watson et al., 2002) Chong et al. (2010) presented e-marketing framework (figure 2.2.3.4) for B2B marketing allowing the business to use technology with traditional marketing practices of communication and valuing customer by integrating IT and commerce. According to the proposed frame work e-marketing can be integrated with the business processes (Chong et al., 2010)

Figure 2.2.3.4. *Framework of e-marketing for B2B firms (chong et al. 2010)*

According to Chong et al. (2010) e-marketing should be merged with other automated systems such as ERPs and CRMs already working in the company to get the best results.

The major benefits reaped from the use of internet marketing are reduction in cost and extended access to buyers and suppliers (Watson et al., 2002). Customers can be reached at any point in time and be delivered desired information almost round the clock which was not possible in the traditional marketing ways. (Watson et al., 2002; Chong et al., 2010) during B2B dealings it is important that you deliver right information to the customer and it is possible in e-marketing since the communication is two ways it is simpler and quicker to design and deliver customized product info to customer Sheth & Sharma (2005) suggests that

this kind of information flow will lead to reverse marketing. If applied this approach the companies can shift to customer-centric marketing from mass/segment marketing by delivering customized products the transactional costs can be reduced, thus raising the customer service value.

2.2.4. Preferred Sources for business-to-business information gathering

To get the benefits of e-marketing it is important to understand the correct use of marketing communication channels, thus companies must know that which tools customer prefers to use which gathering their desired supplier's information. (Talonen, 2013) According to Gummesson (1998) knowing your customer is vital to determine what he needs and then design a process that creates value for the customer. Marketing communication management's process will be easier for the company while making offering to satisfy the customer's needs. (Gummesson, 1998)

Purchase decisions are based on the communication between the buyers and sellers hence issues in communication processes are defined to be the important reason of failed buying decisions (Johnston & Lewis, 1996). As the information technology era has bloomed, sourcing of information for decision making has become more common (Kuruzovich, 2013), yet the phenomenon prevails that the quality lowers as more are purchased. Although gathering information before purchasing products has been done long before e-marketing (Sheth, 1973), Sheth (1973) describes that information sourcing is common and especially when there is a purchase of complex product. The need of a certain product leads to information gathering and the complexity of the product sets the direction for the search (Spekman & Thomas, 2012).

Talonen (2013) has divided the sources of into four categories: personal-commercial, personal-non-commercial, impersonal-commercial and impersonal-non-commercial (table 2.2.1.). The background of the person sourcing the information influence the type of sources and the information content (Johnston & Lewin, 1996) and similarly the use of the information sources varies from person to person depending on the complexity of the product, at which stage the project is, preference of the buyer and urgency of the need (Talonen, 2013).

According to Moriarty & Spekman (1984) the more the use of non-commercial recourses used the closer the process is to purchase decision. Impersonal commercial sources are frequently used in the phase where the buyer is gathering information about the prospective suppliers or is searching for an alternative source. Whereas in impersonal and non-commercial resources, the buyer is looking for a sources to be used for solution selection. (Moriarty & Spekman, 1984)

Table 2.3.1. *Information sources for industrial buyers (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

Talonen (2013) says that personal selling is more significant when the product, solution and brand awareness is already in place, i.e. for this mass marketing communication can be considered as an option. In addition, the writer suggests that decision making for purchases in 2010s is also effected by, geography; the location where the buying center is; and offering awareness; scrutinized problem and complexity of the product, i.e. one researcher might adopt different information sources depending on products and situation (Talonen, 2013).

Personal information sources are widely used in high risk and highly financial decisions (Moriarty & Spekman, 1984). During purchase decisions the influence of referrals and peer pressure and supplier pressure with which buyers have already done business with is also an important factor (Talonen, 2013).

2.3. E-marketplaces

2.3.1. E-marketplaces and business

IT has changed the outlook of the world and its applications have affected everyone. B2B dealings have been significantly affected by the incorporation of IT applications and one of the major reason of this change is e-marketplaces. As Chong et al. (2010) explains that there is a huge contribution of e-marketplaces in developing business and making worldwide markets available for e-marketers. E-markets are used equally by the SMEs and large businesses. E- marketplaces can be defined as a means of accessing different markets, in a way that reduces cost and increase the flow of the products hence rising competition.

B2B scenario is totally changed with the increased awareness of e-markets; the development IT has brought has changed the industrial context (Zhao et al. 2009). The efficiency and effectiveness of buyers meeting the suppliers has increased with the benefit of lower transection cost, searching resources and overall increasing the options for the business.

Further Chang & Wong (2010) explains that apart from the benefits Zhao et al. (2009) stated, e-markets also play a vital role for the company's procurement and business development departments by making it easier for them to look for new products, business ideas, purchase markets and customers across the globe.

Table 2.3.1.1. *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

According to Chang & Wong (2010) there are many attributes the most important ones is to have a legitimate business deal, possess right IT skills and work efficiency are the main to have a success in e-marketplace. In business the most important things are to save cost and make good use of time and in an e-market the companies can benefit from the both. Another claim made is that using e-marketplace may provide access to suppliers to higher management levels in the buyer's company, but this is not being tested yet.

Peer pressure is very strong in the businesses, as discussed above in this context legitimacy is pointing towards the peer pressure that is involved while working in huge industries. There are different consequences attached to the act of participation and non-participation in the e-markets. There are different mind sets some companies may want to grab the opportunity by thinking to have the right set of technologies available with them and at the same time some companies might not take the risk due to the fear of isolation and losing existing customers. It is important to acknowledge possession of right set of technologies. E-commerce is a vast space with requires capital investment and taking strategic decisions to gain a sustainable advantage and cash it as a competitive edge and for this advance IT infrastructure is required. (Chang & Wong, 2010)

There are many structural models used b different researcher to explain e-markets. Gulledge (2002) presented another model which is somewhat similar to that of Chong et al., (2010). In Gilledge (2002) model the e-market is defined as a portal providing space for the buyers and seller to meet and usually this portal is the website of the seller. Theoretically the e-marketplace is used to bring together buyers and sellers and their number might be infinite. Since it's a virtual platform thus trust issues arises and for that purpose it is important that the (Chong et al., 2010) marketplace chosen is safe and fulfills the needs and wants of the buyer and seller.

Figure 2.3.1.2. *The general B2B e-marketplace structure (Chong et al., 2010)*

There are many factors which effects the e marketplaces which includes to competence, friendliness, safety and predictability but the most important factor is that of trust (Chang & Wong, 2010). Since there is limited or no personal contact of the buyer and supplier, the reliability of the information and its safety is a huge issue. According to Zhao et al., (2009) the most important factor in the success of an e-market place is achieving trust of both parties the buyers and the sellers. According to Chang & Wong (2010) this stands true that a collaborative business relationship is based on the level of trust between both parties.

2.3.2. Sales management in business-to-business context

Companies nowadays are working twenty-four seven to improve their performance, in this ever demanding world companies must strive heard to survive in the competition. The two most important cost factors that companies must work on are sales and customer management. Both of these factors are really important in the success of a company aswell.in order for a company to succeed it is necessary that a company invests their resources where they can yield the highest of benefits without even reducing their sales costs. (Dannenberg & Zupancic, 2009)

Sales management has a ton of definition each compiled by different researchers based on their data collection and it includes a variety of things. One definition is provided by Dannenberg and Zupancic (2009) they state that sales management is basically developing and then managing personal sales contacts, sales system and distribution in local and global markets (Dannenberg & Zupancic, 2009). Similarly, Jobber and Lancaster (2009) have stated that the term sales management constitutes of five different categories which covers the following 1) *recruitment and selection*, 2*) training & motivation*, 3) compensation &

organization, 4) budget & *sales forecasting* and 5) *performance evaluation* (Jobber & Lancaster, 2009). Another model is presented by Anderson et al. (2010) which is quiet similar to the model discussed above by jobber and Lancaster. The categories for the model are listed below:

- Sales force organization and development
- Directing and managing the efforts of sales force
- Evaluating and Controlling performance of sales force

These three areas are further divided in to ten different areas of responsibilities and management in sales management. Details of which are given in the below diagram. In this study sales management will follow the same definition as provided by Anderson, because the model provided by him is most parallel to what is used in this research. (Anderson et al., 2010)

Figure 2.3.2. *Conceptual framework of sales management responsibility areas and duties (Anderson et al., 2010)*

As the times have changed now so is the concept of sales management has changed in this era (e.g. Storbacka et al., 2009; Töllner et al., 2011, Jobber & Lancaster, 2009). Sales management is now more about creating and forming long term relationship with the customer other than focusing on the sales of the product. Storbacka et al. (2009). One thing that sales management is now more concerned about is the satisfaction of the customer and it involved all the process to meet the demands of the customers so this means that sales has

now become more about being a continuous process other than being a series of separate transactions (Storbacka et al., 2009).

Moreover, Töllner et al. (2011) also believes that in order to strive in this century the organizations must prioritize their customers' needs and demands first and then focus on t improving their product and technology. (Töllner et al., 2011). Understanding the customers' needs and behavior is actually the best way to market your products.

One change that sales functions has to face in today's world is the ever growing use of internet and internet related technologies for the processing and as well as executing the order. All the traditional duties and process of sales management are now being taken up by the internet and it is important to keep up with the internet and technology if the company's wants to optimize their sales and management, because it is the demand of the time and customers. (Storbacka et al., 2009).

2.3.3. Sales channels

Different methods have been used by the companies traditionally to reach their customers but now with the advancement in internet and technology these methods have been changed generally all companies' uses two different methods to reach or follow their customers which includes: channels of direct sale for organization or outsourcing firms (Mattsson & Parvinen, 2011; Yang et al., 2015).

Both these methods have their own sets of advantages and disadvantages. Different researchers hold different views. Yang et al. (2015) believes that direct selling is a better option as compared to the other one because it eliminates double marginalization and helps in improving the profit ratio for the company. Similarly, Mattsson & Parvinen (2011) support this claim, and state that following the direct sales method gives the owner more control and margin over the pricing and selling of the product. This method is especially more beneficial in cases where the high costs of the products are served to the (Mattsson & Parvinen, 2011).

The two methods are further divided into different levels. Mattsson & Parvinen (2011) introduce that sales channel configuration can be done in four different levels. The levels start from zero and it depicts B2C relation where the business is directly dealing with the customer for the sale purchase. Level one shows industrial dealing with the customer. Level two shows a dual relationship of the manufacturer and involves both level zero and level one characteristic and here the manufacturer can deal with both the customer and the intermediary distributor. Finally, on level three the manufacturer owns a branch that makes the sales and hence acts as a representative or sale branch. Here the representative is from some other sources and are part of the structure much smaller than the sales branch (Mattsson & Parvinen, 2011).

Previous research on direct selling shows that, direct of selling is better because it focusses on products that are equally substitutable. The problem arises when the products possesses symmetric issues relating to brand equity and substitutability. According to Yang et al. (2015)

indirect selling possesses benefits but they are only feasible when the products are equal substitutability to the products in competition of price. The researchers say that to avoid the confusion and reduce the competition the sellers decide to avoid this imbalance in substitutability and brand equity, sell directly

So it is concluded that when the question is about competing on pricing, it is better to opt for direct sales methods. Yang et al. (2015). It is better to sale complex and high technology products through direct sales. Mattsson & Parvinen's (2011) also supports this idea. Moreover, Jobber & Lancaster (2009) also states that products that of low cost and are low technological products are better suited for indirect sales channels, as the risk involved is less. However other than these two factors there are also many others factors that needs to be taken in account when deciding the sales channel which are as following

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

2.3.4. The effect of digitalization to business-to-business sales

As the advancement in technology has greatly affected other areas of life, so is the area of sales management which is greatly affected by the advancement in technology over the time. there have been many evolutions in the it filed over the time and this has resulted in new technological developments. Jobber & Lancaster (2009). Similarly, Kuruzovich (2013) are of the view that the ever growing use of internet in the world of sales has greatly affected business terms of increasing the sales productivity, which is very beneficial for the organizations.

Because of the advancement in the use of internet the competition all over the world has increased significantly. The use of internet demands sales management to adapt with it. as a result of this Jobber & Lancaster (2009) have come up with three different group of forces that affects sales management in the modern era. These includes: 1) *Behavioral forces*, 2) *Technological forces* and 3) *Managerial forces*.

The behavioral forces points towards the behaviors and attitudes that the customers/ buyers have in the market and the technological forces points to the advancements in the field of IT which develops e-commerce, lastly the managerial forces are the ones responsible to manage the whole operation of sales.

The main factor under technological forces is Sales force automation or SFA. This involves the use of technology to improvise business tasks which also includes sales functions or

resource management Storbacka et al., 2009). Sales force automation (SFA) helps the salesforce to get the unified information just like a central database to enable them to present unified information (Jobber & Lancaster, 2009).

Hunter & Perreault (2007) believes that SFA has a great role in increasing the productivity of sales functions. This fact is also supported by many other researches by (Ahearne et al., 2008; Sundaram et al., 2007). One factor that has increased the productivity of sales function is the use of virtual offices. These offices don't restrict the employees to be in the same space as other people to interact with them, because they can communicate with each other through other means such as video calling and phone meetings, these methods are also very beneficial in saving costs which also results in increased job satisfaction (Jobber & Lancaster, 2009)

There are also many other components other than SFA which affects the sales of the company. Another tool that affects SFA is CRM known as Customer relationship management. Both of these are core business strategies, like e-commerce as whole. (Holloway et al., 2013; Iriana et al., 2013). One reason for which salespersons use technology is because it allows them to be more productive.

The sales functions in businesses nowadays are greatly affected by the use of technology in all fields. (Avlonitis & Panagopoulos, 2005). Information systems are basically described as tools which are used to improve the efficiency of an organization in areas such as communication and information management (Hunter & Perreault, 2007). With the use of technology, all the information is more organized and unified and easily accessible which in turn helps in increasing sales and improves marketing (Kuruzovich, 2013) the use of internet has helped in all fields including searching for new customers, forming relations with new customers, following existing customers and sustaining relations with all the customers (e.g. Long et al., 2007; Kuruzovich, 2013)

Stakeholders nowadays also use technology to identify and build relations with customers with whom their needs match (Schultz & Patti, 2009). However, some researchers such as Aarikka-Stenroos & Makkonen (2014) believes that the shift from direct communication to indirect forms of communications, such as through video calling has made valuable communication much harder to achieve. These forms of communications have increased the complexity of the whole sales process due to which buyers have become more demanding. In sales the most important and difficult task is to generate and close leads and IT applications enables the user to do that and drive growth that is dependent on higher sales. (Kuruzovich, 2013)

Improving technology in sales function directly effects the growth and thus results in creating new positions. Since increase in technological use will raise the need of IT professional who can work on ERP etc. Delegation of duties in IT function helps the process of easing the strategic planning and putting more focus on production and marketing function. (Claycomb et al., 2005)

The use of IT in business not only helps in improving sales functions but it also helps in other fields such as helping in saving time sales and marketing activities. With the development of websites and other web technologies it has become very easy to contact new customers easily. (Brodsky, 2001). Because these technologies help in matching the buyers with sellers through automated systems which results in overall efficiency of the whole process. (Zhao et al., 2009). Another advantage of the use of technology in business is better information flow and more dynamic pricing tools which results in more time for other values adding services. (Porter, 2001)

2.4. Online selling

According to karr, 2014, it is assumed that about 57 to 90 percent of a customer's buying decision is already made even before the potential supplier is being contacted (Karr, 2014) and this is possible because of online selling, online selling has made the access of information about a product much easier and direct to the customer hence decreasing the importance of presence of a sales person.

However, on the other side some researchers also make claims, that this approach may only be a myth. Supporting this Apollo (2014) says, such figures are misunderstood and holds no value especially in the case of complex buying decisions where he states that where "there are higher prospects of engaging the customer earlier with the vendors" (Apollo, 2014).) The results of all the non-academic discussion highlights that the presence of online selling system is needed, but however how much of it is needed is still greatly debatable, especially the debate about replacing online selling with one to one human interaction required for direct selling.

The use of Internet in selling has proved to be quite useful for sales personals involved in B2B sales. According to Long et al. (2007) that the use of Internet can help the sales rep to make new accounts, serve existing customers in a better way and in advance increase the quality of relationship. Online selling increases the the limit of the sales and quickens the transection time (Lichtenthal, 2003).

Moreover, Parvinen et al. (2014) explains online selling still needs more academic inspection and needs to be more developed and conceptualized in order to be used in information systems, sales management or electronic commerce literature. Online selling is considered as an activity for the sake of this study and it has been seen that it is different as compared to other activities like e-commerce and electronic marketing. It is actually considered to be a human or a human like activity which helps in atomization of the supply chain process and generating information in a way that is convenient to the buyer (Parvinen et al., 2014).

Buyers overall demand for lower priced goods with minimum time spent in handling the orders also resulting in overhead costs in general. According to Tarazone-Bermudez et al. (2014) essentiality of internet as a tool in providing and fulfilling these demands of the buyer is evident. Similarly, it is also beneficial for the suppliers because it helps them by increasing

their customer base and provides them with new means of increasing their sales, and also reducing excess inventory and also reducing their administrative costs. Similarly, Long et al. (2007) also states that these objectives can only be accomplished through communication and this does not only include direct communication by the salesperson but it also includes all forms of non-personal modes of communication at every level of the organization, including advertisement and direct marketing. Complementary role is played by internet in enhancing the sales function (Long et al., 2007).

The most used venues are the electronic auction tools used for selling. There are many researches (Li et al., 2011) that provide insight on how sales processes are handled in these market places. The sales in online sites are made without the prior knowledge of the supplier and provide the supplier to make an impression on the buyer for better relationship. Sashi & O'Leary (2002) says that it depends on the auction tool used for the sale and accordingly the buyer can check and compare the prices of the products offered.

Long et al. (2007) explains that online selling is a very helpful tool for the sales person in increasing their sales and also making new relations with the buyers. This helps them find new markets and contact new buyer online. Lowering the transection cost the system of online selling is also benefitting the business in two ways, 1; by increasing the potential buyers and 2; by reducing the information sharing and transection cost. (Long et al., 2007).

2.4.1. Characteristics of a good online selling website

Websites are the face of the company in the e-markets to improve the relationship with the buyer a good website can improve the impression (Hsu et al., 2013). Websites that are selling online provide a great advantage to the companies by automating the information exchange between the sales force and the buyers; it helps in gaining new leads (Porter, 2001). According to researches the characteristics of a website are very important to send a correct message to the buyer and develop relation (Hsu et al., 2013). Characteristics of the website make the user's mind about the elements and the service quality (DeLone & McLean, 2003).

Thongpapani & Ashraf (2011) states that the website should provide a comfortable and user friendly environment to the customer, which features to provide easy access to the information he is looking for, and this is in line with information search and risk perception theories. These facilities can be provided to the customer by offering them with personalized websites that actually increase the comfort and user-friendliness for the customer. To increase the satisfaction and commitment of the buyer, reliable information transfer and easy access plays a vital role (Hsu et al., 2013). According to Parvinen et al. (2014) that an online buying experience is perceived good when the customer is detached from the real world while buying and feels personal during the experience.

The IS support model by DeLone & McLean (2003) is widely used in Is search. Based on this information system Chen et al. (2013) provided the framework for better understanding of the e-commerce website (figure 2.5.1.). According to the model, three variables are related to

system, information processing, quality of service and attitude and satisfaction of the user towards the website determine the effectiveness of any website.

Figure 2.4.1. *Success factor of an electronic commerce website (Chen et al., 2013)*

Providing the customer with detailed information regarding the object is considered to be one of the major and first success factor for an electronic commerce website, and this process has become easier with the IT application developments and B2B internet use. As the companies are providing more and more information over their websites, it has become easier for the customer to make the decisions with wide variety of products and compare and choose amongst the best fitting their needs. This has increased the customer experience and overall satisfaction level (Thongpapani & Ashraf, 2011). Agreeing with the statement Chakraborty et al. (2002) also states that getting the feel of trust and communication are the most important to make the buyer stay and make the decision hence proving website effectiveness.

However, providing more than required information can also lead to decline in sale. According to various researches (e.g. Chen et al., 2013) states that incase a lot of information is provided this might lead to causing confusion in the mind of the respondent. This is a poor quality website that confuses people with too much information and making it difficult to find what is required. In this situation it is difficult to gain customer attention and helping him make the purchase decision. According to Chakraborty et al., (2002) the manner in which the information is presented determines the success of the website. In order to maintain the quality of the website, the information provided should be easily comprehendible and to develop an understanding after finding the desired information is easy (Chen et al. 2013).

Another factor is the system and this refers to two categories which includes usability and availability. According to Chen et al. (2013), usability of a commerce website can be measured by the ease of use of information provided, layout logic arrangement of the provided information, while availability is assessed through the accessibility of the website that whether it is working or out of order. According to Chakraborty et al. (2005) user

satisfaction is directly correlated to the system quality and viability of the required information this determine the effectiveness of a website

The third factor which measures the success of an e commerce website is service quality which is quite parallel to system quality because the quality of system empowers the service. The construct of service quality is simple and is based on three factors trust interactivity and personalization (Chen et al., 2013; Chakraborty et al., 2002). The first factor which is trust is a very important one and difficult to develop because for customers to have trust on the website, they need to feel secure while performing a transection and providing their personal information (Chen et al., 2013), and the website needs to hold a good reputation to maintain the trust. According to Chakraborty et al. (2002) interactivity is important for a good website; it is also linked to the personalization of the website. Here personalization means that that the website recognizes the visits from the same user and serves the information with implicit or explicit individual preferences.

There have been many researches on the e-marketing tools i.e. websites and what should be characteristics of a good website but there is no hard and fast rule that what kind of information can be a success factor for the website. In my opinion this is what makes this more interesting and competitive. According to Briggs & Grisaffe (2010) put light on how websites are economically important, in case of B2B transections if the website is not producing value than it actually is seen as obsolete and at some point it is also damaging the business. (Hsu et al., 2013) believes that customers are likely to revisit those sites which they trust and with whose contents and services they are satisfied.

With the advancement in time and technology the importance and usage of electronic commerce has grown. Now it has become crucial for companies to gain the customers e-loyalty for their own growth and survival and by improving the customer experience in the way of online shopping, this can be increased. The traditional laws of B2B relationships have not changed but the playing field has certainly changed. In order to maintain their customer loyalty companies now need to speed up and companies need to make improvement in what they offer and quickly adapt to the changing needs and demands of customers (Janita & Miranda, 2013)

2.4.2. Role of social media

The ways of communication and interactions have been shaped differently with th eincresed use of social media. However, the phenomenon of social media is not new; it is evolving with the human interaction since the begining of time. Recently social media has palyed a vital role in transforming communication methods between individuals and hence impacting businesses indirectly and directly. Networking through social media electronic based has become an essential part of our everyday life. (Edosomwan et. al, 2001).

Companies have increased the use of social media since it has been seen that there is a huge gap between the actual use and potential use of this medium in business world. Many companies have found ways to reduce this gap (Jussila, 2014).

According to Rapp (2013) there is a trend of positive contribution of social media in business performance, brand recognition and consumer–retailer loyalty. Also there is a circle of effects generating from supplier social media practices to retailer social media practices and leading the effect to the customer creating a brand image. Use of social media has increased but yet there is room for improvement on use of business side. This can bring about performance related changes (Rapp et. al, 2013).

2.5. Sales configurators

2.5.1. Purpose of sales configurator

With the increase in industrialization the amount of products available for one purpose has increased, this has taken the world to move towards customization (Pine, 1993). The acceptability of customized products has actually enabled the companies to produce according to customer needs and wants and increase the variety of the products with in possible company resources (Trentin et al., 2013). Making the customer make the decision through a sales configurator will empower him and increase the experience quality of the customer (Trentin et al., 2014).

According to Mittal & Frayman (1989) configuration is defined as "a design activity that is specialized feature of assembling the product with the pre-defined components available in the system". As described by Zanker & Tiihonen (2008) a configurator provides with the valid configurations based on the requested criteria at the same time it also ensures that the configuration is compatible with the customer requirements.

In business terms the meaning of sales and a product configurator are used interchangeably at times but in situations their meaning may differ. Pimiä (2002) explains "a sales configurator is used as a product configurator to fulfill the needs of sales personnel. It may be a software or a part of a software which the sales force use to draw sales quotation b putting in customer requirements".

According to Haag (1998), the concept of a sales configurator revolves areound two parties the software and the user (either sales representative or the customer). Through this system the customer or sales rep can configure the product with the available set of parts in the system and get a quotation accordingly. According to Kopra (2003) configurator is accessed through internet to generate the quotations automatically.

Many companies are using these configurators to involve the customer in the decision making process of designing products. This allows the companies to include the attributes with are preferred by the customers (Huffman & Kahn, 1998). This is also feasible for the company to gather information of the customer to be used in future (Berman, 2002). Usually the sales configurators are used in e-commerce (Forrester, 2012), yet mostly the sales configurators are being used for B2C (Cyledge, 2013). This study will get in details of the uses of sales configurator in B2B setting.

To make the quotation detailed so that it can be used by the receiver there are a few factors that need consideration. According to Kopra (2003) configurator is a front end application and it needs appropriate data at the backend to support its working, such as ERP or DMS (data management system) for example customer data, machine information, spare parts details can be the information required at the backend to support the front end function. (Kopra, 2003)

As Trentin et al. (2014) explains that the manufacturer needs to understand the details of the system such as customer needs and product attributes to ensure that the configurator is equipped enough to generate required results. A successful configurator needs to have a user friendly interface, reliable data, easy comparisons and cost benefit analysis. (Trentin et al., 2014)

To help reduce the product variety paradox, sales configurator is an effective tool. It helps in making the customer feel as ease while making the purchase decision do not to be confused by all the variety of products that are being offered by the company. As a fact the increase in product variety might decrease the sales rather increasing by confusing the customer in options and making it had for him to find the difference and make a decision (Gourville & Soman, 2005). According to Trentin et al. (2013) with careful deployment of sales configurator, this paradox can be avoided and the goal of increased operational efficiency can be achieved.

2.5.2. Effect of sales configurator

Correct integration of sales configurators is important to achieve the best results for the business, Abbasi et al. (2013) explains that the ability of a company to provide a customized product with the right cost is a must to have competitive edge. In support Tiihonen et al. (2013) says that integrated solutions enable the company to provide efficient response to the customer. According to both the researcher's configurators can bring in efficiency in the business however it is needed to understand that the product involves such predefined variations.

Product configurators are not only used to bring in variety to the product offered. The key feature of an integrated solution is to ease the work by providing all kinds of data like catelogs, sales invoice, quotations, listings, new product innovation details, document generation and order functions (Kopra, 2003).

Ershov et al. (2012) says that in process winning and order the quotation is the most important step. He further explains that to maximize the chances of purchase is to ease the process and provide the quotation after understanding the needs of the customers. Before making the actual quotation a rough dimensioning of actual needs is to be taken into account.

3. RESEARCH METHODOLOGY

3.1. Case company

The case company on which this research is based on is a Finnish construction machine manufacturer, Scanclimber Oy. The company's core business includes the design and manufacturing of high rise working platforms and hoists. In addition to design and manufacturing, Scanclimber provides after sales services to its customers regarding machine installation, configuration, technical consultation and spare parts. The product range of the company includes,

- Work platforms
- Construction hoists
- Industrial elevators and hoists
- Transport platforms

The major part of Scanclimber's customer portfolio includes machine rental companies (95%) and remaining share includes end users. These machine rental companies mostly deal with construction machines for scaffolding, high rise aerial working platforms, cranes and other equipment for building façade work. The end users are the companies which rent these machines based on projects instead of buying them. Scanclimber sales figure suggest that 65% of the total sales belong to Europe. US get the sales share of 25% and remaining 10% is distributed among various regions in rest of the world, mostly in Middle East, India, Australia, Malaysia and few countries of Africa.

Scanclimber Oy has its head office in Pirkkala, Finland whereas the manufacturing facility is located in Gniezno, Poland. In addition, there are various sales agents spread across Europe. They are working in Germany, France, Netherlands, Turkey and Sweden. Outside Europe, Scanclimber has sales agents in Australia, Malaysia and UAE. The sales network has been expanding over the years in accordance with the potential of markets. (Scanclimber, 2016)

This survey distributed containing systematically formatted set of questions to mainly our customers. The idea was to understand their preparation process for any machine investment. Additionally, their important information sources, data collection and its management and configurator experience was determined.

3.2. Survey objectives and structure

The objective of the CPQ survey for the company can be defined in two ways,

1. First objective is in relation reference to general marketing which focused on analyzing if information sources regarding new machine investments have changed in construction industry over the years. As social media and web content gets more and more importance, how this factor is influencing the purchase decisions was part of this objective to be explored.

2. The second way and more significant objective was to examine the feasibility of integrated solution like product configurator in rental construction industry. The first step regarding feasibility was to analyze the current information sources which are highly regarded for construction industries. Once information sources were identified, the management of this information regarding new investments was important to determine.

A comprehensive survey was created which comprised of following core sections i.e. ,

1. Introduction: to get the idea which how long the respondent has been working in construction industry and demographics of respondents. This was important as different markets have different approaches regarding investment processes.
2. Investment Decisions: to understand the respondent's current role in his/her company investment process and to get more insight on how systematically company's preparation towards making any machine investments.
3. Information Search & Management: This section was created to understand current information sources which companies use for preparation of procurement, how they manage and make use of collected information.
4. Suppliers, Newsletters & Configurator (CPQ): This part was emphasized on importance of supplier e-newsletters for companies and configurators, if they were familiar with configurators, their experience and expectations.

3.3. Type of research

The study deals with human purchase behavior, thus it is difficult to quantify the results of the study since people might be willing to experience advancement in information source in the form of an integrated solution. To get better insight the study adopts Triangulation (Downward, Mearman, 2007) i.e. the study will use two data collection methods to get the detailed responses on investment decision making, information sourcing and integrated solutions. This will increase the validity of the study and will give depth to the study. The reason to adopt triangulation is not to cross-validate the data but to capture different dimensions of the variable.

This particular study will adopt Inductive research since the case study focus on observation of customer attitude, gathering data about trends to information sourcing and generalization and theorizing based on the results that whether customers will be willing to use an integrated solution to make purchases or not.

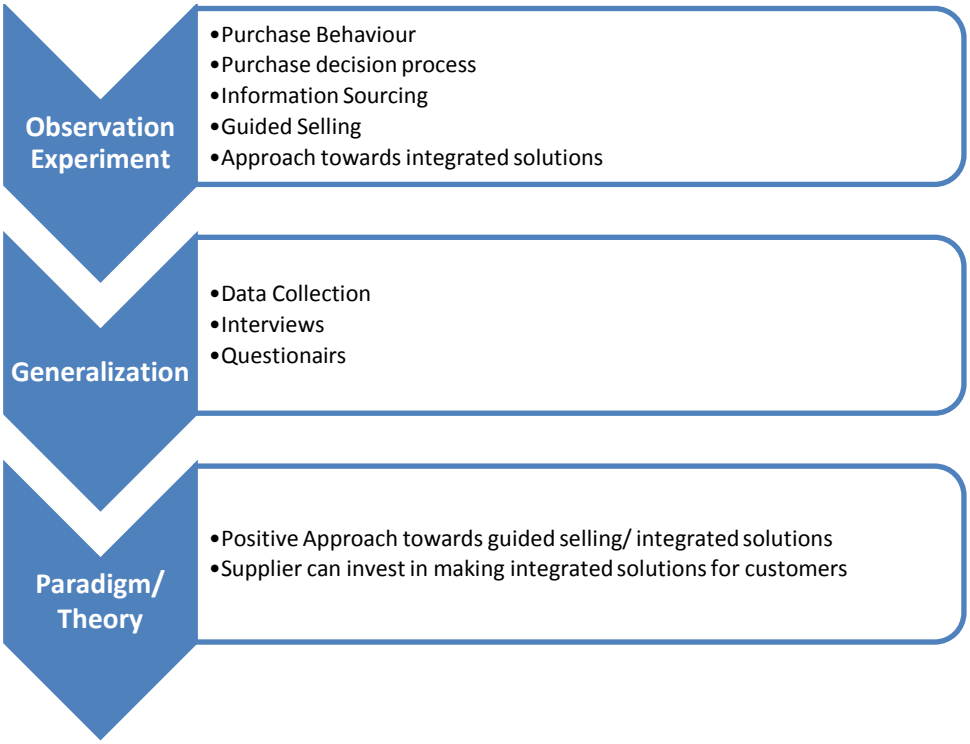

Figure 3.3. *Inductive framework of study*

Thus the research work was done in a systematic manner to extract the information. Observations were made through the data collection of sample firms and the results are presented in chapter 4.

3.3.1. Data collection

Type: The data will be collected in both qualitative and quantitative manner, through interviews and questionnaires about the three dimensions of the research, Investment decision, and information sourcing and guided selling / integrated solution.

Sources: The data used for the research will be collected by the researchers from the primary sources and will be hands on raw data.

There are two tools used for the data collection, questionnaire and interviews with representatives of the firms.

The questionnaire was developed with the guidance of the supervising manager of the Company (Scanclimber). It is divided into 3 major areas investment behavior, information sourcing and guided selling. The questions were divided into multiple choice and open ended questions to get the clear customer view. Questionnaire is attached as appendix 1.

The interviews were conducted over the telephone for one to one interaction with the respondents and to probe into their preferences and behavior on the study's variable. The questions in the interview were structured and were the same questions as in the questionnaire. Interview Questions are attached as appendix 2.

3.3.2. Sampling:

Simple random sampling is used for the study. The study is conducted on the information sourcing of firm purchasing investment good (construction machinery). The case study organization (Scanclimber) is a Finnish company having customers across the globe. The sample was taken from the population of customers and the survey was sent to all the 2000 customers. Since for this study the unit of analysis was "firm" thus it was difficult to obtain a high response rate.

60 Questionnaires and 8 Interviews were used for the study analysis. Any questionnaires which were incomplete or interviews with incomplete information were not included in the study for the purpose of maintaining reliability. The respondent firms included firms from different regions, the questionnaire and interviews were done from different customers based on the language preferences and ability to understand the purpose of the research. The results from 68 responses in total provide a stepping stone for a generalizable study.

A pilot study was also conducted before the detailed survey, to check the trends of the questions and see if the questions are not misleading and are easily understandable for majority of the respondents. Also that the questions that are linked in different sections makes the sense to the respondent and no confusion is caused.

3.3.3. Data Analysis:

The data collected is than recorded in excel file. The study presents its results in the form of the graphical representations and numeric as it was the preferred way of the company. The graphs and frequencies are used to show the comparison of different responses. The results provide the trends of the customer inclination towards investment decisions in construction machinery and how they source their information while looking for a supplier and would they like to have a product configurator over the web to source their desired product. Secondly interview results were also combined and discussed with the supervising manager and results were also included that were obtained by probing deeper.

4. EMPIRICAL RESULTS

The results are divided into four major areas:

1. Introduction and demographics
2. Investment decisions
3. Information sourcing & management:
4. Suppliers, newsletters & configurator

4.1. Introduction and demographics

The case company provides its services to different countries thus to fig: 4.1.1 provides the survey demographic data showing that over 50% participants are from Scandinavian countries and out of this 50% Scandinavian respondents, 63% are from Finland. Although the number of total participants is limited but the respondents are from different parts of the World resulting in a more diverse response. This diversity is achieved because survey was published in different languages i.e. Finnish, German, Russian and English. The responses in this survey are divided into four categories based on languages i.e. English, Finnish, Russian and German.

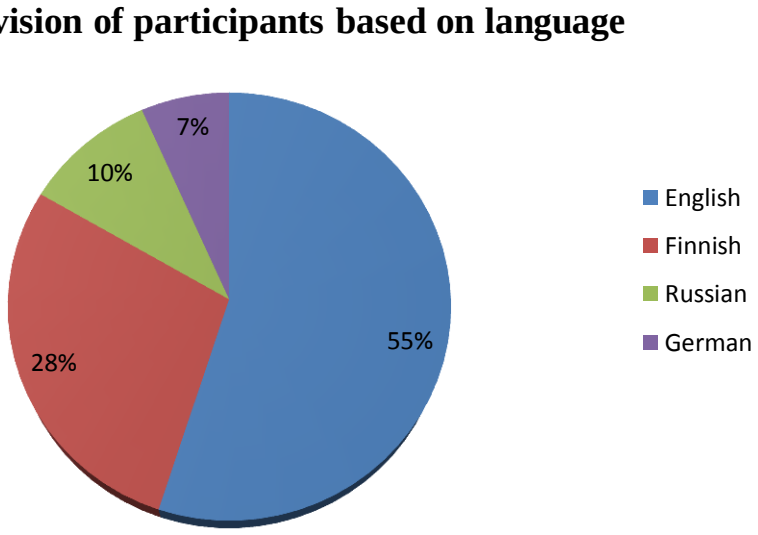

Figure 4.1.1. *CPQ survey participant demographics based on language*

English respondents are from many countries including Scandinavian countries i.e. Denmark, Norway and Sweden, then USA, UK, Russia, Germany, Qatar, India, Singapore, Netherlands,

Turkey, Malaysia, Lithuania, Azerbaijan and Australia. As shown in fig: 4.1.2 giving clear idea of whereabouts of English Respondents.

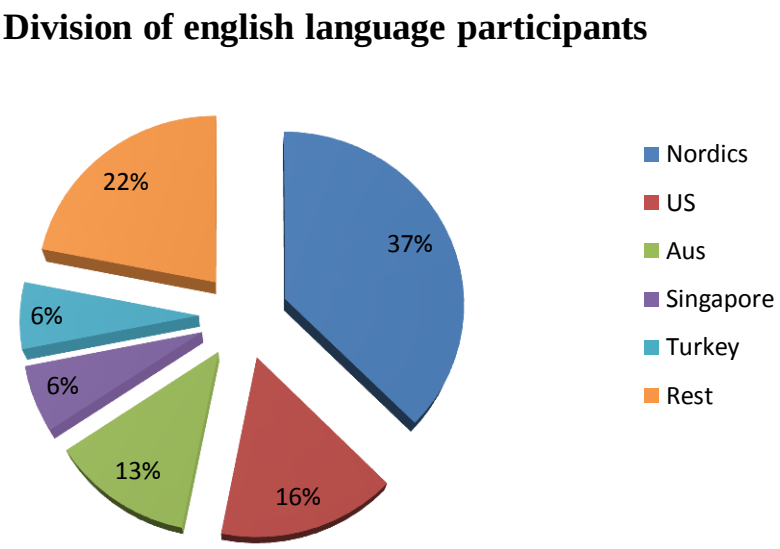

Figure 4.1.2. *CPQ survey English participant demographics based on region*

The survey was focused on the niche market of construction industry i.e., related to construction industry and machine rental companies; it was made sure that survey reached the right audience. As shown in fig: 4.1.3 major share of respondents were from machine rental companies which was optimistic to see as we were able to count on them.

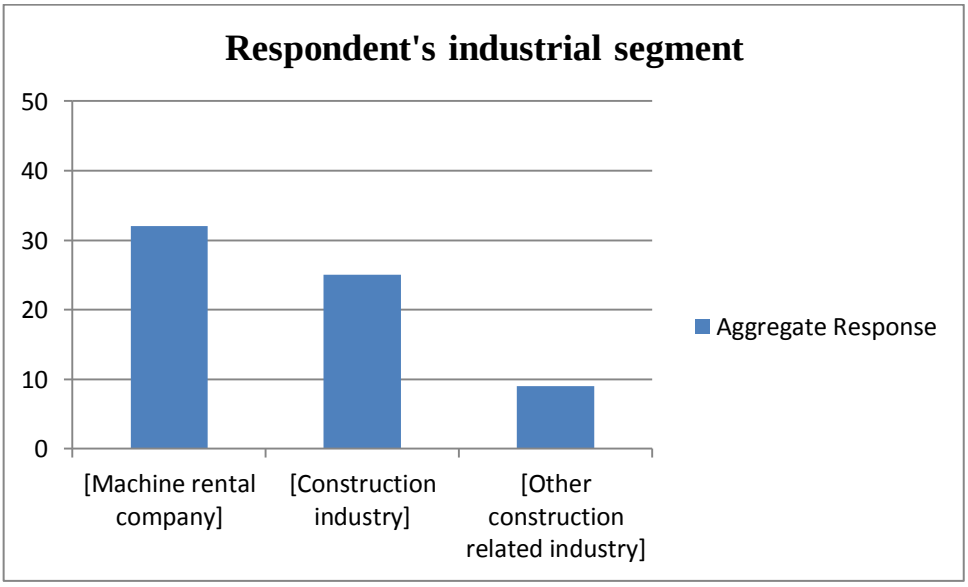

Figure 4.1.3. *Industrial segment of survey participants*

The participants were further categorized into the years they were connected to construction industry. This was necessary to get an idea how relevant and important their response would

be to the survey. As shown in fig 4.1.4, it was found that most of the participants were linked with construction industry for over 10 years.

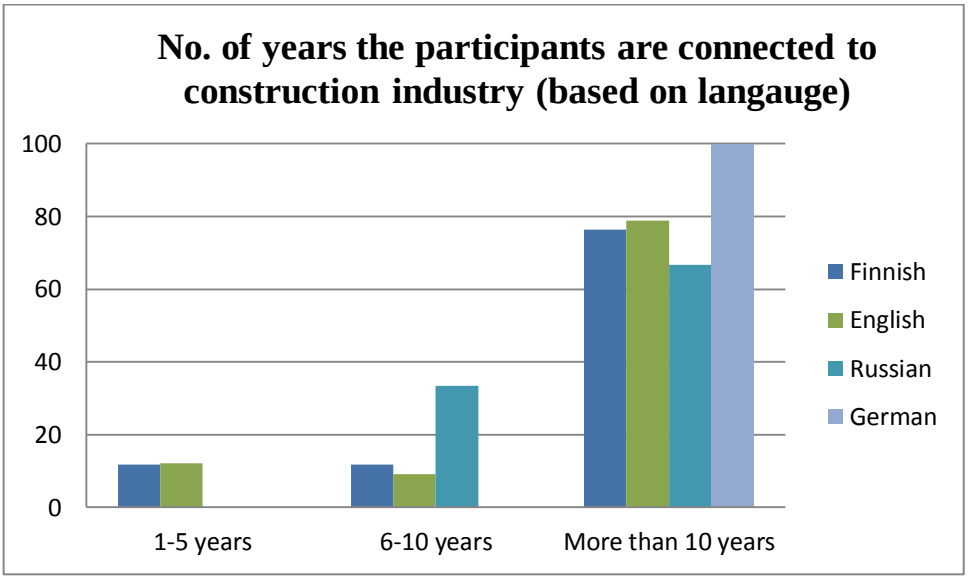

Figure 4.1.4. *Number of years the participants have been linked with construction industry*

4.2. Investment decisions

4.2.1. Role of respondent in machine investment process

The response on the survey suggested gave mixed results for respondent's role in terms of machine investment in their companies. As shown in fig: 4.2.1 Most of the participants being in this industry for long time have more roles to play in machine investments in terms of finding potential markets, suppliers and products. An interesting trend here is for Russian speaking markets where role of technical evaluations is of least importance. Finnish employees though have more diverse role in machine investment process which shows a factor of work diversity and flexibility in Finland.

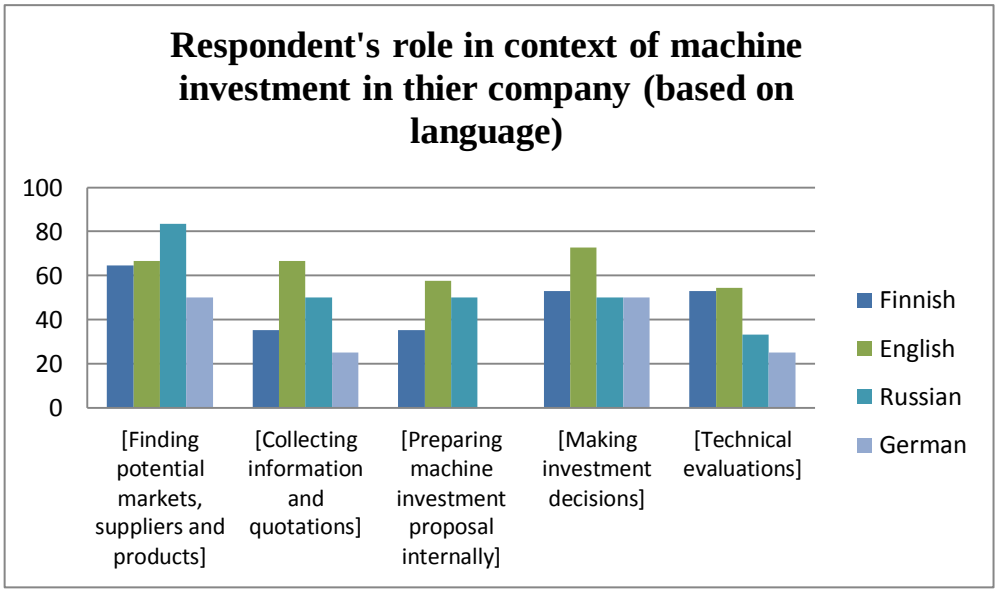

Figure 4.2.1. *Role of respondents in machine investment process*

4.2.2. Machine investment procurement process

The results of the survey show that most of the companies have a complex preparation process towards any machine procurement. As shown in fig: 4.2.2.1 this corresponds to concrete planning and budgeting strongly considering analysis of customer requirements. Overall, when we see the aggregate response to machine investment procurement process, most of the participants have selected planned process but this number is only slightly dominant than improvised investments.

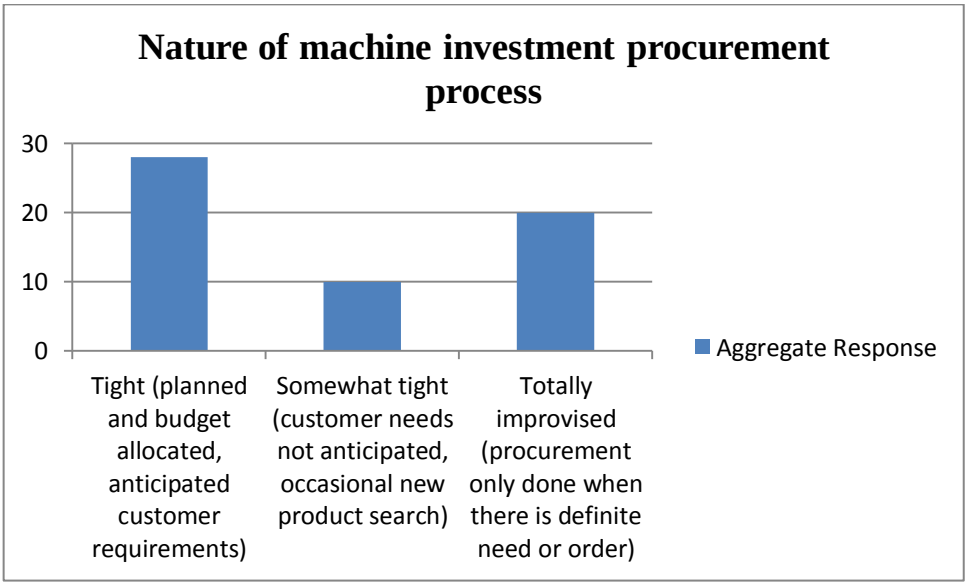

Figure 4.2.2.1. *Nature of machine investment procurement process*

An interesting result from the survey shows (fig: 4.2.2.2) that close to 50% of the Finns describe their machine investment process as properly planned looking at the probability customer requirements in the future, budgeting, company goals and targets, etc. The investment is made with respect to specific goals and objectives. In Russia however, the results state that preparation for machine investment is based on customer requirement and order. Until customers have not placed or confirmed any order, investment is not being made as 83% of their machine investment process is totally improvised (procurement is made only when there is a need). This factor of foreseeing and anticipating future requirements of customers did not seem to be a norm in their business approach.

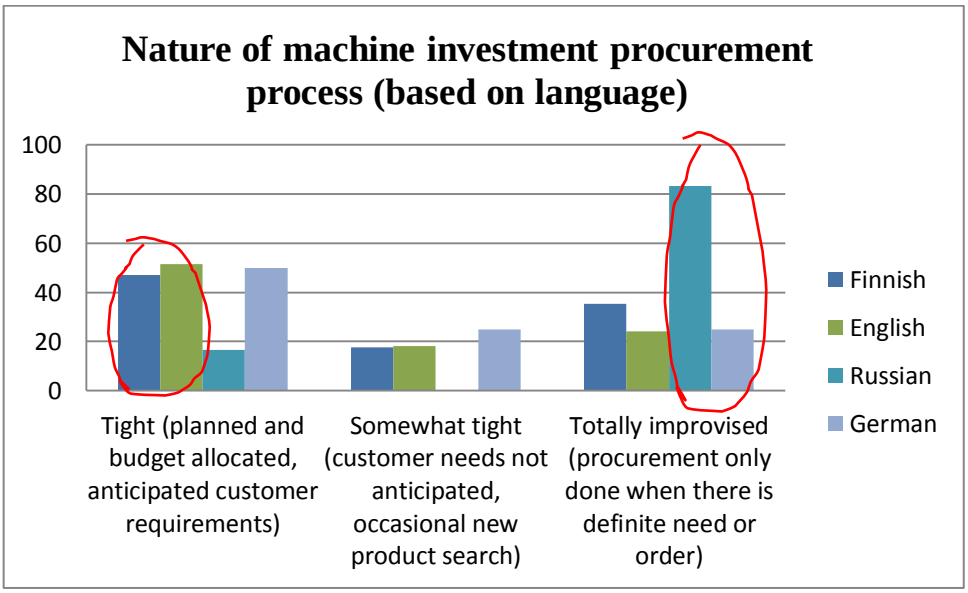

Figure 4.2.2.2. *Nature of machine investment process division based on language*

When we draw the comparison between the machine investment process between machine rental companies and construction companies, the aspect is different. As shown in fig: 4.2.2.3, it is clear that nature of machine investment procurement process for machine rental companies is more planned, budget based and as per project forecasting. With construction companies though, they prefer rather improvised procurement i.e. only purchase when there is a need.

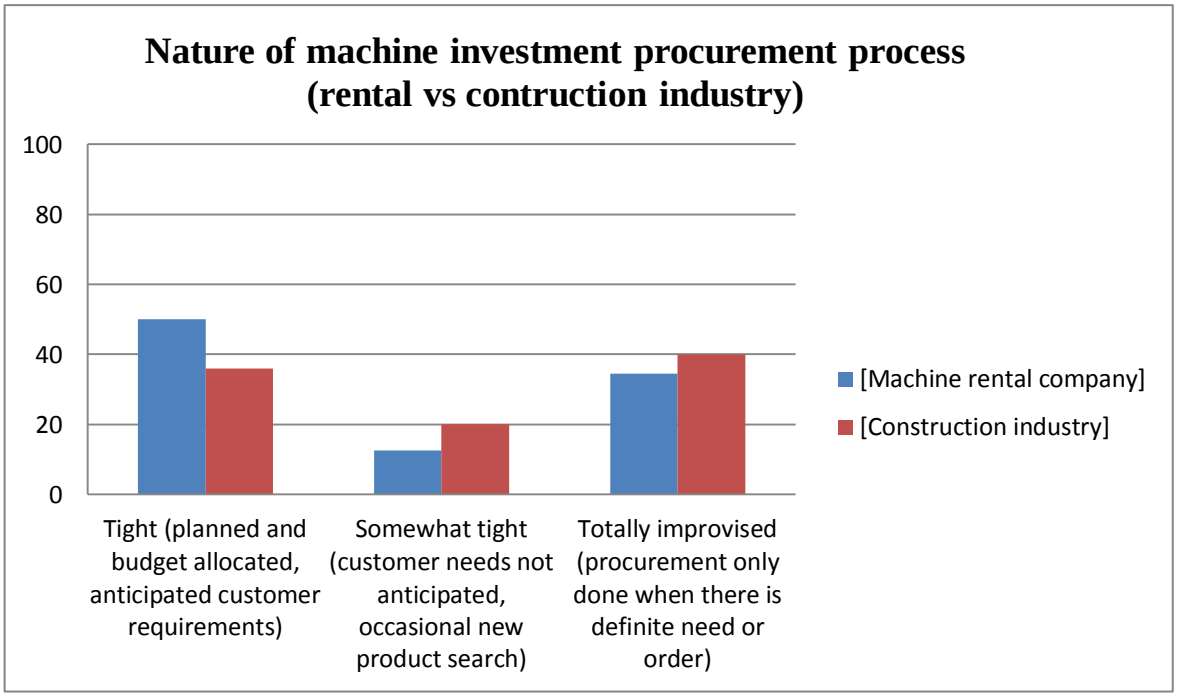

Figure 4.2.2.3. *Comparison of machine investment process between rental and construction industry*

It was evident from the survey response that the many criterions are considered importance by companies in machine investment and it is difficult to categorize a single factor. End user requirement and expected potential of customer orders are equally important whereas price including servicing costs, product quality and spare part availability seem to have a bit more significance. Thus, in this manner it is difficult to point out only one factor. This also supports the fact that the machine investment is a complex process depending on many factors which could also vary for every company.

4.3. Information search & management

4.3.1. Collection of information regarding new machines

They survey shows (fig: 4.3.1.1) mixed response on information search regarding new machines. Some companies are continuously searching whereas many of them are only engaging in search activities when there is need. For example, Finnish companies are always in search of new equipment for investment. Similar trend has been found in English speaking companies mostly based in Middle East, Scandinavian countries and US.

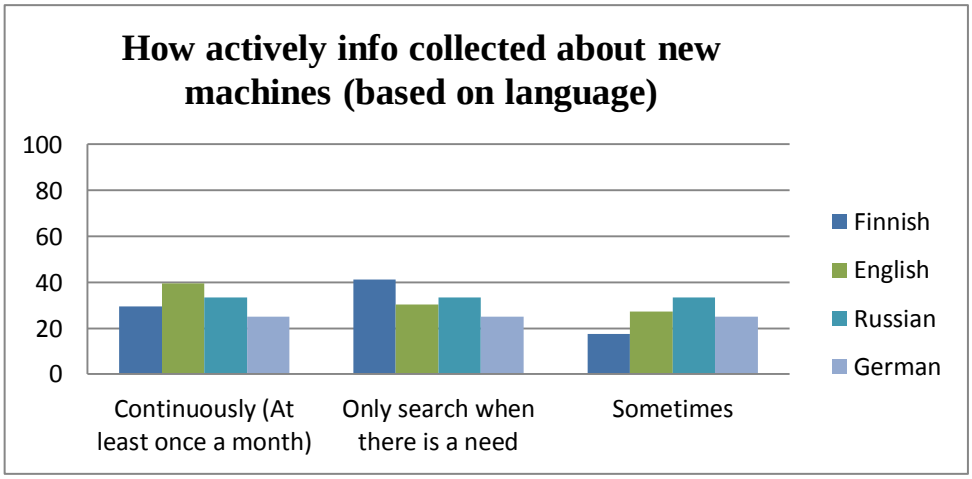

Figure 4.3.1.1. *Response on how actively the information for new machines is collected divided into language*

When the aggregate response is considered (fig: 4.3.1.2), it has been noticed that the ratio of companies searching new information about machines is almost similar to the companies searching the information only when in terms of a purchase. Again, it is very difficult to get clear conclusion about how often the companies are searching for information about new machines. E.g. how many times in a week or a month is unknown yet which is also difficult to determine.

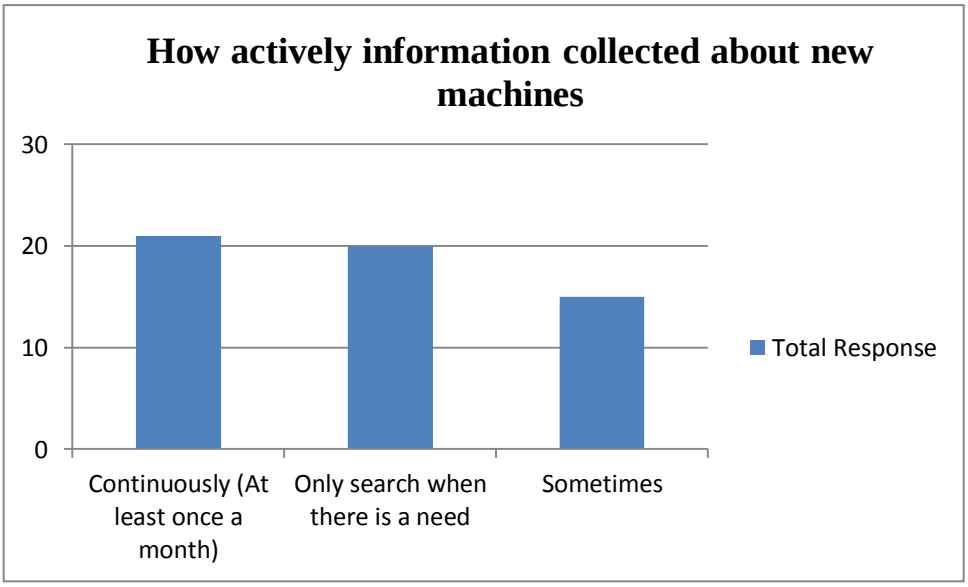

Figure 4.3.1.2. *Aggregate response on how actively the information is collected for new machines*

4.3.2. Ways to collect information regarding new machines

In terms of collection of information regarding new machines, supplier official webpage and search engine stand out from other factors. Interestingly, supplier webpages overall has more significance than use of search engines showing the high importance of official information

that any manufacturer publishes on internet. A fact that suggests that construction business still holds on to tradition working ways is high importance of communication with pears and colleagues as being information source for machine investments.

An important fact to notice (fig: 4.3.2.1) here is that for German construction companies, communication with suppliers remains most important information source. In general, information sources like email newsletters, advertisements, procurement portal are less important in construction industry. Social media possesses least importance among all markets in terms of machine investments.

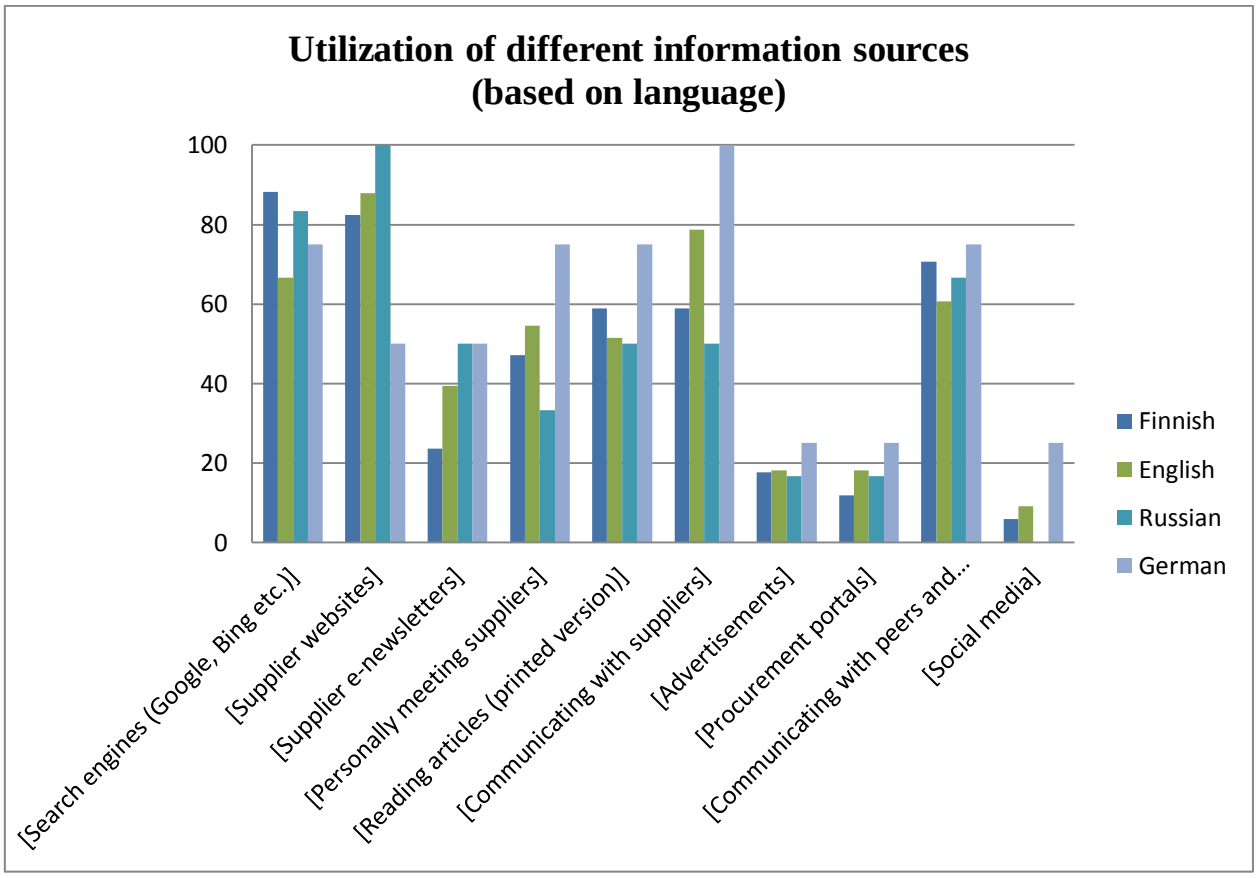

Figure 4.3.2.1. *Different information sources used by respondents for collecting new machine information (divided based on language)*

In fig: 4.3.2.2, the aggregate response shows more or less the similar picture on utilization of different information sources but here we can clearly see categorize the preferences in three ways, i.e.

1. Most Important: Search engines, supplier websites, communication with suppliers and communication with peers.
2. Somewhat important: Supplier e-newsletters, printed media and face-to-face meetings with suppliers.
3. Least Important: Advertisements, procurement portals and social media.

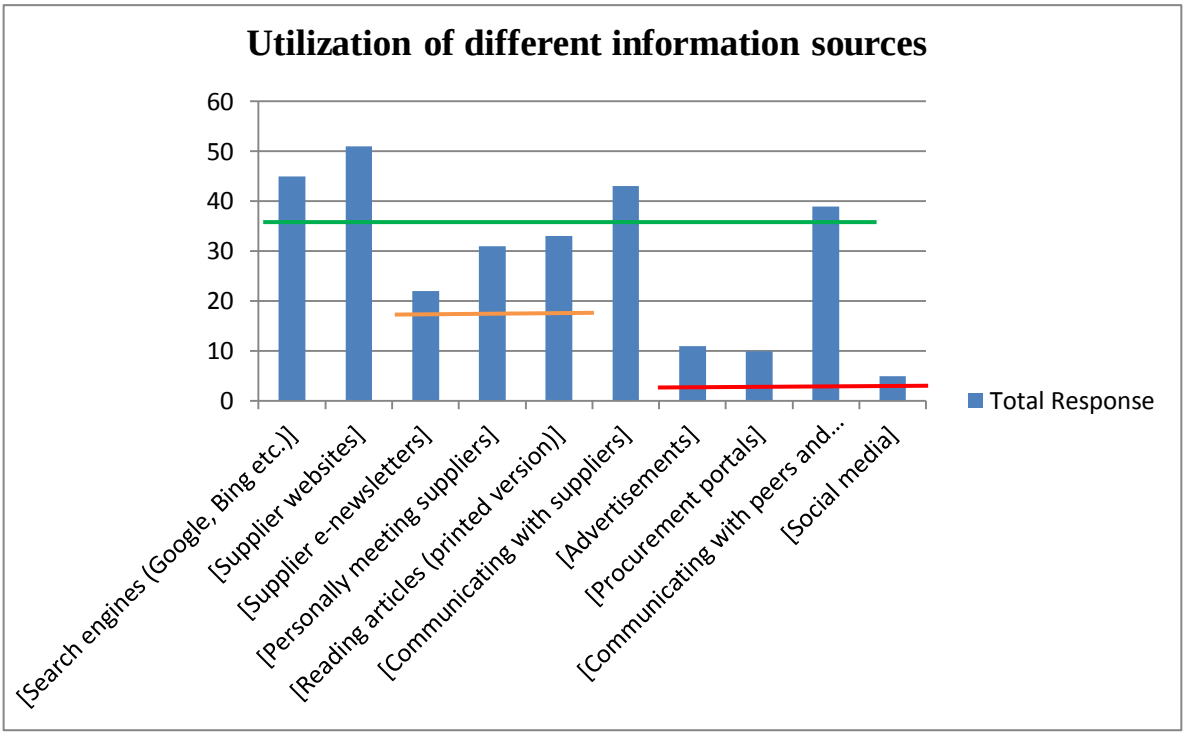

Figure 4.3.2.2. *Aggregate response on information collection of new machines using different information sources*

The results suggest (fig: 4.3.2.3) that generally, most of the companies keep all the collected information regarding machine investments in PC's. The most important factor that needs to be addressed here is that people are keeping the information to themselves. It can be seen that information is stored on PC's but less emphasis is on this information being shared with everyone inside the companies. This somehow directs to the fact is all information regarding machine investments is not efficiently managed or need of stronger communication channels inside the organizations.

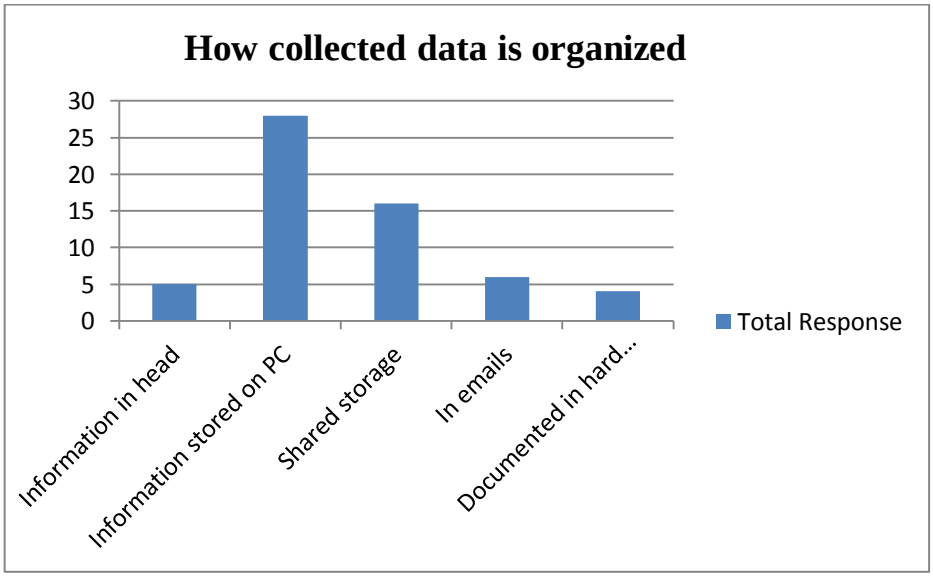

Figure 4.3.2.3. *How the respondents organize the collected data about new machines*

4.3.3. Likelihood of searching new information from internet

It has been noted that from the results (fig: 4.3.3.1) that use of internet resources is highly likely for collection of NEW information. Although, generally the construction companies are more tilted to traditional working methods and is resistant towards changes, but it is encouraging to see that most of the markets have already adapted to using internet. Finnish market in this case, is most likely to search new information from web sources.

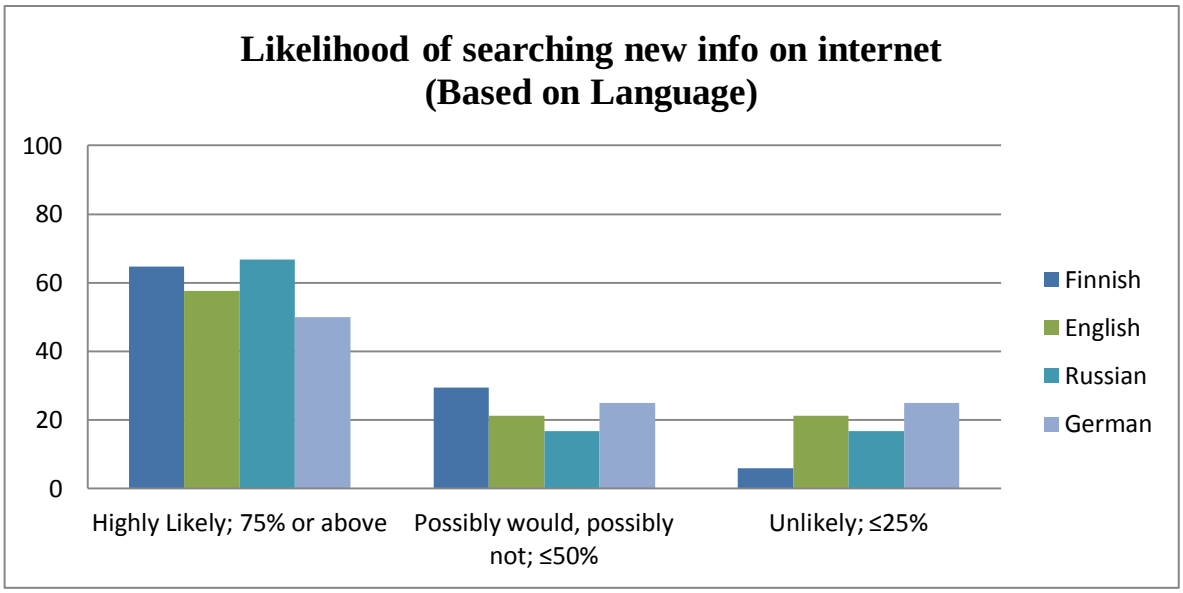

Figure 4.3.3.1. *Use of internet for new information collection by respondents*

4.4. Suppliers, newsletters & configurator

4.4.1. Social media for business

The results of the survey show (fig: 4.4.1.1) that in terms of social media, YouTube and LinkedIn are mostly preferred in construction industry whereas surprisingly Twitter gets the least rating along with Facebook. Use of other mediums like Blogs, Wikipedia is considered less important. In general though, social media is not considered significant for business purposes in construction industry, it might help but not a vital factor. This is evident from the fact that no participant category exceeds 60% for use of social media. It is interesting to notice that English speaking respondents are more active in extracting information from social media specially the use of LinkedIn and YouTube. One probable explanation could be the availability of most content on social media in English. Another interesting aspect is the importance of reading material which Germans prefer which includes Wikipedia and Blogs.

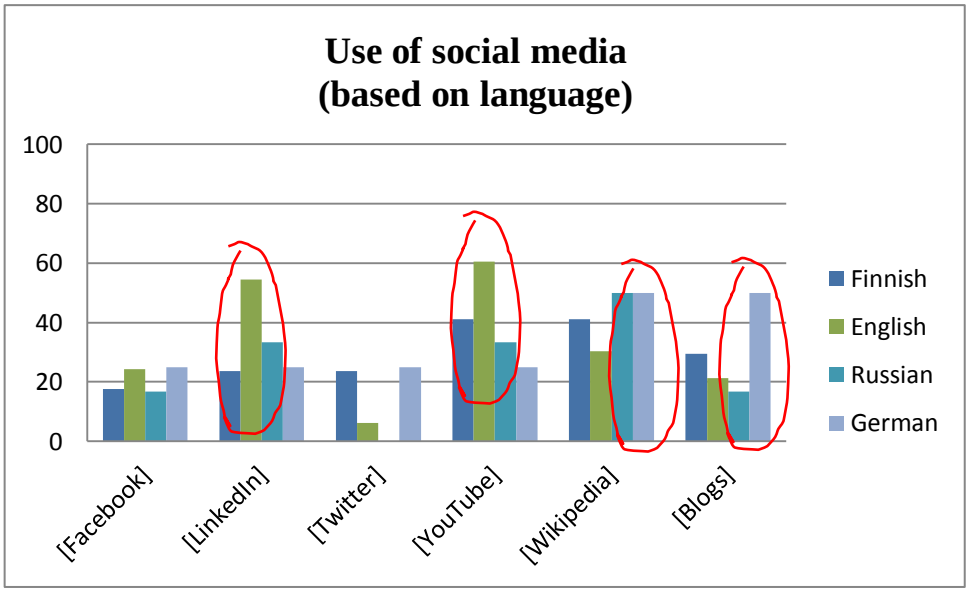

Figure 4.4.1.1. *Use of social media with response categorized based on language*

Machine rental companies use social media in different ways than construction companies which is evident when the total responses are divided in these two aspects. As shown in fig: 4.4.1.2, YouTube is the most useful social media channels in preparing machine investments, whereas for construction companies, LinkedIn remains on top having two times more significance than what it stands for rental companies. Twitter though remains least important for both type of industries.

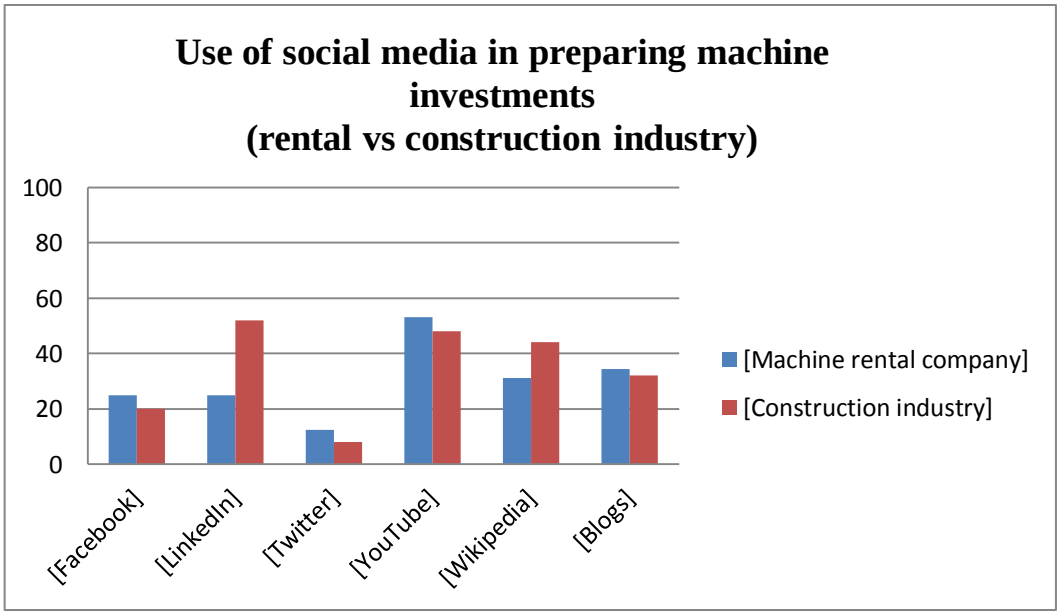

Figure 4.4.1.2. *Comparison of use of social media in preparation of machine investments between machine rental and construction industry*

Companies use social media in different ways but when it is narrowed down to construction companies, the survey results show (fig: 4.4.1.3) that it is still hard to distinguish their

activity. It can be concluded that companies mostly like to share information about upcoming products, new projects and latest achievements through their official social media channels.

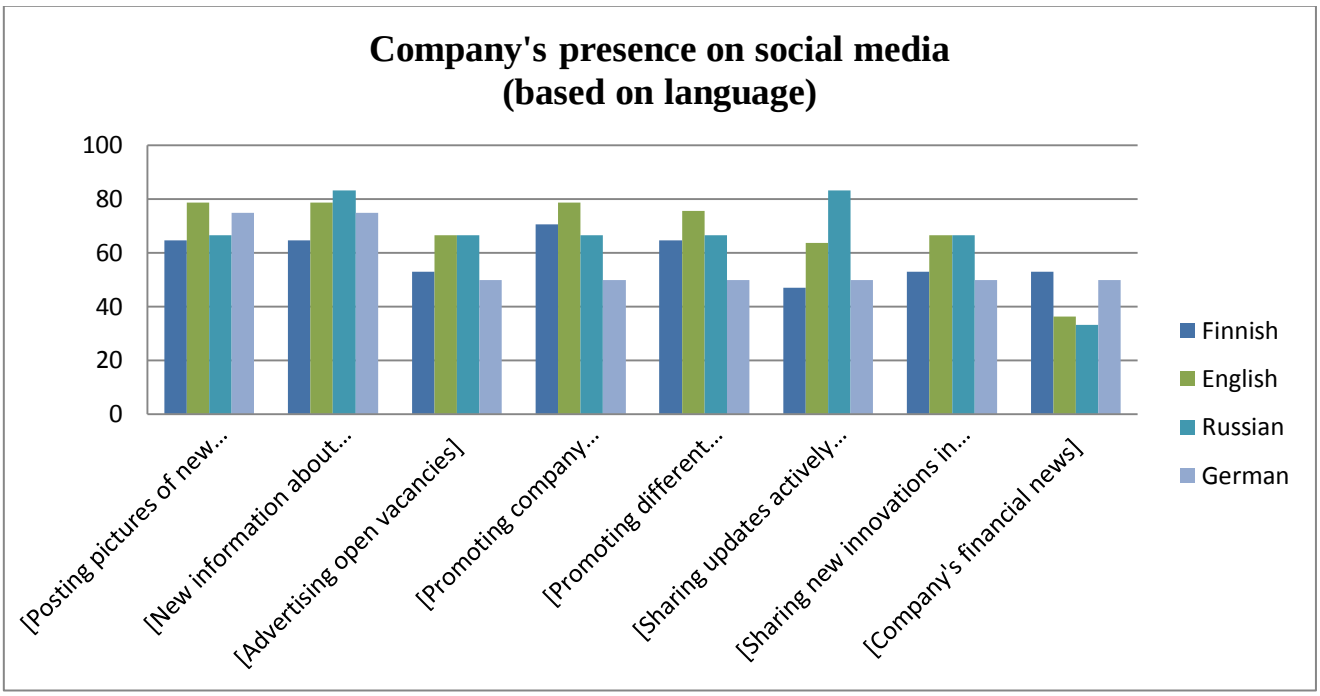

Figure 4.4.1.3. *Company presence on social media (response divided based on language)*

The aggregate result (fig: 4.4.1.4) shows better understanding of how companies are active on social media. Their activity could be divided in 3 categories,

1. Most important: includes posting pictures, new information about new products, projects or events, promotion of company achievements and different campaigns.
2. Somewhat Important: includes advertising open vacancies, sharing updates new innovations and industrial news.
3. Less important: includes company's financial news shared by them on social media channels.

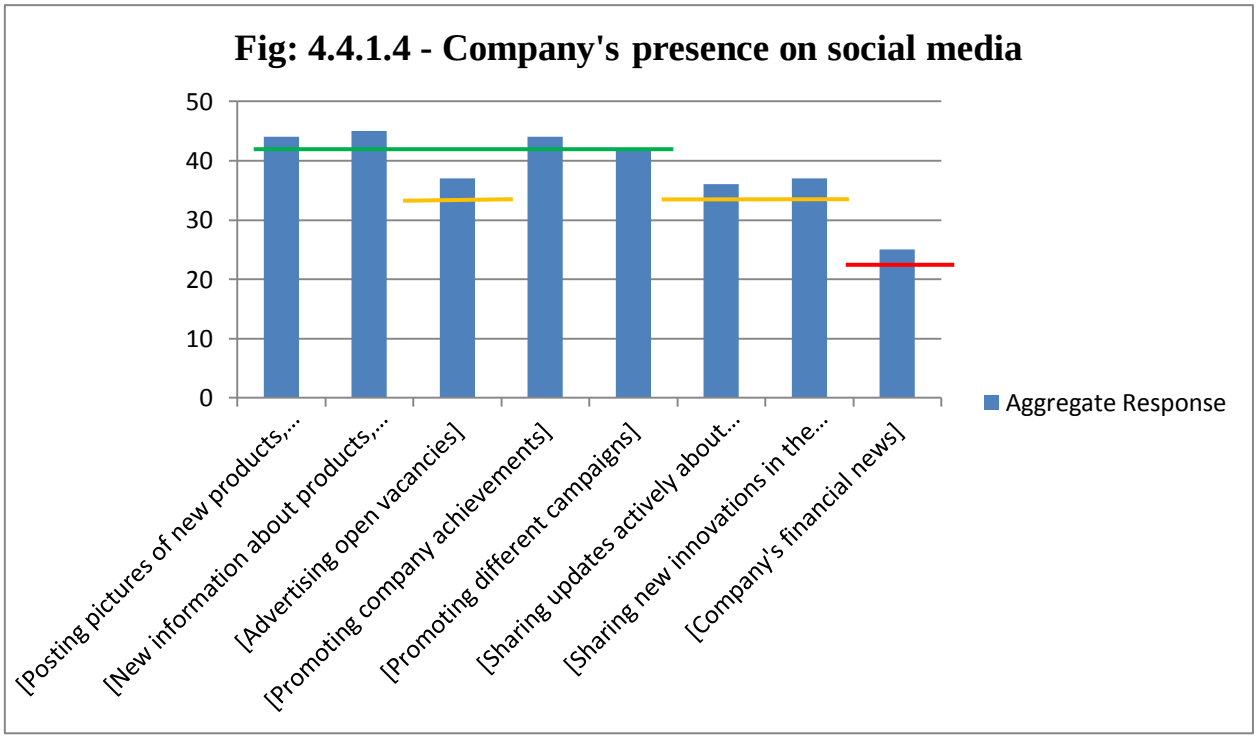

Figure 4.4.1.4. *Aggregate response on company's presence on use of social media*

4.4.2. Role of social media in investment decisions

In terms of investment decisions though, social media helps the companies to get to know about new products and innovations, understand the market competence of suppliers and customers, etc. It can be seen (fig: 4.4.2.1) that in Russian and German speaking markets, role of social media in investment decisions is important. Companies seem to be using social media in order to get to know the supplier information, their market presence, and their competence and to get information about new products or innovations by manufacturers.

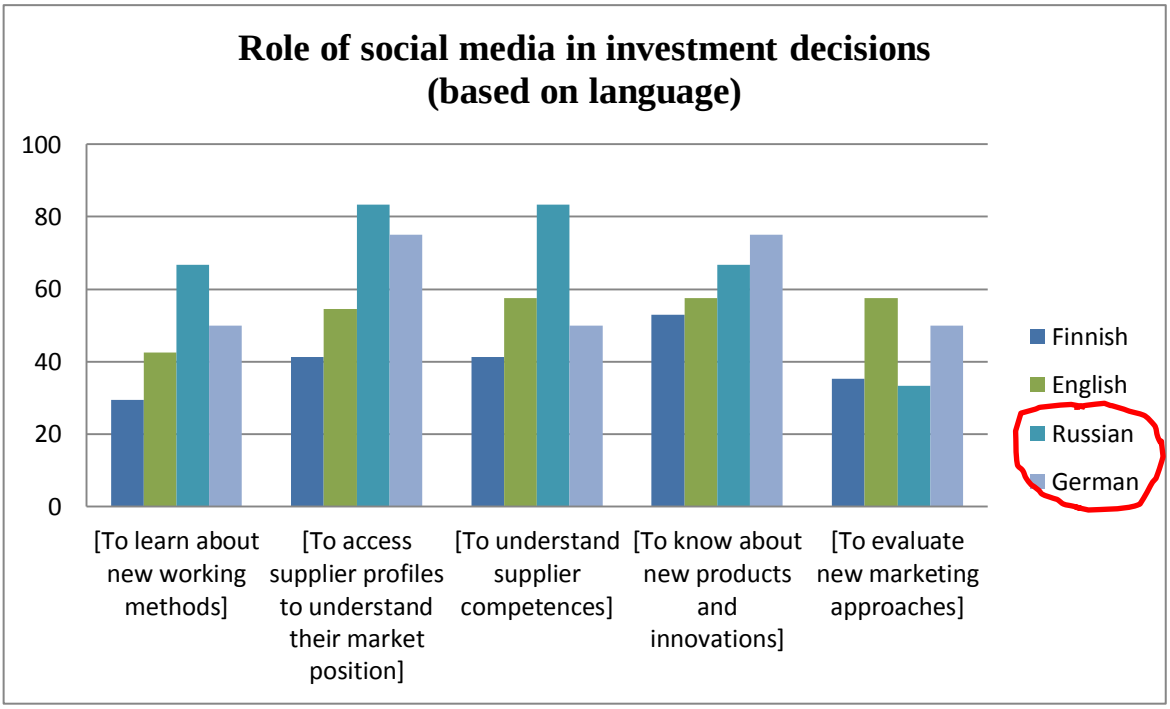

Figure 4.4.2.1. *Role of social media in investment decisions with response categorized based on language*

When dividing the response in terms of machine rental and construction companies, the role of social media in investments is somewhat similar (fig: 4.4.2.2). In both the industries, information about new products and innovations remains the important role following with supplier competences, market positioning and new marketing approaches. There is no aspect which stands out clearly when role of social media in concerned.

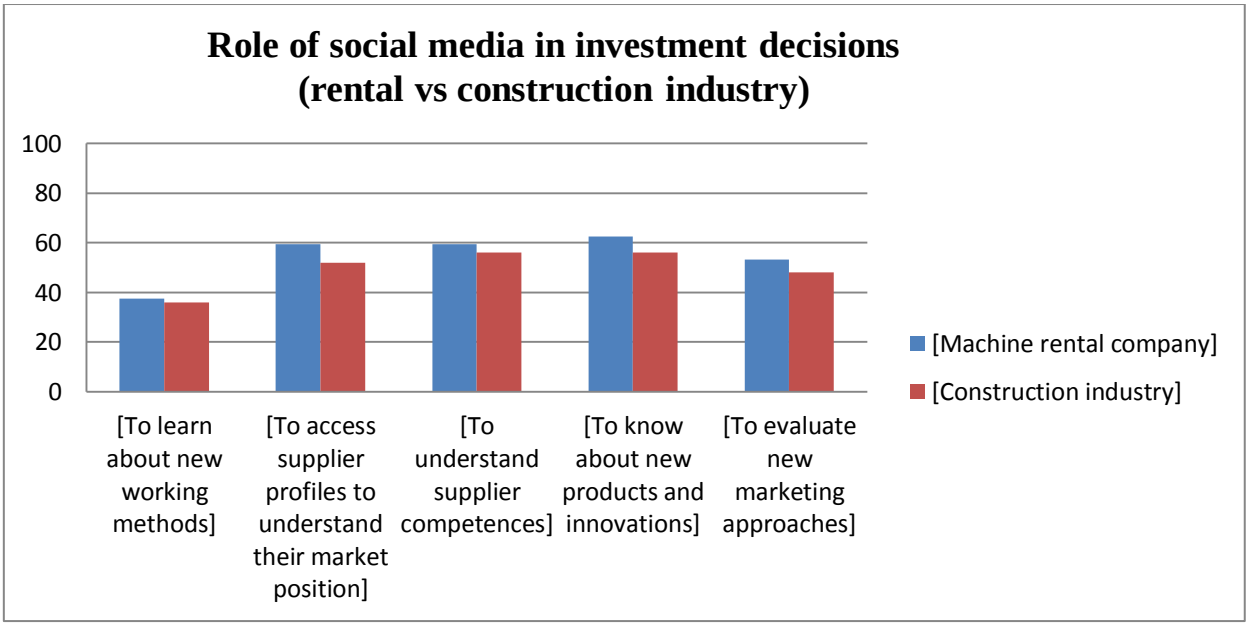

Figure 4.4.2.2. *Role of social media with response compared between rental and construction industry*

4.4.3. Email newsletters

Newsletter is a targeted information source that companies are using for marketing purposes. It was found out from survey results (fig: 4.4.3.1) that on weekly basis companies are receiving 5-10 email newsletters on average. 50% of German companies are receiving less than 5 per week. When this is compared to Finnish markets, over 40% companies are receiving between 5 and 10 per week.

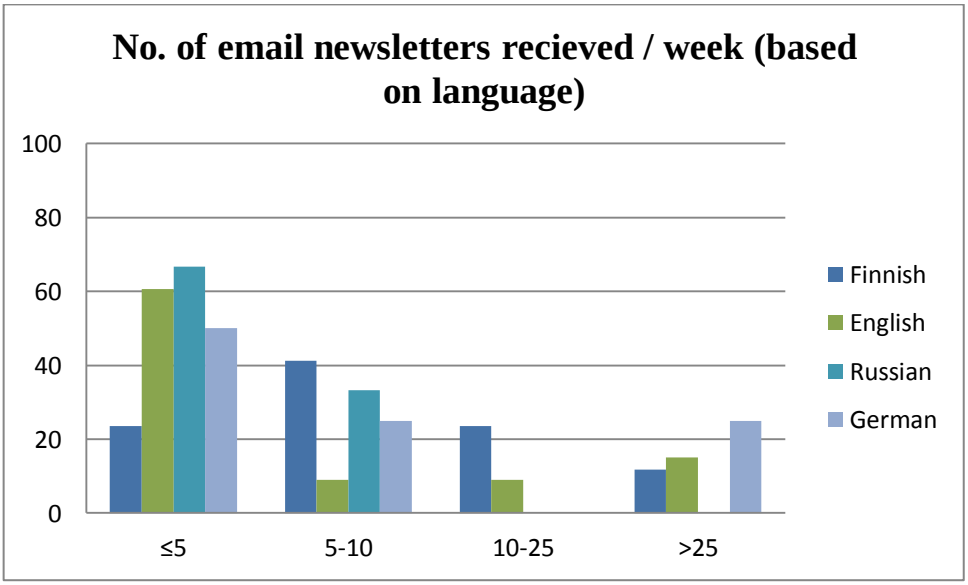

Figure 4.4.3.1. *Number of email newsletters received per week with response divided based on language*

The next step was to identify how the companies are treating this information source. Survey showed (fig: 4.4.3.2) that 50% of Russian companies are always reading the newsletters. Similarly 50% of German companies are often reading them as well however there is a small proportion of Finnish companies (just over 10%) not reading them at all.

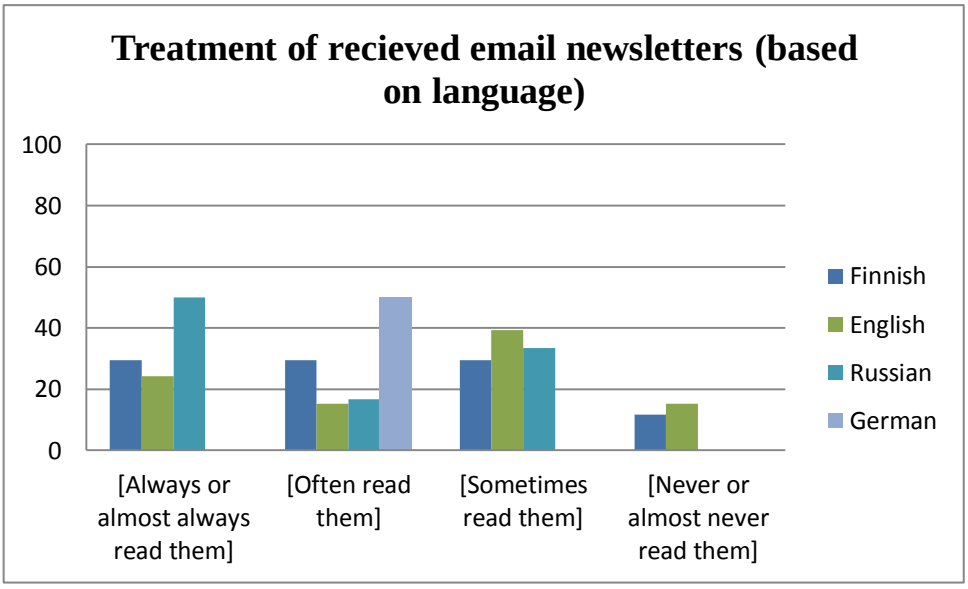

Figure 4.4.3.2. *How email newsletters are treated once received (based on language)*

When the stats for machine rental companies and construction companies' response were compared, it was showing (fig: 4.4.3.3) that the trend of reading the email newsletters was very low among construction companies. Surprisingly, this ratio was opposite in machine rental companies as their response was positive towards reading the e-newsletters.

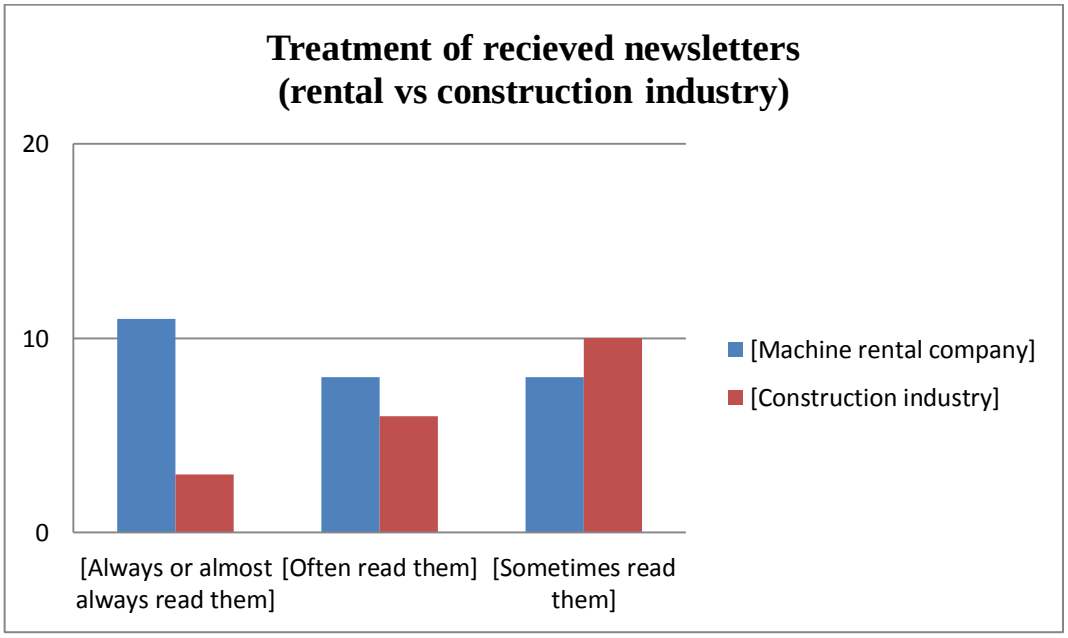

Figure 4.4.3.3. *How email newsletters are treated once received, response compared between rental and construction industry*

4.4.4. Web based configurator

The next phase was to understand if they (respondents) are aware of web based configurator. First, a small text was described to them along with the link that could direct them to Volkswagen configurator. This was provided in order to get the respondents a better image of utility of such model if implied for construction hoists and platforms.

Surprisingly as shown in fig: 4.4.4.1, most of the respondents from different markets were already familiar with such services and more importantly, they had used such services. When different markets were compared, it was found that Finnish, Russian, some US and other Scandinavian based companies had more or less similar amount experience of configurator. Around 25% companies though in Germany had been using such services.

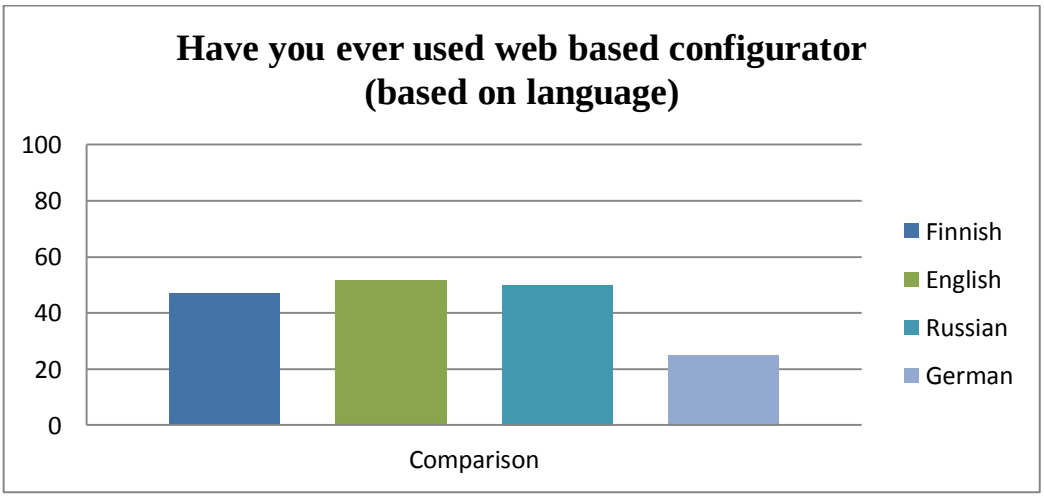

Figure 4.4.4.1. *Use of web based configurator by respondents*

In case of comparison between machine rental and construction companies (fig: 4.4.4.2), machine rental companies were more familiar with such web based services and the difference was almost of 20% between the both. It does not mean that they were already using the services or not but this difference gave an idea of the awareness.

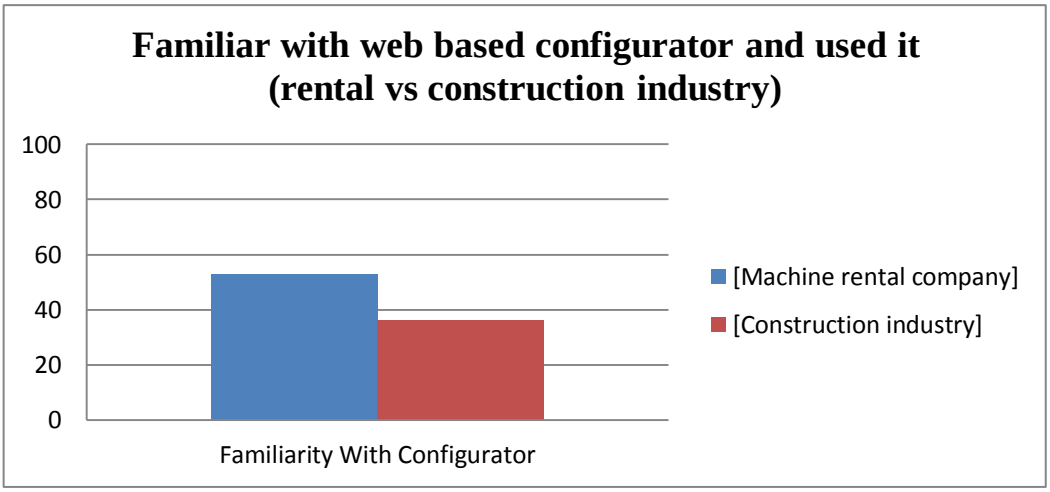

Figure 4.4.4.2. *Familiarity with web based configurator, compared between rental and construction industry*

The respondents were asked regarding their opinion on value of web based configurator services based on their experience afterwards. Results of survey show (fig: 4.4.4.3) that 50% of German companies found the services extremely helpful whereas only 5-10% of Finnish companies were of high praise of such services. Companies from Norway, Sweden, Denmark, US and Australia also found configurator services helpful.

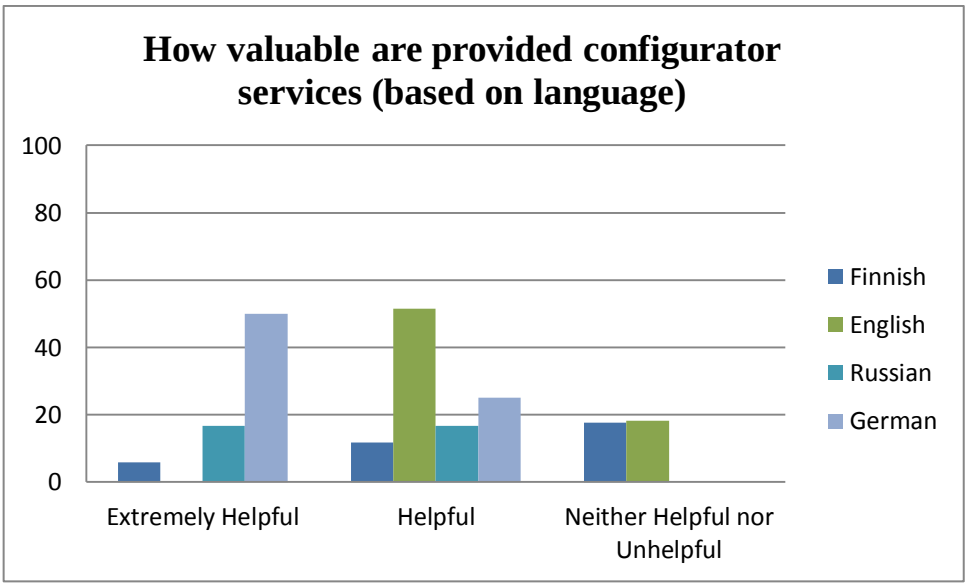

Figure 4.4.4.3. *Value of web based configurator perceived among respondents*

The opinion on value of configurator when compared between machine rental and construction companies gave an interesting chart (fig: 4.4.4.4). Although the trend is similar and tending towards 'helpful' for rental companies, the opinion of construction companies seems different. The number of responses in favor of configurator is almost as much as against such services. This could lead to a fact that new servicing systems and adaptability to new methods is not as encouraged in construction industry than rental ones.

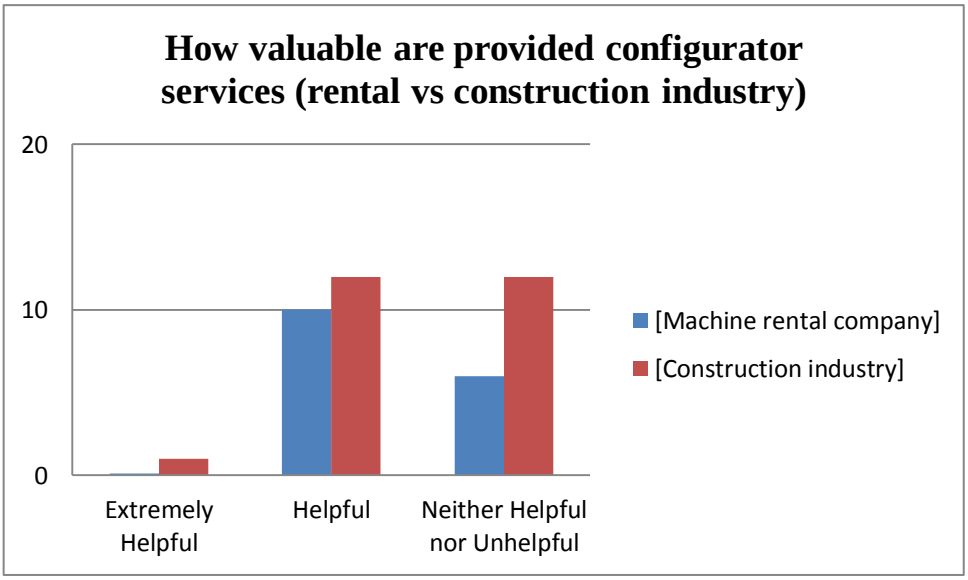

Figure 4.4.4.4. *Use of web based configurator compared between rental and construction industry*

In order to understand the context in which the configurator would be useful to the customers, there was a mixed response (fig: 4.4.4.5) supporting all the features that configurator offers. These features include detailed pricing, efficient quotation process, layout drawings installation details and configurations. Germans, though found the feature of having precise and detailed price breakdowns as most valued feature of configurators.

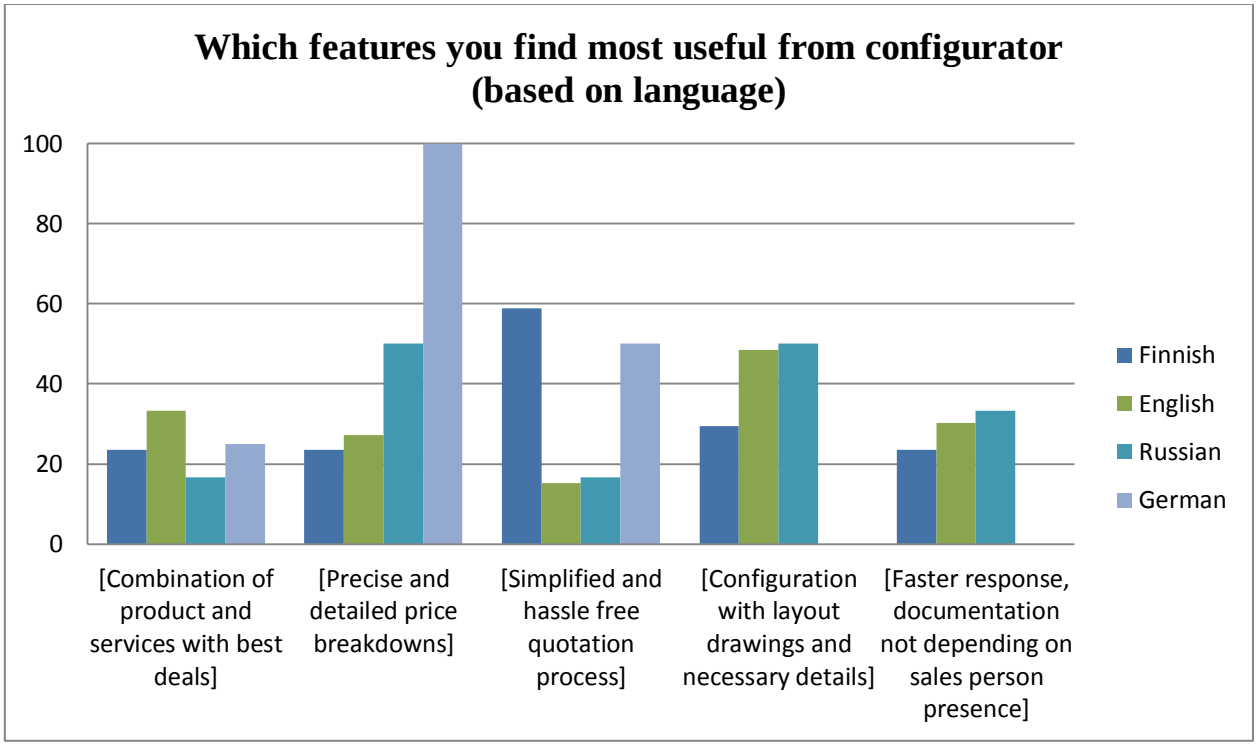

Figure 4.4.4.5. *Most useful features of web based configurator among different respondents (based on language)*

The picture is quite different though when we look at the aggregate response (fig: 4.4.4.6). Overall, the highest number of respondents thought that if they get machine configurations with lay out drawings and details, the configurator would prove most valuable.

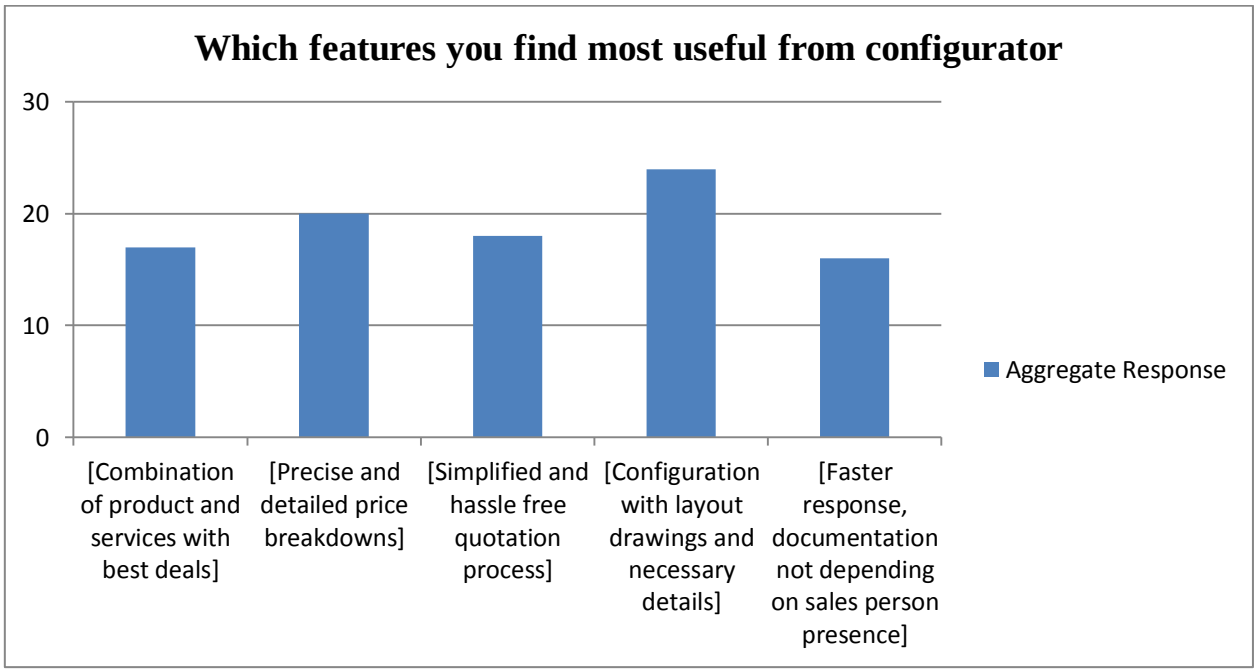

Figure 4.4.4.6. *Aggregate response on most useful features of web based configurator*

It was asked from respondents in the survey regarding their expectations from configurator offered by Scanclimber. Though some of them were not really sure what to expect, many of them had useful responses like it could be tailored to their needs, user-friendly interface, helping in faster installation, prompt spare parts availability, helping them in project planning, availability on mobile, helping installation drawings, etc. In a nutshell, the response of the survey suggested that configurator services could prove to be highly beneficial for the customers if provided by Scanclimber.

4.5. Interview results

The preparation for investment decisions for most of the respondents was based on future needs. Almost all of them had the same opinion that the expected needs of the future are anticipated based on the upcoming projects. They plan 6 months to 1 year in advance and then consider investing in new machines. Regarding a triggering factor about consider procuring a new machine, for 50% of the companies it was the price of the machines which was deciding factor (once it meets requirements) and for other 50% the probability of potential order was the triggering point.

There was a common response to information sources regarding new machines for majority of the respondents since it has been a long time they entered the market, they are familiar with all the machines already that they don’t see the need of search anymore. It was the other way

round when they started their business though. Methods of information collection were mostly by brochures, calling peers and asking the suppliers directly by giving them requirements. Only 1% of respondents were engaged in continuous search of new machines. It was also noticed from responses that most of the companies even though have central database but not everyone from the company is used to updating and sharing information there. Mostly, the person related to procurement keeps the information to him/herself in the form of emails. It was clear that there was lack of new information sharing within the companies.

In general, majority of the companies in construction industry are not considering web as primary tool for search of new information. Firstly, they don't find the need to search new information and even if they have to, they are keeping to the traditional methods of communication with peers and colleagues. Social media though has not been considered important by any respondent regarding machine investments or search about new machines in construction industry. Only 25% were regularly searching information about new machines on internet from time to time but there was none in favor of using social media for this purpose.

The respondents gave a mixed reaction to importance of newsletters as 50% of them were in favor of receiving and reading the newsletters and the rest did not want to receive them. It was clearly noticed that the companies working with less than 10 suppliers were in favor of receiving the e-newsletters whereas the more the number of suppliers the companies were working with, the more they were losing interest in reading the newsletters. Regarding comparison between trade journals and e-newsletters, it was again vice versa as 50% favored trade journals but the rest didn't and here it was noticed that bigger companies preferred trade journals than e-newsletters.

Although every respondent was confused at first when 'web based configurator service' was mentioned but they started to understand the concept once a simple example of Volkswagen configurator (build your own car) was mentioned to them. In general, only 25% of the respondents were using web based services specifically for spare parts so the concept of mast construction hoists and MCWP's buying through configurators was very new to them. 50% responded to these services well but under the condition that all the details are available along with lay outs drawings and visuals. The remaining was critical of such services as they preferred traditional methods of sending the required specifications to sales person and get the quotations accordingly. Again the response would certainly have been different if they have been using any kind of such services already.

The general response regarding the Scanclimber website was very positive. All of them had positive feedback on project references being updated on regular basis along with contact details available for every office. It was even more helpful when some of the respondents suggested some areas to improve like mentioning training material regarding Scanclimber machines on the website, allowing dealers to upload the project pictures and details, active presence on social media so the dealers can post pictures using Scanclimber machines.

5. DISCUSSION

This study focused on the preparation of machine investment in rental construction industry. It provided a specific picture of how a major procurement regarding machines is planned and was determined which factors play significant role during such procedures. For this purpose, the results were not just analyzed in total responses but also these responses were further segmented to language of the participants to understand how it works in different markets. In addition, responses were also divided between rental machine companies and construction companies to see the differences in terms of type of businesses.

The process regarding machine investment for companies could not be clearly determined. Although for almost 50% of the companies it is planned, budgeted and anticipated according to customer needs but at the same time for 40%, it is not planned and procurement is done when there is definite order from customer. It was seen through the interview results that the process of purchasing starts 6 months to 1 year in advance for making an investment decision and he companies follow a set process for purchasing however, they do not follow the traditional procss as explained by Johnston & Lewin's (1996) or Berthon et al.'s (1998) presented in fig 2.1.3, but are more inclined towards the "muddling-through" model by Makkonen et al. (2012) in figure 2.1.4. The trigger of purchase process is the future need of machinery, which fulfills the characteristics of "muddling-through" model. The industry collectively has reactive approach and thus the purchase process is unknowingly guided by need based purchasing

Construction companies have more improvised i.e. based on order procurement whereas for rental companies, it is very systematic. Finnish companies tend to have planned procurement compared to Russian companies which are buying when there is order certainty.

E-commerce is an important management decision and its implementation is complex and long term (Claycomb et al., 2005; Beige & Abdi, 2015). The construction industry is following traditional methods of information sourcing and is relying on peer to peer information sourcing. As the interview results points that most of the work force in construction industry is working there for around a decade or more thus it is hard for the management to make them acquainted and at easy with the technological advancements. According to Beige & Abdi (2015) there are a total of seven different critical success factors from multiple different researches as provided in Table 2.2.3, from the table it can be seen that "culture" of the construction industry in Finland is playing its role in blocking the integration of digitalization and e-commerce.

The most significant sources of collecting information regarding new machines have been found as supplier websites (over 80%) and then globally used search engines (Google, Bing,

etc.). Communication with peers and suppliers are also considered almost important as the use of search engines (65-75%). The likes of social media, advertising and procurement portals resulted as least significant sources of information collection regarding new machines (below 20%).

Talonen (2013) explains the sources of information in table 2.3.1 for industrial buyers, from the result of the interviews and the questionnaire it may be said that the companies are using most of the resources mentioned by Talonen (2013) however, some of the resources have more impact while making purchase decisions such as word-of-mouth, personal experience, colleagues, top management and direct mail are the major resources used. It might be because the construction industry is still using traditional means of communication and information sourcing mostly.

It has been clear from the survey that the collected data regarding new machines is most always stored on personal computer in the companies. The distribution of this collected information among the important channels needs to be focused as almost half of such collected information makes it to the shared storage. The collected data organized in terms of paper documentation, keeping it in emails or having tacit knowledge remains least important.

It is clear that the use of internet for searching new information is high likely (75% or above). Thus, web sources remain primary choice for the search of information for the companies.

The use of social media channels in preparation of machine investments is an interesting aspect. The aggregate responds shows that YouTube is the most important source used by the companies. Following are LinkedIn, Wikipedia and Blogs. Facebook and Twitter remain least important in that aspect. When this aggregate response is dissected in terms of construction and rental companies, though rental companies have the same preferences as it was aggregate response but for construction companies, LinkedIn seems to be the most important source along with YT, Wiki and Blogs. When this response is further divided based on language, for English respondents LinkedIn and YT are most important whereas for Germans, Wiki and Blogs are important sources in preparation for machine investment.

The companies' presence on social media was analyzed. It was determined that most of the companies use social media to post information about new products and projects, promoting recent achievements and different campaigns (over 75%). This seems to be the most common use activity on social media. Some companies like to share their financial news but in general, this was least common activity (around 40%). The role of social media was studied in terms of investment decisions of companies. In B2B construction industry, it is difficult to define clear role of social media in investment decisions. Most common role from results seems to be information about new products and innovations and understanding of supplier competences (given that they are actively updating).

As also explained by Talonen (2013), the importance of email newsletters was also included in the survey to understand the number of e-newsletters that the companies in this segment are receiving and how do they treat them as an information source. Aggregate responses suggested mixed results as to whether they often are read or just ignored. The responses when

divided to construction and rental companies were rather clear to draw a conclusion. This showed that rental companies put more emphasis on the email newsletters and they're almost always reading them whereas to construction companies, the trend is opposite where they are reading them occasionally.

According to Mittal & Frayman (1989) defined configuration as the design activity that has a specialized feature of assembling the product with the pre-defined components available in the system. In the last part of the survey, the topic of web based configurator was raised. It was found that around 45% of the total respondents were only familiar with configurator services and majority of those shared their positive thoughts that its implementation in rental construction industry would prove to be helpful. It is difficult to clearly determine which features the respondents think could make configurator useful because many of them haven't such services yet. Mostly, the noted preference from such services include configuration with lay out drawing including necessary detail along with precise and detailed price breakdowns. As pointed out in interviews and reply to questionnaire, respondents had mixed feelings about the incorporation of product configurator, this might be because of traditional business methods and information sourcing as many of the respondents was not very interested in availing the e-commerce option. For the purpose of future research this can be a new horizon to explore that how construction industry might benefit or is lacking behind in use of updated technology.

6. CONCLUSIONS

6.1. Answer to research questions

The study reached its objective to explain and understand the concept of purchase behavior and how information is sourced while making b2b purchase decisions. The research questions were successfully communicated to the respondents and since it was a limited study we may say that the research questions are answered to some extent. The research was conducted to answer the following research questions:

- *What is purchase process of companies while purchasing investment goods?*
- *How the buyer companies source supplier information to make purchase decisions?*
- *How CPQ system is perceived and what is the value that this CPQ tool brings in a business to business purchase process?*

The results of the study show that the purchase process of only 50% of the construction companies are defined with allocated budget and rest of the companies are doing need based procurement. This trend is more defined in rental construction industry in Finland compared to Russia. As shown in fig 4.2.1, in most of the Finnish companies the purchaser has many other roles as well thus it can be said that the person who is involved with the purchasing process is linked to other divisions and when he makes the decisions he is fully aware of what is needed by the company. Based on this further in fig 4.2.2.1 it can be seen that as per the results of the survey that the Finnish companies do follow a process and budget allocated for the investment decisions. This process might not be consistent with the theory and is different for different companies but to approach the buyers the suppliers can follow the steps of the process.

Most of the information sourcing is done from the supplier websites using search engines. The research also points out companies that have defined processes are using more of electronic marketing tools to source their suppliers however almost 40% of the companies still use reference based supplier sourcing. Social media makes B2B dealings more interactive but the exact role of it is still hard to determine. The supplier company (Scanclimber) can ensure that the available data on the website is updated and presented in a user friendly manner as the results of the study show that major sourcing is done through personal contacts and with the suppliers with which the company has already works.

The focus of the study was result oriented to determine the perception and attitude of customers towards a CPQ system. CPQ is a new phenomenon in the e-marketing. Many

different companies of different industries are already using it like Volkswagen car configurator (Dellmann et. al, 2003) is one of the most fitting examples but is still a long shot in construction industry in Finland. Almost a decade before, social media was considered to be a mere means social interactions but now significant progression is seen in B2B deals involving social media, which is also backed by the study. As shown in fig 4.4.4.4, the construction industry is already aware of the idea of integrated solution but the response towards the helpfulness of the system is mixed almost equal percentage of responses were in favor and against of implementation of CPQ. Thus there is a room for research to get the idea that with the generational change that is about to happen due to the technological advancements, that there might be potential of CPQ and other integrated systems that cannot yet be determined.

Digitalization has evolved business activities and company processes are getting stronger but there is still a major number of companies who rely on business references to find potential suppliers. The element of trust and reliability of e-marketing is still a question mark for the companies while they are looking for new B2B relations.

This study will provide an insight for academia to research the use of integrated systems like CPQ and how other companies are using these solutions to gain competitive advantage and reduce the time spent in gathering initial information for purchase decisions. This would help the industry to make their supply chain more effective.

6.2. Limitations of the study

This study was conducted for the company to assess the purchase behaviors of its customer and how guided selling will be perceived and will be of benefit at e-market, thus it has some evident limitations. The study may be used as a stepping stone for further research in e-marketing of investment good but in particular this study may not be generalizable as it considers only one companies view point and has taken sample respondents from on that company i.e. Scanclimber. Thus this might create biasness in results (Saunders et al., 2009).

The questionnaire was not statistically tested for the reliability and validity of questions thus it may be said that some of the questions might not give the same impression to the respondent in which they were being asked. The questionnaire was focused on the objectives of only one industry thus it might not be that useful for other industries.

Interviews conducted had the same questions as in the questionnaire thus it does not fulfil the purpose of a triangulated research and less probing was involved in the interviews that might have limited the scope of interviews. The researcher was not experienced enough to gauge all the aspects involved in the interviews and questionnaire and major trends were focused more in the study.

6.3. Contributions

The study is significant in a sense that it focuses on the Finnish construction industry as a niche, it provides a different view of e-business in Finnish industry where the companies can find new markets by increasing the use technology and not increasing the cost of labor or increasing any working hours.

There are many studies on e-businesses and how electronic commerce can be used to increase the business worldwide (Hore and West, 2005). But there are not many studies focusing on specialized solutions for construction industry (Castro-Lacouture, Medaglia and Skibniewski, 2007). Thus the study may be used as a stepping stone for other researches to build their studies and use this research. The study also fills the research gap for the studies based on quantitative data from actual industry.

The concept of guided selling is very vast, the framework provided in this thesis is a small contribution to the phenomenon. There is still room to improve the definition and understanding of guided selling and how the phenomenon is understood and interpreted in the business world and linking it with academic field. There is ample evidence that future research on the particular topic is required as the companies worldwide are looking forward to customize their products according to buyer's needs and get the maximum output from the minimum resources and guided selling can prove to be a vital part of this evolution.

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.

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.

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

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.

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.

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

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.

Arthur, W.B., 1994. Inductive reasoning and bounded rationality. The American economic review, 84(2), pp.406-411.

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.

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

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

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.

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

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.

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

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

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

Borkar, S., Cohn, R., Cox, G., Gleason, S. and Gross, T., 1988, November. Warp: an integrated solution of high-speed parallel computing. InProceedings of the 1988 ACM/IEEE conference on Supercomputing (pp. 330-339). IEEE Computer Society Press.

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

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

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.

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. (To be published).

Castro-Lacouture, D., Medaglia, A.L. and Skibniewski, M., 2007. Supply chain optimization tool for purchasing decisions in B2B construction marketplaces. Automation in Construction, 16(5), pp.569-575.

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.

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.

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.

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.

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.

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.

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.

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

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.

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.

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

Dellmann, F., Wulff, H. and Schmitz, S., 2003, November. Findings from a practical project concerning web usage mining. In Data Mining, 2003. ICDM 2003. Third IEEE International Conference on (pp. 715-718). IEEE.

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.

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.

Downward, P. and Mearman, A., 2007. Retroduction as mixed-methods triangulation in economic research: reorienting economics into social science. Cambridge Journal of Economics, 31(1), pp.77-99.

Dubois, Anna, and Ann-Charlott Pedersen. "Why relationships do not fit into purchasing portfolio models—a comparison between the portfolio and industrial network approaches." European Journal of Purchasing & Supply Management 8.1 (2002): 35-42.

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

Edosomwan, S., Prakasan, S.K., Kouame, D., Watson, J. and Seymour, T., 2011. The history of social media and its impact on business. Journal of Applied Management and entrepreneurship, 16(3), p.79

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.

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

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.

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.

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.

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

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.

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.

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

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

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

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

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

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

Häubl, G. and Trifts, V., 2000. Consumer decision making in online shopping environments: The effects of interactive decision aids. Marketing science,19(1), pp.4-21.

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.

Hore, A.V. and West, R., 2005. Attitudes towards electronic purchasing in the Irish construction industry.

Hoyer, W.D., 1984. An examination of consumer decision making for a common repeat purchase product. Journal of consumer research, 11(3), pp.822-829.

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.

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

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

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.

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.

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

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.

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.

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.

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.

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

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

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

Jussila, J.J., Kärkkäinen, H. and Aramo-Immonen, H., 2014. Social media utilization in business-to-business relationships of technology industry firms.Computers in Human Behavior, 30, pp.606-613.

Kaplan, S. and Sawhney, M., 2000. E-hubs: the new B2B marketplaces. Harvard business review, 78(3), pp.97-106.

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.

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.

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.

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

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

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

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

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

Laesser, C. and Bieger, T., 2000. Information Sourcing by Swiss Travellers: A market segmentation approach. Tourism Analysis, 5(2-4), pp.125-131.

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.

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.

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.

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

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.

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

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.

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.

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

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.

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.

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

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

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

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

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

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.

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.

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

O'Cass, A., 2000. An assessment of consumer's product, purchase decision, advertising and consumption involvement in fashion clothing. Journal of Economic Psychology, 21(5), pp.545-576.

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

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.

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.

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

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.

Phan, D.D., 2003. E-business development for competitive advantages: a case study. Information & Management, 40(6), pp.581-590.

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

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

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.

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

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.

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.

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

Rapp, A., Beitelspacher, L.S., Grewal, D. and Hughes, D.E., 2013. Understanding social media effects across seller, retailer, and consumer interactions. Journal of the Academy of Marketing Science, 41(5), pp.547-566.

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

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.

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

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.

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.

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.

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.

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

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

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

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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

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

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.

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.

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

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

APPENDICES (2 pieces)

Appendix 1: Questionnaire

Welcome to the Scan-CPQ - Easing Your Machine Investment Process!

We are happy you want to participate in our survey. Your response is very valuable to us. With this survey we try to understand how you prepare and manage your investment decisions. We will use this information to improve our information services to you.

By completing the survey you will participate in a sweepstake where you can win an iPad Mini.

At the end of survey we'll ask your contact information if you want to participate in iPad sweepstake. After survey has closed we'll have a draw and you may be the happy iPad Mini owner!

There are 28 questions in this survey

INTRODUCTION

Please tell us about yourself

[1] How many years have you been connected to Construction Industry in your professional life? *

- *1-5 years*
- *6-10 years*
- *More than 10 years*
- *Not at all*

Investment Decisions

This part of the survey includes some questions related to the process of making investment decisions.

[2] How would you describe your own role in regards to machine investments inside your company? *

- *Finding potential markets, suppliers and products*
- *Collecting information and quotations*
- *Preparing machine investment proposal internally*
- *Making investment decisions*
- *Technical evaluations*
- *Other:*

[3] Which of the following describes best your machine investment procurement process?

- *Tight (planned and budget allocated, anticipated customer requirements)*
- *Somewhat tight (customer needs not anticipated, occasional new product search)*
- *Totally improvised (procurement only done when there is definite need or order)*
- *Other:*

[4] How important are different decision criterias in machine investment situation from following, *

Please choose the appropriate response for each item:

	Very Important	**Somewhat Important**	**Not Much Important**	**Least Important**
End user needs and requirements				
Expected potential of customer orders				
Price (Everything including after-sales services)				
Total cost of ownership				
Product quality (durability, service needs, etc.)				
After-Sales service				
Spare parts availability				

[5] Are there any other factors which have certain importance as well but not mentioned yet?

Please write your answer here:

INFORMATION SEARCH & MANAGEMENT

In this section we wish to understand your information collection process and its management.

[6] How actively do you collect information about new machines and/or suppliers?

- *Continuously (At least once a month)*
- *Sometimes*
- *Only search when there is a need*
- *Never or almost never*
- *Cannot tell*

[7] What are the ways in which you collect information regarding new machines? *

Please choose the appropriate response for each item:

	Always or almost always	Often	Rarely	Never or almost never	Don't Know
Search engines (Google, Bing etc.)					
Supplier websites					
Supplier e-newsletters					
Personally meeting suppliers					
Reading articles (printed version)					
Communicating with suppliers					
Advertisements					
Procurement portals					
Communicating with peers and colleagues					
Social media					

[8] Do you use any other ways of collecting new information?

Please write your answer here:

[9] How have you organized the machine investment data that you have collected? *

- *Information stored on your PC or your colleagues PC's*
- *In emails*
- *Documented in hard copies (folders kept somewhere in the office)*
- *All information in my head*
- *Shared storage / information system containing all data that everyone in your company can access*
- *Other:*

[10] When preparing for machine investment, what is the likelihood you search new information from the internet? *

- *Unlikely; ≤25%*
- *Possibly would, possibly not; ≤50%*
- *Highly Likely; 75% or above*

[11] Which of the following social media do you use for business purposes when preparing for machine investments? *

Please choose the appropriate response for each item:

	Always or almost always	Often	Sometimes	Never or almost never	Don't Know
Facebook					
LinkedIn					
Twitter					
YouTube					
Wikipedia					
Blogs					

[12] Which of the following describes best your company's own presence in social media? *

Please choose the appropriate response for each item:

	Always or almost always	Often	Sometimes	Never or almost never	Don't Know
Posting pictures of new products, projects or events					

New information about products, projects or events					
Advertising open vacancies					
Promoting company achievements					
Promoting different campaigns					
Sharing updates actively about industrial news					
Sharing new innovations in the industry					
Company's financial news					

[13] How would you describe the ways in which you use social media in your investment decisions?

Please choose the appropriate response for each item:

	Always or almost always	**Sometimes**	**Often**	**Never or almost never**	**Don't Know**
To learn about new working methods					
To access supplier profiles to understand their market position					
To understand supplier competences					
To know about new products and innovations					
To evaluate new marketing approaches					

[14] Could you briefly decribe how social media helps you in your investment decisions?

Please write your answer here:

SUPPLIERS, NEWSLETTERS AND CONFIGURATOR

This section includes some questions to understand your opinion about supplier newsletters, trade journals and web based configurator services

[15] Please state an estimation of the number of machine manufacturers your company currently works with *

- *≤5*
- *5-10*
- *10-30*
- *Above 30*

[16] How many email newsletters do you receive from your suppliers per week? *

- *≤5*
- *5-10*
- *10-25*
- *>25*
- *Other*

[17] On the average, how do you treat the recieved e-newsletters from suppliers? *

- *Always or almost always read them*
- *Often read them*
- *Sometimes read them*
- *Never or almost never read them*
- *Cannot tell*
- *Other:*

[18] Can you list three things you find valuable in e-newsletters?

Please write your answer here:

A web configurator is a special software tool that enables the web automation of many complex processes, with an internal engine it can be used to help customers visualize, configure, order or buy a product, request a service or obtain information they need, when they need it.

A typical example of a configurator is Volkswagen, 'build your own car', on their website where one could choose from different colors, textiles and other features and design own car and get the quotation online.

[19] Have you ever used web based configurator?

- *Yes*
- *No*
- *I don't know*
- *Other:*

[20] Please give us an estimate about how many of your suppliers provide such web based configurator? *

- *All or almost all of them*
- *Many of them*
- *Some of them*
- *None of them*
- *I don't know*
- *Other:*

[21] How valuable have you find web configurator services for your business?

- *Extremely Unhelpful*
- *Unhelpful*
- *Neither helpful or unhelpful*
- *Helpful*
- *Extremely helpful*
- *I don't know*

[22] Which of the following features you find most useful in web based configurator services?

Please select between 1 and 3 answer

- *Combination of product and services with best deals*
- *Precise and detailed price breakdowns*
- *Simplified and hassle free quotation process*
- *Configuration with layout drawings and necessary details*
- *Faster response, documentation not depending on sales person presence*

- *Other:*

[23] What would you expect from Scanclimber's configurator services?

Please write your answer here:

[24] How useful do you think a Scanclimber MCWP and hoist web configurator would be for you? *

- *Extremely useful*
- *Very useful*
- *Moderately useful*
- *Slightly useful*
- *Not at all useful*
- *Cannot tell*

DEMOGRAPHICS

This section includes some questions about your company's demographical informatiion.

[25] Which country is your company head office located in? *

Please write your answer here:

[26] Which industrial segment covers majority of business for your company? *

- *Machine rental company*
- *Construction industry*
- *Other construction related industry*
- *Other industry than any of the above*
- *Other:*

CONTACT INFO

If you want to participate in iPad Mini sweepstake, please provide us your contact details below.

Your contact data will NOT be associated to your responses by the researchers and your response will not be used for marketing purposes.

[27] Please fill in your details,

Please write your answer(s) here:

- *First Name*
- *Last Name*
- *Company*
- *Company Address*
- *Email*
- *Mobile phone*

Thank You. You are one step closer to use CPQ.

Your response is saved with us. Soon you will see that your company will start benefitting from this project. Scanclimber thanks you for your participation in the survey and hopes to serve you efficiently as always. Lifting safety to new levels.

Submit your survey.
Thank you for completing this survey.

Appendix: 2

<u>Phone Interviews Questions</u>

- *How would you describe your preparation for investment decision process?*
- *What triggers investment consideration for new products?*
- *Where do you start your information search from?*
- *What are the methods of information collection?*
- *How is your information collection organized? (Any preference or order, specific practices that repeat most of the times during info collection process?)*
- *How are the responsibilities organized for information collection? Does anyone in your company collects the ideas and brings them up in meetings? How do you manage this information collection?*
- *How do you store collected information?*
- *How do you process the collected information (once it is stored)? (Is it systematically stored in database and shared)?*
- *In terms of new product, what is the likelihood you would search new information on web? (don't give them choices at first but if you think they want some assistance, you can give choices like,*
    - *60% (around)*
    - *40% (around)*
    - *20% (around)*
- *In context of preparing for investment phase, do social media play any role for you or your sub ordinates? (If answer is yes, mildly ask) Could you please describe how?*
- *Do you roughly remember how many suppliers you carry?*
- *From how many of your suppliers you get email newsletters?*
- *What kind of content do you find valuable in email newsletters?*
- *How do you see the value of these newsletters compared to trade journals?*
- *Does any of your suppliers provide web based configurator service? (e.g. Volkswagen)*
- *How would you evaluate these services?*
- *What could we do to make our internet services more useful for you in terms of new investments?*