

NORWEGIAN UNIVERSITY OF LIFE SCIENCES



PREFACE

This Master thesis is written as a completion of my master study in Innovation and Entrepreneurship at the Norwegian University of Life Sciences(UMB), Ås. The foundation for this thesis started with my interest in the organizational learning field. Especially, two articles caught my mind; “Is yours a Learning Organization?”, by Garvin, Edmondson and Gino (2008), Harvard Business School. And “Promoting Relationship Learning”, by Selnes and Sallis (2003), BI Norwegian Business School.

The process of writing this thesis has been highly educational for me in accordance with understanding the theory, conducting the survey, analyzing the data and providing implications for how Kongsberg Defence Systems can improve their organizational learning.

I would like to thank my supervisor at UMB, Silja Korhonen-Sande, for the excellent guidance she has given me throughout the throughout this thesis. I want to thank my supervisor at Hibu, Rolf Qvenild, for all the help and good advices he has given me. And, I want to thank Thor Egil and Per Olve for their help and inspiration. Thank you all for sharing your experience, knowledge and network contacts, writing this thesis would not have been possible without your help.

I want to thank Kongsberg Defence Systems (KDS) for letting me write the thesis for them, and thank you to all the respondents who participated in the survey.

Kongsberg 14. august 2012

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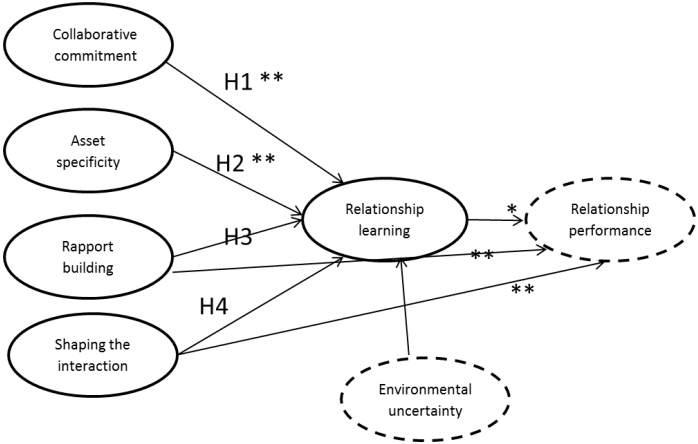
SUMMARY

In this study the focus is how to improve organizational learning; through developing the internal learning organization, and through improving learning in relationship with suppliers.

Learning organization theory, which is a normative and practical dimension of the broader construct organizational learning, is presented in this study to explain how the company can become a highly effective learning organization - through developing their performance related to three building blocks. A survey aimed at assessing the depth of learning in KDS, revealed that KDS have very high performance related to building block one – supportive learning climate. Building block two – concrete learning processes and practices, however, revealed an area where KDS have potential for improving their performance related to information sharing and education and training. KDS also score high on their performance related to building block three – leadership that reinforces learning.

Relationship learning between KDS and their strategic suppliers is a source of creating competitive advantage. The data from this study suggest that through developing a strong collaborative commitment between the companies, as well as an increase in the level of asset-specific investments, relationship learning can be improved. Also the findings from this study support the fact that relationship performance can be improved through engaging in relationship learning. In addition, two Theory-of-Mind skills, rapport building and shaping the interaction, proved to have a significant positive relationship with relationship performance in this study. The findings from this study is summarized in figure 1 below.

Figure 1. Summarized findings



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1. INTRODUCTION

“Over the long run superior performance depends on superior learning” (Senge 1990 p.7)

1.1 Knowledge – a critical resource for creating competitive advantage

Competence and knowledge development are some of the main sources of creating sustainable competitive advantage for companies today (Grant 1996). Know-how and knowledge resides in the heads of employees and is embedded in the inter-firm relationships and technology. Due to increasing global competition and technological change the need to learn is more important than ever. In our global economy the industry boundaries are collapsing, new business models are emerging, and if the rate of learning is not greater than the rate of change, the organization will fall behind (Garvin 2008). The new information- and knowledge economy thus require skilled and motivated people to cope with the speed of change and continuous self-renewal (Bartlett & Ghosal 2002).

In order to build and maintain their competitiveness companies should facilitate learning and knowledge development in the entire value chain and build an organizational culture that encourages cooperation across company borders, critical reflections and continuously day by day improvements. Bessant et al. (2003) infer that sustainable growth is strongly correlated to a firm's ability to learn along the whole spectrum of economic activities. Learning is further correlated to the ability to master the knowledge content in the production (Bessant et al. 2003). To keep pace with competitive threats and new technological opportunities it is crucial that firms learn fast and continuously. Today most companies are part of a big value network encompassed with several buyers and suppliers. In order to stay competitive, all players in the supply chain need to have a focus on learning and knowledge development.

Decisions related to learning and knowledge development have thus become important strategic choices. Therefore, an increasing interest of knowing more about the antecedents of learning and knowledge development within and between organizations has emerged (e.g., (Flores et al. 2012).

1.2 Organizational learning in defense industries

Defence industries offer an interesting and novel setting to develop further the theory and practice of organizational learning. Defence industries are dynamic and knowledge intensive experiencing rapid changes in their business environment. (<http://www.defence-industries.com/> 2012), the connecting point for buyers and suppliers across the global defence industry, explains that the roles of traditional military and internal security function have blurred. The private contractors have entered the industry, and production has internationalized and consolidated. Innovation is rapidly changing the industry within the areas of electronics, software and information, nanotechnology, robotics and communication technology.

Defence-industries.com also points out that large western firm's dominate the industry, which makes it difficult for new entrants to enter the production of major weapons systems and gain market share of existing giants. However, with the growth of new technologies and increasing costs, defense equipment manufacturers increasingly turn to licensing, collaboration and joint ventures. Learning between organizations thus increases in importance.

In this thesis, I examine organizational learning in Kongsberg Defense Systems (KDS), which is part of the KONGSBERG Group. The company delivers one of the world's most advanced missiles – NSM. NSM is both developed and manufactured in Kongsberg. At the time of this thesis, KDS was in the process of creating a new more advanced missile - JSM. JSM is designed for both anti surface warfare and naval fire support missions in open sea, littoral and over land. Holding this world class position requires world class learning, which means the ability to utilize, secure and develop core competence on products and processes faster and better than your competitors. To learn fast and from the best is crucial for KDS and their future competitiveness.

As an example, Harald Ånnestad, president of Kongsberg Defence Systems, explains that “KONGSBERG has involved a number of Norwegian subcontractors in the first phases of the JSM development. Today's decision for the integration of JSM on F-35 open up new opportunities for a long-term Norwegian industrial success that may be worth as much as NOK 25 billion. In future full-scale production, the JSM programme could translate into 450 jobs at KONGSBERG and significant assignments for more than 100 Norwegian subcontractors for several decades" (www.kongsberg.com/news 2012)

At their webpage (<http://www.kongsberg.com/en/kds/aboutus/>), KDS further explains that one key element of their strategy is the formation of alliances with major defense enterprises.

KDS, in turn, involves several subcontractors in their deliveries. In order to learn more efficiently, KDS needs to let its suppliers take part in important decisions and create a strong collaborate culture across the company boundaries. It is important for both the customer and supplier to have close relationships. The customers hold knowledge about how to use the product, while the supplier has knowledge about how it is created - together they can generate ideas on how to develop and improve the product.

KDS is located in one of the most important industrial clusters in Norway, the Kongsberg area. The companies located in this area purchase 70-80 % of their total turnover from outside suppliers. This supply represents nearly 20 million in yearly sourcing. The major part is purchased from strategic suppliers which hold a critical relation in the total value chain. KDS is Norway's premium supplier of defence and aerospace-related systems. KDS's customers include the Norwegian Armed Forces, NATO and Raytheon to mention a few. Market segments include command and weapon control systems, surveillance systems, communication solutions and anti-ship missiles. NASAMS (an air defence command and control solution), protect the airspace surrounding the White House. This contract affirms KDS's leading position in the modern air defence technology, and is a product of a 15 year long strategic cooperation with Raytheon (www.kongsberg.com/news 2005).

The following information is acquired from Rolf Qvenild, associate professor at Hibu and former manager of Kongsberg Våpenfabrikk. Over the years a common culture has evolved through all the "KV born companies". An industrial culture founded on high quality and reliable products, with a common belief that all technical problems can be solved. The "common Kongsberg culture" builds on the following six ground values;

1. Long-term visions
2. Ambitious goals
3. Demanding customers and the world's most competent partners
4. Continuously improvement and knowledge development
5. Keep your promises – Walk your talk
6. Systems engineering

Figure 1 illustrates the learning arena for the companies located in the Kongsberg cluster. Holding a world class position requires learning from- and collaborating with the world's most competent partners. The industrial development in Kongsberg started as early as 1814, through the foundation of KV. In the 1970's KV was described by customers as the "world's

largest prototype shop”, known for their “hairy goals and long-term visions”. In order to meet the requirements of customers who demanded groundbreaking and innovative solutions, KV had to acquire new knowledge and expertise from competent partners located outside of Norway – their vision at the time was to “work locally and think globally”.

The prominent feature in figure 2 is the co-operation between the customer, competence partners and strategic suppliers. The customer holds knowledge about the use, and has requirements to how the product should be, while the companies in the supply chain see the technological opportunities and solutions. When all parties come together to collaborate, they can create solutions that benefits all parties involved. Included in the learning arena are also the demanding and competent customers, and the international partners who hold the world’s best knowledge and expertise.

Figure 2: The Kongsberg Industry. Adapted from Rolf Qvenild.

The efficient "classroom" - Fast and favorable learning

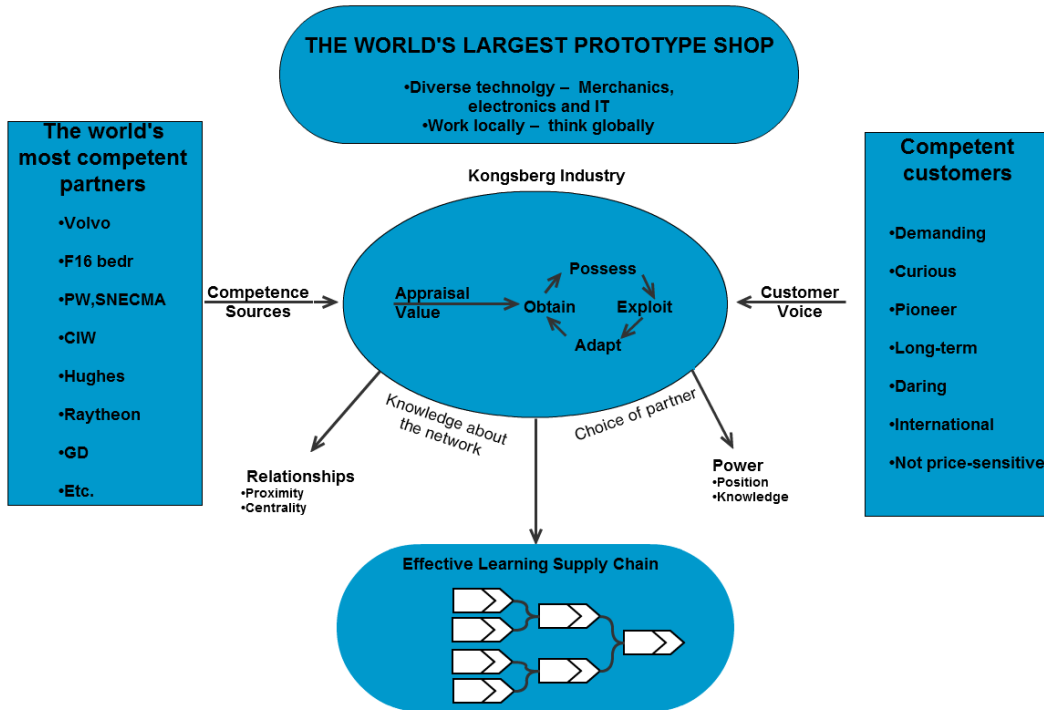


Figure 3: The Kongsberg Story – From a Military arsenal to world class companies. Adapted from Rolf Qvenild.



Applying technologies in advanced products for a global market

Kongsberg has evolved from being a government owned company, to what we now know as the Kongsberg cluster. The spinoffs from the 1987 restructuring of KV has to a large extent developed into world class companies with major world market shares in several business areas. The Kongsberg cluster encompasses a wide variety of highly innovative and versatile technology-based companies including;

- The Kongsberg Group (www.kongsberg.com)
- Volvo Aero (www.volvoaero.com)
- Dresser Rand (www.dresser-rand.com)
- FMC Technologies (www.fmctechnologies.com)

The advantage of being located together with several world leading companies is that companies can learn from each other and collaborate on areas like research and development and share experiences and knowledge.

1.2 Purpose of the study and Problem definition

The purpose of this study is to examine how companies can facilitate learning both within their own organization and in buyer-supplier relationship. More specifically, I will examine the internal learning organization of the firm, and the effect of asset specific investments, collaborative commitment and the purchasing personnel's theory-of-mind on relationship learning.

Theoretically, this thesis is inspired by research on organizational learning conducted by professor Garvin and Edmondson at Harvard Business School. A learning organization encourages employees to develop and share ideas, reflect over past actions and continuously improve the performance. In order to increase mission critical knowledge fast enough, improved learning and knowledge sharing processes need to be implemented in the day-to-day work. The ability to drive and adapt to changes fast is a determining factor for sustainable success in the market.

Time-to-proficiency becomes more and more important. People and organizations have a typical learning speed, but culture, methods, processes and infrastructures influence that limit. It is thus possible to improve the conditions for learning (Dietmar 2005). In order to ensure organizational learning, companies need to acquire, distribute, interpret, and integrate new information (Flores et al. 2012). Learning from the suppliers is one of the most important ways to acquire new information, and increasingly also interpreting the information, and deserves thus special attention in this thesis.

Consequently, this thesis is divided in two parts; part one aims at explaining what the organization should do to become a learning organization. Part two is about relationship learning and how the companies can improve learning in relationship with suppliers and customers. The study also aims at giving the participating organizations valuable insight in how they are performing related to learning. Are they learning organizations? How can they improve relationship learning?

There are a number of factors that can influence relationship learning, and organizational learning. I have a limited time available for this thesis and I am not able to look at all factors in depth. I hope I can provide some valuable information that the company can use in the future, and give some implications for how to improve relationship learning. Learning is a multidimensional concept and it is therefore difficult to measure to what extent the various factors affects the learning capability.

The key research question to be investigated is:

How can KDS improve organizational learning by developing their internal learning organization and relationship learning with their strategic suppliers?

Definitions of the core concepts in this thesis are as follows:

Organizational learning:

“An entity learns if, through its processing of information, the range of its potential behaviors is changed” (Huber 1991 p.89).

Learning organization:

“A learning organization is a place where employees excel at creating, acquiring and transferring knowledge” (Garvin et al. 2008 p. 110)

Relationship learning:

“Relationship learning is a continuous process between the customer- and the supplier organizations, aimed at sharing information, making use of information, and integrating the acquired information into the shared relationship-domain-specific memory to improve the range or likelihood of potential relationship-specific behavior” (Selnes & Sallis 2003 p.86).

Strategic suppliers:

KDS define strategic suppliers as those suppliers which they are highly depend upon the performance of, in order to successfully deliver their products.

2. THEORY

In this chapter, I first review literature that supports the core assumption of this thesis: organizational learning is important, as knowledge is a key source of competitive advantage for companies today (section 2.1 and 2.2). I then introduce absorptive capacity theory which assists in understanding why companies also need to turn to external sources in order to access knowledge and gain advantages through collaboration (section 2.3).

The aim of this study is to provide implications and tools for how to improve organizational learning. Learning organization, which is a more normative and practical oriented perspective of organizational learning, is introduced to provide concrete tools and prescriptions for how learning can be improved (section 2.4). Finally, relationship learning literature is reviewed to examine how learning in inter-firm relationships can be facilitated and improved. Literature on organizational learning and learning organization has a firm internal focus, whereas theories on absorptive capacity and relationship learning focus on learning from the external business environment and in co-operation with other companies (section 2.5)

2.1 Knowledge as a source of competitive advantage

There are two key paradigms that try to explain how companies can create competitive advantage.

The first paradigm trying to explain the determinants of competitive advantage is the industry structure view. Michael Porter argues that “the success of a company’s competitive strategy depends on how it relates to its environment” (Porter 1980 p.30). Porter identifies five competitive forces; threat of new entrants, bargaining power of buyers, threat of substitute products, intensity of rivalry among competitors and bargaining power of suppliers. Together these forces have impact on a company’s success. A company is best positioned where the forces do the most good, or the least harm (Porter 1980).

This study, however, builds on the second paradigm, the resource-based view of the firm (RBV). RBV links the firm’s internal resources directly to the firm’s performance. The internal resources form the basis of sustainable competitive advantage, but only when they are valuable, rare, difficult to imitate and non-substitutable. Organizational processes, leadership, information and knowledge are all part of these internal resources (Barney 1991). Knowledge is a resource that has gained more attention during the recent years as a source of creating sustainable competitive advantage.

The RBV was advanced by (Kogut & Zander 1992) and (Grant 1996), with a specific focus on a resource many believe is the most important resource a company can possess, namely; knowledge (Grant 1996). This view is referred to as the knowledge-based view of the firm. The view builds on the assumption that heterogenic knowledge-bases and capabilities between organizations are the most important source of building competitive advantage. Unique abilities to generate and exploit knowledge can enhance performance. It is the companies relative ability to build and draw upon knowledge that create differences in company performance (Grant 1996). I now turn to organizational learning to examine how firms develop their knowledge base.

2.2 Organizational learning

Organizational learning is crucial to the organization's ability to cope with constant change and renewal, and research in this field indicates that organizational performance and innovation can be enhanced through organizational learning (Flores et al. 2012).

Organizational learning occurs at different levels; individual, group and organizational level (Edmondson & Moingeon 1998). The challenge lies in transferring the individual knowledge to the organization and share it with other organizational members (Brochs-Haukedal 2010). A number of factors are believed to have impact on organizational learning, and organizational (learning) culture is regarded as one of the most influential factors (Flores et al. 2012). Central in much of the organizational learning literature is the "bottom-up learning" perspective; inferring that organizations learn through their members. Lessons learned in the past, when embodied in today's routines - lead the organizational life (Edmondson & Moingeon 1998).

The organizational learning literature comprehends a broad range of perspectives and phenomena. The different perspectives and their key theoretical contributors are introduced briefly in the following list, with a representative author is presented after each perspective:

1. Adaption, the first approach to organizational learning. Central to this perspective is the notion that organizations learn by adapting to its environment. This perspective stem from behavioral theory (Cyert & March 1963)
2. Routine-learning, the evolutionary approach. Learning is viewed as a process of continuous improvement and incremental innovation (Nelson & Winter 1982)
3. Assumption sharing, the cognitive approach. Learning through self-reflection and common frames of reference. Lower level- or single loop learning refers to changes in

routines, while double loop- or higher level learning refers to the development of new rules and understanding causations (Argyris & Schon 1978; Weick 1991)

4. Organizational knowledge, the resource approach. In the knowledge-based theory, the organization is conceptualized as a knowledge-integrating institution, and the focus is knowledge application rather than creation (Grant 1996)
5. Learning organization, the normative approach. What is the best way of learning? The focus is on strategic learning and concrete tools for how to become a learning organization (Crossan et al. 1999; Edmondson 2008; Garvin et al. 2008; Senge 1990).

This study will use the learning organization approach since the motivation for this study is to give managerial implications and tools that can assist in improving performance through organizational learning.

Although organizational learning clearly has many different perspectives, several researchers do agree on that learning often start with some form of information acquirement (Daft & Weick 1984; Flores et al. 2012; Huber 1991; Walsh & Ungson 1991). Learning is a complex and comprehensive phenomenon. Whereas (Cohen & Levinthal 1990) define learning as “acquisition and utilization of new knowledge in the organization”, Huber split learning in four main categories; information acquisition, information distribution, information interpretation and storing in an organizational memory base. The term learning thus involves more than just the process of acquisition, and utilization of new information within the organization. Information can be acquired from internal or external sources (Huber 1991). Organizations can also acquire information through feedback over outcome of past actions, and potential implications for future changes (Duncan & Weiss 1979).

Learning involves, however, more than information acquisition. The information needs to be distributed across the organization, interpreted and integrated (Flores et al. 2012). If information is not distributed to the members of an organization, it may only lead to learning for the individuals who obtained the new information (Huber 1991). By making critical information available for organizational members the likelihood and importance of individual problem solving is increased (Edmondson & Moingeon 1998).

The next phase is referred to as the interpretation process, this is where the organization through its members, comprehends the newly acquired information (Levinthal & March 1993). The interpretation is stronger and more robust when individuals have had a chance to

talk and discuss various interpretations together. This process spans from the individual to the group level (Crossan et al. 1999).

Integration of information occurs when the different interpretations come together to form a shared understanding (Flores et al. 2012). Information is then stored in the shared organizational memory base (Flores et al. 2012; Huber 1991; Walsh & Ungson 1991).

Finally, knowledge is institutionalized (Flores et al. 2012; Huber 1991; Walsh & Ungson 1991). This is the process of embedding what the individuals and groups have learned in to the organization. The knowledge is institutionalized in to the organizational rules, routines, system, structure and strategies (Heide & John 1990). Organizational learning strives to create competitive advantage through changes in the organizational responses. When new knowledge and learning is institutionalized the potential of change is enhanced (Flores et al. 2012).

It is important to note that there is a distinction between information and knowledge; it is only in the last phase – knowledge institutionalization, that the information is actually transformed into knowledge. While the term information is used more generally about flows of messages, knowledge on the other hand is shaped through the beliefs and commitment of the people holding it (Nonaka 1994). However, in this study, knowledge and information are used interchangeably.

Instead of looking only at internal learning processes, however, we need to take into account that there can be critical resources that extend beyond firm boundaries. Companies therefore need to facilitate knowledge sharing and development both inside the organization and in relationship with suppliers and customers. In other words, to get access to new knowledge and to learn companies often need to turn to external sources. Absorptive capacity is a theory I now will introduce to explain this process in more detail.

2.3 Absorptive Capacity

Absorptive capacity (AC) is defined as: a company's ability to identify, assimilate and exploit knowledge from the external environment (Cohen & Levinthal 1989). AC is thus a company's ability to tap into and make use of externally available knowledge. Cohen and Levinthal focus mainly on technological knowledge in their 1990 paper, but applying AC to market knowledge is consistent with the theory as well (Volberda et al. 2010). AC refers not only to the process of assimilation of knowledge, but also to the ability to exploit the knowledge (Cohen & Levinthal 1990). Since absorptive capacity is a key element for developing and increasing a company's knowledge-base, it is also strongly related to the knowledge-based view. (Zahra & George 2002) re-conceptualized AC as a dynamic capability, that determines a company's knowledge creating- and utilization ability, therefore AC is closely linked to the ability to create sustainable competitive advantage.

Absorptive capacity views the organization as the learning unit, and the focus is less on its individual members. AC focuses on knowledge from external sources to the organization. A firm thus has little control over them, compared to firm internal sources of knowledge, which are the main focus in the learning organization perspective.

Cohen and Levinthal argue that the ability to absorb, exploit and make value of external information can be vital for a company's ability to innovate. A company with higher levels of AC will be more proactive and better able to exploit opportunities present in the business environment. Cohen and Levinthal (1990) explain that the ability to exploit and make value of knowledge from outside sources, largely is a function of the prior related knowledge in the company. Prior related knowledge increases the company's ability to put new knowledge into memory. Prior related knowledge may include basic skills and experience, a common language and updated information about new technological or scientific developments. The role of prior related knowledge proposes two types of AC that will affect innovation performance (Cohen & Levinthal 1990);

1. Understand what further knowledge is needed to fully exploit knowledge from the external environment
2. Improved understanding and thus the ability to evaluate technological advances that indicate new technological development

(Zahra & George 2002) criticized the early AC literature for overlooking the role of individuals, by using only measures like R&D density and number of people working in R&D units. These measures did not catch the whole essence of the AC construct. In their early research, (Cohen & Levinthal 1990) do infer however, that AC depends on the capabilities and links across a mosaic of individuals in the company. A person's ability to learn and solve problems is determined by prior related learning experience. Cohen and Levinthal argue that a company's AC is determined by transfers of knowledge within the company and its subunits, as well as communication with the external environment. Knowledge about where to find complementary knowledge is an important individual capability. This can include knowledge of who knows what, who can assist us with that problem or who has the best ability to exploit new knowledge. Through close collaboration and engaging in relationships with customers and suppliers, employees develop knowledge and awareness of others' capabilities and strengths. A company's absorptive capacity thus depends highly on the capabilities of its individual members.

(Cohen & Levinthal 1990) define AC as an organizational construct, but also infer that AC exists on the individual level. AC is a firm-level construct embedded in an individual-level understanding of cognition, motivation, action and interaction. The individual's behavior towards learning, knowledge sharing, training and new knowledge absorption has a clear impact on the organizational level AC (Volberda et al. 2010).

(Zahra & George 2002) explain that AC has four dimensions: acquisition, assimilation, transformation and exploitation. The two first dimensions account for potential AC, the latter two realized AC. Acquisition and assimilation are related to relationship learning, while transformation and exploitation are linked to learning within an organization.

“Firms can acquire and assimilate knowledge but might not have the capability to transform and exploit the knowledge for profit generation” (Zahra & George 2002 p. 191).

I now turn to the research on learning organization and relationship learning that explains how management can manage the acquisition and utilization of new knowledge in the organization through its employees and by influencing relationship characteristics between the buyer and the supplier. Whereas the main focus of the literature on learning organization is on explaining firm-internal factors that facilitate learning, the theory on relationship learning explains how to facilitate learning at the interface between two organizations.

In this study, I assume that both the supplier's and buyer's ability to learn in relationship with each other can be affected by their organization's internal learning ability although this relationship is not explicitly tested (Figure 3). To facilitate relationship learning and to be able to transform and exploit the new knowledge, both organizations need to have a commitment to learn, and a mutual understanding of the benefits from engaging in relationship learning. Relationship learning is the solution when both companies see that through collaboration and by sharing of information and experience they can achieve goals they were unable to meet by themselves. (Hallén et al. 1991) propose that companies in relationships affect and are affected by each other continuously. According to resource dependence theory, organizations are inevitably affected by each other, and organizational behavior is shaped by the demands and pressures from the other organizations operating in the same environment (Pfeffer & Salancik 1978). Therefore, it is likely that the individual organizational learning capability has some effect on how successful each company is in facilitating for relationship learning (Selnes & Sallis 2003).

Figure 4: The organizational learning environment



2.4 Learning Organizations

Learning is here defined as a process; “An entity learns if, through its processing of information, the range of its potential behaviors is changed” (Huber 1991 p. 89). An essential antecedent for creating a learning organization is to engage individuals in reflecting upon knowledge and encourage them to develop their own thoughts and viewpoints (Edmondson & Moingeon 1998). This infers that how individuals think, plays an important role in both organizational learning- and learning organization perspective. Learning organization theory is explicitly normative and focuses on how to manage and facilitate learning with firm internal factors (Edmondson & Moingeon 1998). Concrete processes, tools and strategies for how to become a learning organization is the main focus in this distinctive form of organization learning theory (Garvin et al. 2008). Learning organizations are characterized as flexible and creative.

Another definition of the learning processes is “the generation, collection, interpretation, and dissemination of information” (Garvin et al. 2008 p. 109). In difference to Huber’s and Cohen and Levinthal’s definitions of organizational learning, Garvin et.al also includes the process of creating knowledge in their definition of learning.

Organizational members need to learn to think systemically, and understand how their organization works so they can make changes to improve the organizations performance (Senge 1990). Learning includes two parts; the first is “knowing what to do”. Knowing what to do involve the process of figuring out the best way to do something, also called best practice, and share it with others. The second, and maybe more important, is “doing what we know”. This is related to making sure that people follow through and actually do what they are supposed to or what they have learned. Most companies fail in the second part – doing what they know (Garvin 2005).

A learning organization is a place where employees are skilled at creating, acquiring, and transferring and retaining knowledge. The learning organization need to continuously modify its’ behavior to reflect upon the newly acquired knowledge and insights (Garvin et al. 2008).

Garvin et al. (2008) found that the early literature about learning organizations to be abstract and in lack of concrete prescriptions for how to actually create a learning organization. Senge (1990) made the learning organization approach popular through the book “The Fifth Discipline”. He described that a learning organization consist of five ground components; system thinking, shared vision, team learning, personal mastery and mental modes. But the author did not provide any clear prescriptions or concrete tools for how to become a learning

organization. The early concept was aimed at the CEOs and senior management, and little devotion was made to middle management. The local managers are in charge of projects and other critical work in the organization, yet they were given little, if any attention. Edmondson and Garvin thus decided to develop tools and uncover concrete processes that can help organizations to become better learning organizations (Edmondson 2008; Garvin et al. 2008).

Organizational research over the two past decades, have touched on three key dimensions that have proved to be vital in becoming a learning organization (Garvin et al. 2008). These include:

1. A supportive learning environment
2. Concrete learning processes and practices
3. Leadership that reinforces learning

These dimensions are referred to as “the building blocks of the learning organization” (Garvin et al. 2008). The three building blocks are working together in a fine balance, and performance must be improved in all three dimensions in order to become a successful learning organization.

2.4.1 Building block 1: A supportive learning environment

A learning organization is characterized by the ability to adapt to changes fast, often even faster than its competitors. A supportive learning environment is a work environment which allows taking pauses in action and encouraging review of the organizational processes and practices (Garvin et al. 2008).

An organization’s learning environment is a multidimensional construct. Garvin et al. (2008) have identified four factors that can assist companies in creating an environment that enables learning. First you need to build a psychologically safe environment, this is where differences in opinion are appreciated, where people are open to alternative ways of working and you can admit mistakes. A learning environment appreciates new ideas and encourages employees to share ideas with leaders and colleagues. Providing time to reflect upon past actions is the fourth pillar of the supportive learning environment. Providing time for reflection is important in order to learn from experience and to give employees an opportunity to improve their performance.

Four distinguishing factors that foster a supportive learning environment

In order to facilitate learning, the organization needs to first build psychological safety for their employees. This infers creating an environment where no one is afraid of speaking up about what they have on their mind, or present viewpoints that are different from those held by the majority. In an environment with high level of psychological safety employees can ask probing questions, ask for help, and acknowledge their mistakes, without being afraid of such mistakes being held against them later (Garvin et al. 2008). We often learn through failing and mistakes, employees must therefore know that they are allowed to make some mistakes. In companies where knowledge changes continuously employees are dependent on collaboration and sharing of knowledge, since they often must make decisions without intervention from managers (Garvin et al. 2008). Psychological safety is thus a requirement in such dynamic context.

Appreciation of differences is an important antecedent to facilitate for learning. Learning arises when people recognize contrasting ideas. Through acknowledging the value of challenging viewpoints and alternative views energy and motivation increases, this again can stimulate new thinking (Garvin et al. 2008).

The organization need to be open for new ideas, learning should never be limited to solving problems and correcting errors. Employees should be encouraged to explore the unknown and take risks. A culture where employees feel their ideas and opinions are welcome and accepted, can enhance learning and result in new or improved products or, new ways of working (Garvin et al. 2008).

Time for reflection over how the work is going is important to review work processes, and to open up for improvement. If employees are too focused deadlines and time pressure, it can give a negative effect on their ability to think creatively and analytical (Garvin et al. 2008).

2.4.2 Building block 2: Concrete learning processes and practices

Like other business processes, learning arises from a series of steps and activities. Concrete processes include sharing knowledge and best-practice, experimentation, training and education. Knowledge needs to be shared in systematic ways to give most value. Knowledge-sharing is hence a critical process which takes place at several levels; between individuals and groups inside the organization and between the organization and external sources (such as suppliers, customers or competitors). Knowledge can move laterally and vertically inside a company. The concrete processes are there to make sure that critical information gets into the

heads of those who need it (Garvin et al. 2008). Reflection over past actions is important in order to learn from mistakes, as well as from best practice. Time for reflection is thus another important dimension in order to create a well-functioning learning organization. Reviews after projects are finished, is a great way to find out what happened, why it happened, what activities do we sustain, and what activities should we improve in the future? (Garvin et al. 2008). It is expensive to make the same mistakes over and over again. Companies should try to find out as much as possible about the problem, why it happened and how to fix it, and then they can prevent making the same mistake again. Garvin explains that a way to test if your organization is a learning organization is to see if you make the same mistake twice (Garvin 2005).

Training and education is used to develop both new and established employees. To recognize and solve problems methods for analysis and interpretation is needed. But learning is not merely about correcting errors and solving problems. It is also about making innovative approaches (Garvin et al. 2008).

2.4.3 Building Block 3: Leadership that reinforces learning

The employees and the whole organizations learning ability is heavily influenced by management behavior. When leaders ask questions instead of just providing answers, they welcome dialog and discussion. Managers also need to be good listeners and be interested in feedback from their employees. Leaders that want to facilitate learning, need to motivate and encourage their employees, provide time for identifying- and solving problems, and emphasize the importance of reflecting over past actions. When leaders encourage multiple points of views in a discussion and take them into consideration, employees may feel encouraged to share their ideas or suggestions on improvement (Garvin et al. 2008).

2.4.4 Implementing a learning organization

Leadership behaviors makes it possible to create a supportive learning environment, which in turn makes it easier to carry out concrete learning processes, and these learning processes helps leaders and employees nurture learning. The three building blocks are all dependent on each other. Leadership alone is not enough, the supportive environment and the processes needs also to be functioning. However, it is important to note that there might be variations in norms and behavior in different units, and most certainly between the company and their suppliers, therefore a one-size-fits-all strategy will not always work in order to create a learning organization (Garvin et al. 2008).

Table 1 shows two opposing strategies for execution in organizations. As we can see in the following table, execution-as-efficiency use a behavioral strategy, the down side of this strategy is that it can produce fear among workers (Edmondson 2008). In a knowledge-based company, “people rely on their own and colleagues’ judgment and expertise, rather than on management direction, to decide what to do” (Edmondson 2008 p. 63)

An exclusive focus on execution-as-efficiency can lead companies to delay or understaff investments in areas where learning is critical (Edmondson 2008). If ideas are not appreciated, and the focus is solely on results, this can give a negative effect on the company’s ability to learn. When employees get the message that execution as efficiency is the way to go, they might fear it is risky to take up manager’s time with new ideas, questions or speak up about what is on their mind. Critical information can diminish before it makes it to the top (Edmondson 2008). The execution-as-learning angle has a two-way feedback function, which is important for learning. (Lund 2012) experienced through her work in Telenor that a two-way feedback can give high-level executives valuable information and insight. Top-management holds an overview over the business, but they often lack the insight that the employees holds about the daily work.

Table 1. Execution-as-efficiency versus execution-as-learning.

Execution-as-efficiency	Execution-as-learning
<ul style="list-style-type: none"> • Employees follow directions and rules • Leaders are responsible for giving answers • Optimal work processes designs are decided and set up in advance • New work processes are developed infrequently; change is a huge undertaking • Feedback is top-down and corrective • Problem solving is not usual, employees ask when they do not know how to proceed 	<ul style="list-style-type: none"> • Leaders give direction and communicate the mission • Employees or teams discover answers • Tentative designs are set up as a starting point • Work processes keep developing, change is natural, experiments and improvements is the way to work • Feedback is two ways; leaders give advice; team members give feedback from their work • Problem solving is the way to work, information is provided to guide judgment

Great execution can be difficult to sustain, not because people get tired of hard work, but because of a managerial mind-set with too much focus on efficiency and effective execution can deter the employees' ability to learn and innovate. Organizations that have focus on execution-as-learning use "the best knowledge obtainable" to create process guidelines (Edmondson 2008). The best knowledge obtainable is understood to be a moving target. The organization need to make information available when and where it is needed. This will also enhance the organizational member's ability to cooperate. To review how the work is done companies can capture process data. This data can then be studied to point out areas where they need to improve performance. These practices form the basis of a learning infrastructure of the organization, makes learning part of business as usual (Edmondson 2008).

2.5 Relationship Learning

The research on organizational learning first approached learning as an organizational phenomenon, and later advanced it to be an inter-organizational phenomenon. Relationship learning has been identified as an important source of creating competitive advantage and “supernormal” profits in relationships. Supernormal profits refer to relational rents created in an exchange relationship that neither firm could have generated in isolation (Dyer & Singh 1998). The knowledge-based view infer that flows of knowledge will enhance performance for each company participating in the supply chain (Hult et al. 2004). A firm that is part of a network with routines and practices for sharing knowledge are expected to gain advantages, relative to those firms without such network access (Dyer 2006).

Day (1994) explain that companies can take advantage of capabilities located outside their own firm’s boundaries by creating relationships. Companies may together achieve capabilities that allow them to compete and get ahead of their competitors, due to their improved ability to foresee market desires (Day 1994).

Relationship learning is defined as “a continuous process between the customer- and the supplier organizations, aimed at sharing information, making use of information, and integrating the acquired information into the shared relationship-domain-specific memory to improve the range or likelihood of potential relationship-specific behavior” (Selnes & Sallis 2003: p. 86). Relationship learning is thus a process that aims to improve future behavior in a relationship.

Business relationships and the role they play have received growing attention in organizational research and inter-firm relationships have been studied by many researchers in Europe (Hallén et al. 1991; Håkansson & Snehota 1995; Selnes & Sallis 2003), Japan (Nonaka 1994) and in the US (Dwyer et al. 1987; Dyer 2006; Wathne & Heide 2000). The main purpose of a business relationship is to link the activities for two companies. Joint marketing, joint R&D and joint quality control are some activities that the exchange partners can collaborate on. By collaborating on these activities the companies can reduce or remove costs, by using fewer resources and reduce time spent on activities. Relationship learning can increase flexibility to handle the unforeseen, as well as improve quality and reliability (Selnes & Sallis 2003). Another reason for why companies should involve in relationship learning is that it can defend them against environmental uncertainty. It is therefore believed that companies can be motivated to learn in relationships to gain some control over environmental

uncertainty. Relationship learning can thus improve efficiency and effectiveness, or both (Selnes & Sallis 2003).

Relationship learning is viewed as a unique form of organizational learning, but relationship learning is still different from organizational learning in many ways. In a relationship, the companies share a common memory base, and learning is dependent on both companies' commitment to co-operate. The common memory base contains frames of references, values and common history (Selnes & Sallis 2003). Relationship learning also differs from organizational learning in how it is managed. The outcome is different; organizational learning only affects the organization and relationship learning has impact on both companies. Relationship learning can act as both a goal and a foundation of organizational learning (Selnes & Sallis 2003). The perspective used in this thesis views relationship learning as a capability of the relationship itself. This view is also consistent with the perspective used by (Hallén et al. 1991; Selnes & Sallis 2003).

From the supplier's point of view, a better understanding and more knowledge about their customers, give opportunities to develop and deliver products and services with superior value. The customer's on the other hand, are more likely to choose products that satisfy their needs when they possess more knowledge about their supplier's (Selnes & Sallis 2003). Highly effective learning relationships can increase the value of products and services they offer, due to greater problem-solving abilities (von Hippel 1994). As information is shared among the companies, they gain more knowledge about preferences and needs. By sharing information about successful and unsuccessful experiences with products, companies can improve future performance. Yet, some organizations might be reluctant to share valuable information with suppliers in fear of that the supplier can spill this knowledge over to a competitor. There are probably more advantages of make knowledge available, because the supplier might have better opportunity to make use of the knowledge.

“The willingness of firms to combine complementary strategic resources may also hinge upon credible assurances that those trading partners will not attempt to duplicate those same resources, thereby becoming a competitor” (Dyer & Singh 1998: p. 670).

Some information may also be rejected due to the lack of ability to make sense of the given information. Board meetings, management meetings and cross-functional teams are examples of mechanisms organizations employ to make sense of information (Selnes & Sallis 2003). Overall relationship performance improves when the companies' share information and open for dialogue around the information they shared. In learning relationships, both parties update

their common memory-base and adjust their behavior after what they learned. Relationship-specific knowledge is then embedded in a relationship-specific memory base. Such memories appear in the organization as physical artifacts such as documents and computer memories (Selnes & Sallis 2003).

2.5.1 Improving Relationship Learning

In this section I will present four important factors that affect relationship learning: collaborative commitment, asset specificity and two inter-personal mentalizing skills (rapport building and shaping the interaction). Whereas the first two factors are specific to the buyer-supplier relationship, inter-personal mentalizing skills are a characteristic of an individual employee.

Asset-specificity and collaborative commitment was chosen to be in the measurement model due to that these variables are found in the existing relationship learning literature (e.g Selnes and Sallis (2003)), to have a positive relationship with relationship learning. I wanted to test if these variables also will have the same effect in the dynamic environment that KDS operates in. The defence industry is characterized by complex and highly innovative technological solutions, and the companies exchange highly confidential and complex information. The inter-personal mentalizing skills were included in the model to test what effect individual characteristics have on relationship learning. This is especially relevant for people in purchaser or sales positions in a company. To my knowledge, there are no previous studies testing the relationship between inter-personal mentalizing skills and relationship learning.

2.5.2 Collaborative commitment

Commitment is defined as “an exchange partner believing that an ongoing relationship is so important as to warrant maximum effort in maintaining it; that is, the committed party believe the relationship is worth working on to ensure that it endures indefinitely” (Morgan & Hunt 1994: p. 23).

Selnes and Sallis (2003: p. 88) explain that “a manifestation of collaborative commitment is that the parties tend to develop common goals and implement joint measures, which thus initiates activities that benefit both parties and subsequently enhances the value of the relationship”.

A common goal can be for instance to improve the productivity by a given percentage within a given period of time. A broad scope collaboration can include the process of developing a

new product or service. While a narrow scope can include assuring a more reliable on time delivery (Selnes & Sallis 2003).

Relationship learning is a long-term investment that increases specialization. Collaborative commitment can reduce the risk of investing in relationship learning; because the relational companies interact closely they can learn and adapt competences from each other. Such learning can imply that one of the companies actually outperform the other and thus becomes a competitor. However, through continuously improving and developing a strong mutual commitment, the parties will reduce the risk associated with sharing information, knowledge and competences (Hamel & Doz 1998).

I believe that in a relationship, both companies are willing to put effort in sustaining and supporting relationship learning, when they know that both parties consider it worth working on. Hence,

Hypothesis 1: Collaborative commitment between the companies has a positive effect on relationship learning.

2.5.3 Asset specificity

Transaction-specific investments are defined as investments and adaptations dedicated to the focal relationship. The investment may only create value within the specific relationship (Selnes & Sallis 2003).

Williamson (1985) identifies three different types of asset specificity;

1. Site specificity
2. Physical asset specificity
3. Human asset specificity

Site specificity refers to immobility and location of production stages. Inventory, transportation and costs of collaborating activities can be considerably reduced through investments in site specificity (Dyer 1996). Physical asset investment refers to for example machines and tools bought only to adapt a specific company's standards. Asset specific investments can improve quality and differentiation of products (Dyer & Singh 1998). Human asset specificity refers to the know-how and common language developed by people working in the relationship. This can improve communication, and through better communication improve quality and speed to market (Dyer 1996).

Asset specificity can create a need for protection against opportunism. Opportunism is defined as self-interest seeking with guile. Guile includes lying, stealing, cheating, misleading or intended confusion (Williamson 1985). Opportunistic behavior also includes the decreasing of quality standards, contractual breach and falsification of financial reports. In relationships with risk of opportunistic behavior the costs related to monitoring and control are high (Wathne & Heide 2000). Joint learning activities can act as protection against opportunism (Selnes & Sallis 2003) and (Buvik & John 2000). Investments in site-specific assets facilitate inter-firm collaboration and can through that enhance their performance (Dyer & Singh 1998). Asset specific investments can stimulate relationship learning since it can increase return on investments (Selnes & Sallis 2003). The authors further explain: “relational learning is closely linked to how the parties have adapted to each other through investment of dedicated resources” (Selnes & Sallis 2003: p. 82).

Transaction-specific investments are thus believed to have a positive impact on relationship learning. I hypothesize the following about the relationship between asset-specificity and relationship learning:

Hypothesis 2: Asset-specific investments have a positive effect on relationship learning.

2.5.4 Interpersonal-mentalizing skills

To my knowledge, there are no previous researchers that have looked at interpersonal-mentalizing skills in relation to relationship learning. I wanted to include this in the survey to find out if there is a positive relationship between company representatives who are high on interpersonal-mentalizing skills and relationship learning.

Interpersonal-mentalizing skills are referred to as a person’s ability to understand the mind of the customer or supplier. These skills further include the ability to put yourself in the shoes of the other person, and to sense non-verbal cues during interaction (Dietvorst 2009). Dietvorst et.al (2009), have created a theory-of-mind scale which can differentiate between the better-skilled and less-skilled interpersonal-mentalizers. In their study they tested the scale on sales people.

“Our ability to explain and predict other people’s behavior by attributing to them independent mental states, such as beliefs, needs, intentions or preferences is defined as having a theory-of-mind (ToM). The ability to process subtle cues and make decisions based on this new information is a part of such skills (Gallagher & Frith 2003).

Neuroscience research has revealed that interpersonal-mentalizing occur as an generally unconsciously process, which trigger special regions in the brain (Dietvorst 2009). The three most consistently activated regions include; the left and right temporoparietal junctions (TPJ), the left and right temporal poles and the medial prefrontal cortex (MPFC) (Frith & Frith 2006). In the ideal case these areas cooperate to form a complete interpretation of the mental states or events of the other person in an interaction (Frith & Frith 2003).

Dietvorst (2009) explain that top and bottom performers can be distinguished on their ability to build and maintain relationship, meet goals and achieve high number of sales. The high scorers are more adaptive and flexible in selling situations, better able to take the perspective of the other party and have less social anxiety. It has been proposed that adaptive selling is synonymous with working smarter. Knowledge about how behavior is formed through contact and interaction, together with the ability to modify behavior in sales situations is a core ability in adaptive selling (Hamel & Prahalad 1994). A core conclusion we can draw from neuroscience, is that the brain consist of several modules that are triggered by different cues in the environment and is highly dependent upon on individual and personal differences (Dietvorst 2009). These modules and cues are working together to make sense of what we perceive is being communicated.

Interpersonal-mentalizing skills can have a positive impact on relationship learning because it is the people in companies that learn, and it could be that people with high ToM capabilities are better and faster learners and that they are better able to facilitate relationship learning. The ability to take initiative in conversations, ask questions and search for information and hints - can be important in order to get more knowledge about the other company in the relationship.

If a person is able to understand hints communicated from a customer or a supplier, it could give a better understanding of what the other company really wants and why they need to buy this particular product. In order to become more effective the person needs to also understand the customer's mental states and needs. The main purpose for why salespeople interact with customers is to offer products that best meet their needs. These skills are just as important for the people working in the supplier company, who can better understand how and on what premises the customer company make their choices (Dietvorst 2009).

The theory-of-mind (ToM) scale consists of four distinct factors. The first factor in the ToM-scale is the ability to build rapport and take initiative in conversations. The second factor includes ability to detect cues and hints and the third factor is related to coordinating

interactions to achieve closure on a deal. The fourth factor is the ability to shape interaction, but Dietvorst et al. (2009) did not find this factor addressed in the literature on interpersonal-mentalizing before. That is also why I chose to include the items from their fourth factor (shaping the interaction) in my questionnaire. It is strongly related to the other questions in the survey because this factor has an element of care and psychological safety from learning organizations theory. The items of shaping the interaction are related to trying to make people feel comfortable and create a positive atmosphere during conversations or meetings. I have further used the items from factor one -rapport building in my study. I chose to include this factor because Dietvorst et al. (2009) in their study found this factor to reduce social anxiety related to sales situations, and can thus help strengthen performance related to sales or buying situations. Items from this factor include for example the ability to kindle a small conversation with a supplier or customer.

Building on ToM, the following two hypotheses evolve:

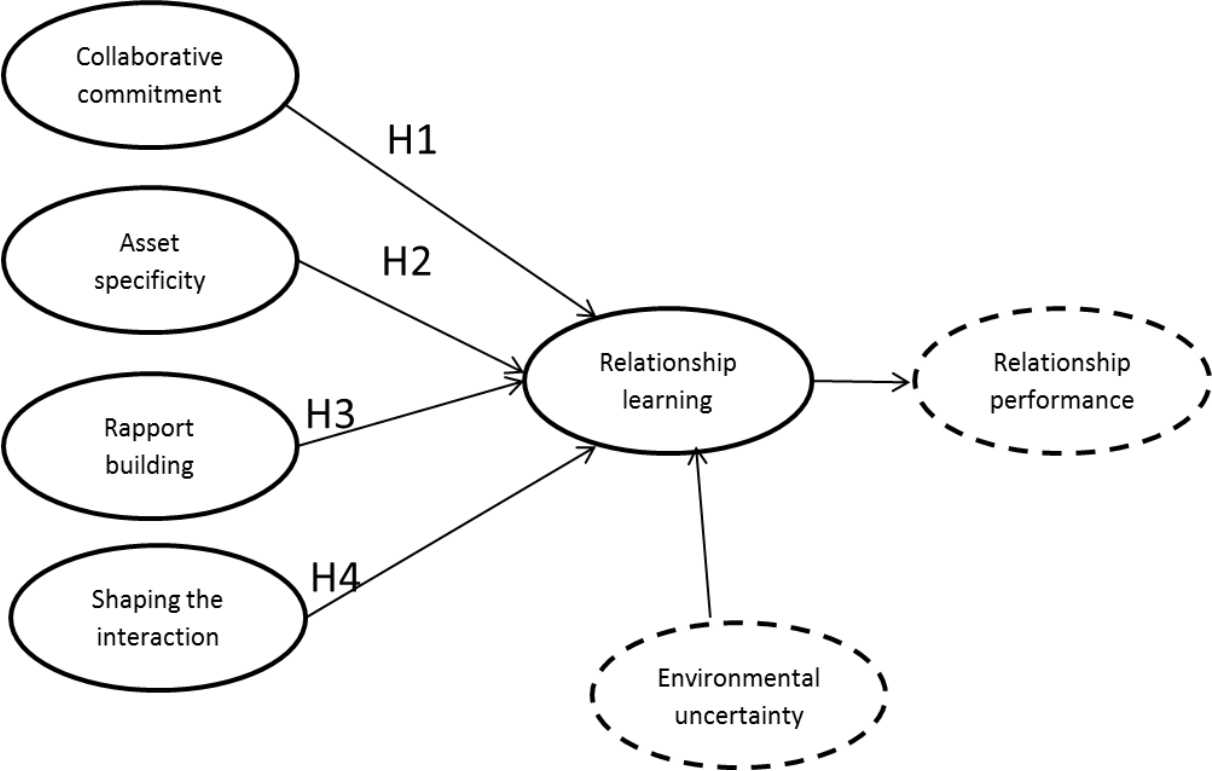
Hypotheses 3: Rapport building skills has a positive relationship with relationship learning.

Hypotheses 4: Ability to shape the interaction has a positive relationship with relationship learning.

In addition to these hypotheses, I control for the effect of environmental uncertainty on relationship learning. Organizations build relationships as a response to environmental turbulence. It is therefore suggested that organizations take part in collaborative learning activities in order to gain control over turbulence in the environment (Selnes & Sallis 2003). I also test the effect of relationship learning on relationship performance, which I assume to be positive.

Figure five below presents the theoretical model of relationship learning, in this study.

Figure 5: Theoretical model of relationship learning



3. Method

3.1 Research design

This thesis is a case study relying on survey data. A case can be either an object of study, or a research design. A case study is characterized by one or a few cases which are studied in-depth and comprehensive and detailed information is gathered over a period of time. Here the case is KDS. Because the response rate was very low for the strategic suppliers (see table 16 for an overview of responses), the main focus throughout the analysis is KDS. Learning is a complex and diverse concept to study so an in-depth case study is more suitable for this kind of research, compared to for instance a survey distributed to multiple companies in different industries. Case studies are typically based on qualitative evidence (observations and in-depth interviews of key informants) (Johannessen et al. 2011). However, considering the hectic schedule of the employees in KDS, and a desire to gain data from several employees, a survey was considered a more suitable data collection method. To ensure validity and reliability of the study it is important to use good and adequate measures (Ringdal 2001). A technique consisting of four steps to avoid bias in the analysis, created by (Bollen 1989).

1. Mold the theoretical definition so that its dimensions and delimits are clear
2. Identify dimensions and underlying variables
3. Create an operational definition that explain how the concept is measured
4. Create a measurement model that couple concepts, variables and indicators

I started the questionnaire development by operationalizing the factors included in the theoretical framework in figure 5. In addition, I measured a number of other variables that would give me a better understanding of the industry context and KDS as a company (see questionnaire in Appendix 1). As noted earlier, similar empirical studies on organizational learning have been conducted previously. The questionnaire was developed by drawing on components from previous studies. Table 2 – 15 shows the origin of the various questions related to part one of the survey. Some questions are exactly the same as the ones used previously by other researchers, and this gives an advantage because these scales are tested in many industrial settings. Some questions are modified to better enhance the context of this study. I divided the questionnaire in two different parts, part one deals with learning organization, part two is related to relationship learning. The reason for dividing the questionnaire in two different parts is that if people who do not have any contact with suppliers receive the survey, they would not have the ability to answer questions regarding suppliers.

3.2 Survey - Part 1- Learning Organization

The learning organization concept consists of three building blocks;

1. A supportive learning environment. The first building block multidimensional construct, which compound four distinguishing dimensions; a supportive learning environment, psychological safety, openness to new ideas and time for reflection
2. Concrete learning processes and practices. This dimension encompasses education and training and information sharing
3. Leadership that reinforces learning

Each of the learning organization dimensions will now be presented in separate tables. All scales are based on existing scales found in the literature.

A supportive learning environment is operationalized through how supportive and helpful the respondent perceives their co-workers and leaders. Part of the scale in table 2 is based on previously work by (Garvin et al. 2008), and relates to the appreciation of differences in a company. The three first items in table 2 is from the National Statistics Omnibus Survey, (Survey March 2007).

Table 2. Items of a supportive learning environment

Items used in this study	Similar or related items
<p>Seven-point scale anchored by “strongly agree” (1) and “strongly disagree (7)</p> <ul style="list-style-type: none"> • I get the help and support I need from my colleagues at work • My managers encourages me at work • I can talk to my managers about something that has upset or annoyed me about work • People are open to alternative ways of getting work done • In my company, differences in opinion are welcome 	<p>Based on National Statistics Omnibus (Survey March 2007), and Garvin et.al (2008)</p> <ul style="list-style-type: none"> • If the work gets difficult, my colleagues will help me (Survey March 2007) • My line manager encourages me at work (Survey March 2007) • I can talk to my line manager about something that has upset or annoyed me about work (Survey March 2007) • In this unit, people are open to alternative ways of getting work done (Garvin, Edmondson et al. 2008) • Differences in opinion are welcome in this unit (Garvin, Edmondson et al. 2008)

Learning goes easier when employees feel comfortable at expressing their thoughts and viewpoints. Fear of that mistakes can be held against you, or fear of asking questions or offering a viewpoint different than of the peers has negative effect on the psychological safety in a company. Psychological safety (table 3) is operationalized as how easy the respondents feel it is to speak about what's on their mind, make mistakes and how eager they are to share experiences with co-workers.

Table 3. Items of psychological safety

Items used in this study	Similar or related items
Seven-point scale anchored by “strongly agree” (1) and “strongly disagree (7) <ul style="list-style-type: none"> • If I make a mistake at work, I feel it is often held against me • I feel eager to share information about what does and doesn't work • I feel it is easy to speak up about what is on my mind 	Based on Garvin et.al (2008) <ul style="list-style-type: none"> • If you make a mistake in this unit, it is often held against you (Garvin, Edmondson et al. 2008) • People I this unit are eager to share information about what does and doesn't work (Garvin, Edmondson et al. 2008) • In this unit, it is easy to speak up about what is on your mind (Garvin, Edmondson et al. 2008)

Openness towards new ideas is important to be able to explore the unknown and take risk. When employees feel their ideas and opinions are welcome it can result in new ideas or new ways of working. Openness to new ideas is operationalized as how open for new approaches and ideas the respondents perceive themselves and their co-workers. The items in table 4 are based on previous work of (Garvin et al. 2008).

Table 4. Items of openness to new ideas

Items used in this study	Similar or related items
Seven-point scale anchored by “strongly agree” (1) and “strongly disagree (7) <ul style="list-style-type: none"> • My managers value new ideas • If I get a new idea, I feel comfortable at sharing it with my managers and colleagues • In my unit we are interested in better ways of doing things • My managers are positive to untried approaches 	Based on Garvin et.al 2008 <ul style="list-style-type: none"> • In this unit, people value new ideas (Garvin et al. 2008) • Unless an idea has been around for a long time, no one in this unit wants to hear it (Garvin et al. 2008) • In this unit, people are interested in better ways of doing things (Garvin et al. 2008) • In this unit, people often resist untried approaches (Garvin et al. 2008)

Reflection is a great way to learn from mistakes as well as from best practice. The more you know about a problem and how to solve it, the greater is the chance for not making the same mistake again. Time for reflection is operationalized through measuring how stressed and busy the respondents feel, and if they have enough time for improvement and review of their work. The items in table 5 are based on previous work of (Garvin et al. 2008)

Table 5. Items of time for reflection

Items used in this study	Similar or related items
Seven-point scale anchored by “strongly agree” (1) and “strongly disagree (7) <ul style="list-style-type: none"> • I often feel stressed at work • I am too busy to invest time in improvement • I sometimes feel the time pressure gets in the way of doing a good job • Despite the workload, I find time to review how the work is going 	Based on Garvin et.al (2008) <ul style="list-style-type: none"> • People in this unit are overly stressed • In this unit people, are too busy to invest time in improvement (Garvin et al. 2008) • In this unit, schedule pressure gets in the way of doing a good job (Garvin et al. 2008) • Despite the workload, people in this unit find time to review how the work is going (Garvin et al. 2008)

Training and education is important to develop both new and established employees. The scale in table 6 is based on previous work of (Garvin et al. 2008).

Table 6. Items of education and training

Items used in this study	Similar or related items
Seven-point scale anchored by “strongly agree” (1) and “strongly disagree (7) <ul style="list-style-type: none"> • I have time available for education and training • I receive periodic training and updating • I receive training when new initiatives are launched 	Based on Garvin et.al (2008) <ul style="list-style-type: none"> • In this unit, time is made available for education and training (Garvin et al. 2008) • Experienced employees in this unit receive periodic training and training updates (Garvin et al. 2008) • Experienced employees receive training when new initiatives are launched (Garvin et al. 2008)

Knowledge must be shared in systematic structured ways to give maximum impact. The sharing process can take place among individuals, groups, or whole organizations. The items in table 7 is based on previous studies by (Garvin et al. 2008).

Table 7. Items of information sharing

Items used in this study	Similar or related items
Seven-point scale anchored by “strongly agree” (1) and “strongly disagree (7) <ul style="list-style-type: none"> • In my company we regularly share information with networks of experts • In my company we regularly conduct post-audits and after-action reviews • In my company we quickly and accurately communicate new knowledge to key decision makers 	Based on Garvin et.al (2008) <ul style="list-style-type: none"> • This unit regularly share information with networks of experts within the organization (Garvin et al. 2008) • This unit regularly conduct post-audits and after-action reviews (Garvin et al. 2008) • This unit quickly and accurately communicate new knowledge to key decision makers (Garvin et al. 2008)

Leadership behavior has high influence on learning in the organization. The items measuring leadership in this study is presented in table 8. Leadership is operationalized by how the respondents perceive their leaders behavior.

Table 8. Items of leadership that reinforces learning

Items used in this study	Similar or related items
Seven-point scale anchored by “strongly agree” (1) and “strongly disagree (7) <ul style="list-style-type: none"> • My managers listen attentively in discussions • My managers invite input from others in discussions • My managers ask probing questions in discussions • My managers never criticize views different from their own in discussions 	Based on Garvin et.al (2008) <ul style="list-style-type: none"> • My managers listen attentively (Garvin et al. 2008) • My managers invite input from others in discussions (Garvin et al. 2008) • My managers ask probing questions (Garvin et al. 2008) • My managers criticize views different from their own (Garvin et al. 2008)

3.3 Part 2- Relationship learning

The items measuring relationship learning, are presented in table 9, the construct is operationalized as an ongoing activity between the buyer and the supplier, aimed at sharing information related to experience, problems and strategies.

Table 9. Items of relationship learning

Items used in this study	Similar or related items
<p>Seven-point scale anchored by “strongly agree” (1) and “strongly disagree (7)</p> <ul style="list-style-type: none"> • Our companies exchange information on successful and unsuccessful experiences with products exchanged in the relationship • Our companies exchange information as soon as possible of any unexpected problems • Our companies exchange information on changes related to our strategies and policies • Our companies exchange information that is sensitive for both parties, such as financial performance and company know-how • We frequently evaluate and, if needed, update information about the relationship stored in our electronic databases • We have a lot of face-to-face contact in this relationship 	<p>Based on Selnes and Sallis (2003)</p> <ul style="list-style-type: none"> • Our companies exchange information on successful and unsuccessful experiences with products exchanged in the relationship (Selnes & Sallis 2003) • Our companies exchange information as soon as possible of any unexpected problems (Selnes & Sallis 2003) • Our companies exchange information on changes related to our strategies and policies(Selnes & Sallis 2003) • Our companies exchange information that is sensitive for both parties, such as financial performance and company know-how(Selnes & Sallis 2003) • We frequently evaluate and, if needed, update information about the relationship stored in our electronic databases(Selnes & Sallis 2003) • We have a lot of face-to-face contact in this relationship (Selnes & Sallis 2003)

Relationship performance, presented in table 10, is related to the outcome of relationship learning and collaboration. To what extent do the two companies feel the relationship is worth maintaining, based on the results it has provided them? Improved flexibility, quality and ability to innovate are among the performance variables.

Table 10. Items of relationship performance

Items used in this study	Similar or related items
<p>Seven-point scale anchored by “strongly agree” (1) and “strongly disagree (7)</p> <ul style="list-style-type: none"> • The relationship with the other company has resulted in lower logistics cost • The relationship with the other company has resulted in better product quality • The relationship has a positive effect on our ability to develop successful new products/processes • Collaboration with this supplier has positively contributed to cutting costs • Investment of resources in the relationship, such as time and money, have paid off very well • Flexibility to handle unforeseen fluctuations in demand has been improved because of the relationship 	<p>Based on Selnes and Sallis (2003)</p> <ul style="list-style-type: none"> • The relationship with the other company has resulted in lower logistics cost (Selnes & Sallis 2003) • The relationship with the other company has resulted in better product quality (Selnes & Sallis 2003) • The relationship has a positive effect on our ability to develop successful new products (Selnes & Sallis 2003) • Collaboration with this supplier has positively contributed to cutting costs (Selnes & Sallis 2003) • Investment of resources in the relationship, such as time and money, have paid off very well (Selnes & Sallis 2003) • Flexibility to handle unforeseen fluctuations in demand has been improved because of the relationship (Selnes & Sallis 2003)

Collaborative commitment deals with the level of commitment to collaborate in the focal relationship, and the items from this scale are presented in table 11. To what extent do the companies involved develop common goals, and are such goals implemented in the daily work?

Table 11. Items of collaborative commitment

Items used in this study	Similar or related items
<ul style="list-style-type: none"> • We discuss company goals with the other party in this relationship • We develop these goals through joint analysis of potentials • We implement these goals in day-to-day work? 	Based on Selnes and Sallis (2003) <ul style="list-style-type: none"> • To what degree do you discuss company goals with the other party in this relationship? • To what degree are these goals developed through joint analysis of potentials? • To what degree are these goals implement in day-to-day work?

Asset-specific investments are investments and adaptations dedicated to a specific relationship. The items from the scale measuring asset-specific investments are presented in table 12.

Table 12. Items of asset specificity

Items used in this study	Similar or related items
Seven-point scale anchored by “strongly agree” (1) and “strongly disagree” (7) <ul style="list-style-type: none"> • The company I work in, have made significant investments dedicated to this relationship • The company I work in, have made several adjustments to adapt to the other company’s technological norms and standards 	Based on Selnes and Sallis (2003) <ul style="list-style-type: none"> • We have made significant investments dedicated to this relationship (Selnes & Sallis 2003) • We have made several adjustments to adapt to the other party’s technological norms and standards (Selnes & Sallis 2003)

Rapport building is the first of the two ToM scales. The scale presented in table 13 aims at capturing the quality of the interaction between a buyer and a supplier. Rapport building skills are operationalized through the individual's ability to start a conversation on a general topic and talk to a supplier or customer about something non-business related.

Table 13. Items of rapport building

Items used in this study	Similar or related items
<p>Seven-point scale anchored by “strongly agree” (1) and “strongly disagree (7)</p> <ul style="list-style-type: none"> • When I am with a supplier (e.g in the elevator before a meeting), I can easily kindle a small conversation • I find it easy to talk to a supplier about topics that are not business related • When I am at a business meeting or a reception, I can easily start off a conversation on a general topic 	<p>Based on Dietvorst et.al (2009)</p> <ul style="list-style-type: none"> • When I am with a customer (e.g in the elevator before a sales meeting), I can easily kindle a small conversation (Dietvorst 2009) • I find it difficult to talk to a customer about topics that are not business related (Dietvorst 2009) • When at a business meeting or a reception, I can easily start off a conversation on a general topic such as the weather (Dietvorst 2009)

Shaping the interaction is related to the individual ability to spark positive atmosphere in meetings or conversations. The items measuring this construct are presented in table 14.

Table 14. Items of shaping the interaction

Items used in this study	Similar or related items
<p>Seven-point scale anchored by “strongly agree” (1) and “strongly disagree (7)</p> <ul style="list-style-type: none"> • I always try to positively influence the atmosphere in a meeting or conversation • I can easily make people feel more comfortable during a meeting or conversation • I can easily act in ways that gives a meeting or conversation a positive twist 	<p>Based on Dietvorst et.al (2009)</p> <ul style="list-style-type: none"> • I make sure that I positively influence the atmosphere in a sales conversation (Dietvorst 2009) • I can easily make people feel more comfortable during a sales conversation (Dietvorst 2009) • I can easily act in ways that gives a sales conversation a positive twist (Dietvorst 2009)

Environmental turbulence describes the nature of the environment the business operates in. If the environment is characterized by for instance competitors making aggressive market moves, it can put increased pressure on the company. Environmental turbulence thus refers to the forces in the environment in which the companies have little or no control over. Changes in these forces can have large impact on the performance of a relationship. Environmental turbulence is operationalized through changes in end-user needs, competitor moves, technological change -and breakthroughs. The scale in table 15 is based on previous work by (Selnes & Sallis 2003).

Table 15. Items of environmental uncertainty

Items used in this study	Similar or related items
<p>Seven-point scale anchored by “strongly agree” (1) and “strongly disagree (7)</p> <ul style="list-style-type: none"> • End-user needs and preferences change rapidly in our industry • The competitors in our industry frequently make aggressive moves to capture market share • It is very difficult to forecast where the technology will be in the next 4-5 years in our industry • In recent years, a large number of new product ideas have been made possible through technological breakthroughs in our industry 	<p>Based on Selnes and Sallis 2003</p> <ul style="list-style-type: none"> • End-user needs and preferences change rapidly in our industry (Selnes and Sallis 2003) • The competitors in our industry frequently make aggressive moves to capture market share (Selnes and Sallis 2003) • It is very difficult to forecast where the technology will be in the next 2-3 years in our industry (Selnes and Sallis 2003) • In recent years, a large number of new product ideas have been made possible through technological breakthroughs in our industry (Selnes and Sallis 2003)

A 7-point “Likert-scale” ranging from “strongly disagree” to “strongly agree” was used on all indicators. There are a number of possible response scales options available; 1-to-5, 1-to-10 and 0-10. Response scales are often used when measuring feelings or attitudes (Ringdal 2001). There is an ongoing debate in the literature regarding which scale is the most optimal to use. The advantage with using a 7-point scale instead of a 5-point scale is that the 7-point scale gives a more nuanced answer. Some analysis (e.g correlation) methods require the use of scales with values from low to high.

When questions are short and easy to understand, it saves time and frustration for the respondent (Ringdal 2001). If the respondent does not understand the questions, they cannot answer correctly, therefore the questions that were long or had very complex formulations from previous scales was avoided. The order of the questions in a survey is important, and consequently (Ringdal 2001), the survey should start with more easy, neutral or harmless questions. I thus started with general questions and continued with more specific. I first started with questions related to environmental turbulence, but after feedback from one of the persons testing the scale about these questions being difficult for someone to answer, and that people could easily “fall out”. I therefore decided to start the survey with questions related to the internal learning environment instead. Please see appendix 1 for the entire questionnaire.

3.4 Data gathering

Data gathering started on May 4th 2012 and ended in June 15th 2012. A pilot test was first conducted to verify the questionnaire. My supervisors and a couple of people in KDS agreed to test the survey and give feedback accordingly. The purpose of the pre-testing was to detect linguistic errors and to remove redundant questions. The survey was modified according to received feedback. The questionnaire was created in Questback, an online survey-program. There are several advantages with using Questback; one of them is that you have the option to hide the identity of the respondents. I used this option because it ensures that Questback holds no track of IP addresses (or e-mails). It was not possible for me to see any e-mail addresses of the respondents. I conferred with NSD (Norsk Samfunnsvitenskapelig Datatjeneste) to see if I should apply for an approval from prior to sending out the survey. But since I had no questions that can be traced back to who answered (e.g age, gender), I did not need a NSD approval. I only had one question which was regarded sensitive - “how long has the relationship you had in mind when answering lasted”, and I therefore removed this item. Another advantage with Questback is that you can automatically export the data to the SPSS analysis program. This eliminates the chance of typing errors and saves time.

The questionnaire was sent out to approximately 90 persons in the technical unit in the Missile Systems department in KDS. Two reminder e-mails were sent to KDS during the data collection to ensure adequately number of responses. June 1st the survey was also sent out to people in the quality and buying unit in KDS, due to low response rates. I do not know exactly how many more employees the survey was sent to on June 1st, and therefore it is impossible for me to calculate a response rate. After closing the survey on June 15th, a total of 55 people from KDS had answered part one – learning organization, while 31 respondents had answered both part one and part two (relationship learning). The reason for dividing in two parts was to ensure that only people that have contact with suppliers answered.

In addition, six of KDS’s suppliers were asked to participate in the survey, including; Nammo Raufoss, Natech, Kitron, Eidel from the Norwegian supplier side, and Pacific Scientific and Ausco from the foreign supplier side. All the chosen suppliers are regarded strategic suppliers, which means KDS are highly depend upon their performance in order to deliver their products.

Together with the e-mail sent to the suppliers I attached an introduction letter, the letter was written together with the procurement manager in KDS and aimed at making people interested in the topic and trigger them to participate in the survey. After approximately two weeks I

decided to also contact two more suppliers due to a very low response rate; Berget and Chemring. One reminder e-mail was sent to each of the participating supplier companies in an attempt to get more responses.

In table 16 the participating suppliers are presented, some background information on what services and products they offer, and how many responses I got from each of the companies.

Table 16. Strategic suppliers

Supplier	Established	Location	Number of employees	Business area	Survey responses
Eidel	1966	Eidsvoll, Norway	16-20	RCDS, RCS, Telemetry systems, Space, SVS, System engineering	3
Kitron	1980	Arendal	320	Electronics	3
Berget	1970	Notodden	48	High precision mechanics	3
Nammo Raufoss	1896	Raufoss	650	Ammunition, M72 and Sub-Caliber training systems and rocket motors	3
Natech	2005	Narvik	60	Electronics, mechanics and electro-optics	2
Chemring Energetics	Chemring Energetics : 2002 (Chemring Group: 1905)	UK	306	Mechanical/Pyro-mechanical devices, propellants, rocket motors, weapon sub-systems, energetic material and devices	1
Ausco	1957	US	28	Precision fluid control valves, restrictors & manifolds	1
Pacific Scientific	1975	US	10 000 +	Energetic materials, pyrotechnic, safety devices, electronic and laser ordnance firing systems	1

3.5 Measurement validation

3.5.1 Data inspection

Since the data is directly transferred from Questback to SPSS it is a small chance of getting any errors, too high or low values since this goes automatically. Still, I checked the data in case there were errors or missing values in the dataset.

Question 9, “Do you have regularly contact with one or more suppliers of your company?”, separated part one and two in the survey. Respondents who answered yes on Q9 proceeded to part two of the survey about relationship learning, respondents who answered no were finished. I therefore treated the 55 responses on part one and the 31 responses on part two as two separate datasets when analyzing. The questionnaire had some reverse coded questions, which I reversed before starting to analyze.

There were no suspicious values detected since a 7-point scale was used. There was one open question in part two “Do you have any comments on how we can improve learning in relationship with suppliers?”. This question was unfortunately only answered by one person, and the suggestion was to “include stakeholders in the process towards a supplier as well as during the contract period”.

3.5.2 Data description

It is important to understand how the data is distributed to get a better understanding of the results from further analyses and to choose appropriate method of analysis. Distributions are presented in table 17, 18 and 19.

The skewness value provides information about the symmetry of the distribution. Kurtosis indicates the “peakedness” of the distribution. If the skewness value has positive values it indicates a positive skew, which means that scores are clustered to left at the low values. Negative skewness values indicate a clustering at the right high end of the values (Pallant 2010). The requirements for further analysis are not fulfilled if the samples skewness > 2 and kurtosis > 4 . This indicates then that either we asked the wrong questions, the sample was too small or the sample could not give adequate variance in their answers.

Table 17. Description of distributions, part one – Learning Organization, KDS

Factor	Min	Max	Mean	Std.dev	Skewness	Kurtosis
Supportive environment	1	7	5,03	1,19	-1,0	0,95
Psychological safety	1	7	4,95	1,17	-0,64	1,04
Openness new ideas	1	7	5,08	1,28	-1,0	0,97
Time for reflection	1	7	3,47	1,37	0,34	-0,18
Education and training	1	7	3,77	1,3	-0,16	-0,05
Information sharing	1	7	3,52	1,16	-0,19	-0,59
Leadership	1	7	4,95	1,09	-0,78	0,88

Table 18. Description of distributions, part two– Relationship Learning, KDS

Factor	Min	Max	Mean	Std.dev	Skewness	Kurtosis
Relationship learning	1	7	4,35	0,98	-0,07	-0,26
Relationship performance	1	7	5,06	0,83	0,08	-0,02
Collaborative commitment	1	7	3,43	1,41	-0,49	-0,09
Asset specificity	1	7	3,79	1,54	-0,1	-1,11
Rapport building	1	7	5,53	1,2	-0,86	0,38
Shaping the interaction	1	7	5,33	0,88	-0,35	0,39
Environmental uncertainty	1	7	4,1	1,08	-0,52	0,82

Table 19. Description of distributions, part two– Relationship Learning, Strategic Suppliers

Supplier:	Number of responses:	Mean value Relationship learning	Standard deviation	Mean value Relationship performance	Standard deviation
Eidel	3	5,4	0,53	4,94	0,92
Berget	3	5,5	0,73	5,78	1,02
Kitron	3	4,07	1,29	4,56	0,42
Nammo	2	5,53	0,64	5,78	1,02
Natech	1	5,4		4,83	
Pacific Scientific	1	5,6		5,83	
Chemring	1	5,2		5,33	
Ausco	1	7		7	

3.6 Validity

Construct validity refers to whether we actually measure the theoretical construct we intend to measure (Ringdal 2001). An internal consistency among the variables is needed so we can be confident that the variables measure the same underlying factor (Sørebø 2009)

Factor analysis is primary used for two reasons:

1. Data reduction method
2. Exploring the theoretical structure of the constructs

In this study I will use the exploratory factor analysis to affirm that the variables represent the corresponding concept. However, due to the small sample size of this study, the results should be interpreted with caution.

Two main issues can determine if a factor analysis is suitable; the strength of the relationship among the items and the sample size. In small samples the correlation coefficients between the items are less reliable. Thus, factors from small samples do not have the same generalizability as factors from big samples (Pallant 2010). However, if several factor loadings $> 0,80$ can be found in the analysis, a small sample can be considered sufficient (Tabachnick & Fidell 2007).

Each factor is tested individually, and in this study I used the maximum likelihood test. Factor loadings show the strength of the correlation between a variable (item) and the factor. Factor loadings should be greater than $\pm 0,30$, to be considered valuable. Loadings greater than $\pm 0,40$ are more meaningful, while loadings greater than $\pm 0,50$ are practical significant measure for the variable. The confirmatory factor analysis is a more sophisticated technique used to test hypotheses or theories regarding the structure underlying a set of variables (Pallant 2010). Factor loadings are presented in table 20.

Construct validity in this thesis is secured through the use of previously tested scales. The indicators I use are proven in earlier studies to measure for example relationship learning.

Criterion validity concerns the relationship between scale scores and some specified, measurable criterion (Pallant 2010). In the survey there are several questions measuring each indicator. Relationship learning and relationship performance have more questions than for instance communication.

External validity refers to the level of generalization. Since the total number of respondents was low the generalization of the findings are very limited. The survey was distributed to

people in different positions, and it was completely optional to answer. This can imply that people who answered are interested in the field, but at the same time sending it to people in different positions gives a broad feedback. Even though each respondent can only answer out from personal thoughts, given the broad group of people participating, this will hopefully give a fair representation of each firm.

To test if the factor analysis can be considered appropriate two statistical measures are used: Bartlett's test of sphericity (Bartlett 1954), which should be significant ($p < .05$) and the Kaiser-Meyer-Olkin (KMO) measure of the samples adequacy. KMO measures strength of the inter-correlations among the items. The KMO index ranges from 0 to 1 where 0,6 is considered the minimum value for a good factor analysis (Pallant 2010). In this sample all Bartlett's test values had a significance value (Sig.) $< .05$. The results from the KMO test are also meeting the minimum requirement of $> 0,6$. The results from the KMO test is presented in table 17.

The divergent validity has the task of assuring that all indicators are measuring the construct they intended to measure. There should be only a few cross-loadings on other constructs (Ringdal 2001). However, due to small sample size I was unable to test the divergent validity for this dataset.

3.7 Reliability

The purpose of reliability testing is to find out if the measure-model is stable and if it can be used as a scale. If it is, it is possible to add up answers for all questions measuring the same variable. Reliability refers to what extent it is possible to obtain the same results if the same study is repeated. Reliability is affected by the quality control of the data and it is important to detect errors or missing values as soon as possible. Reliability can be examined through an analysis in SPSS which evaluates the internal consistency for each construct separately.

Cronbach's alpha is the most commonly used measure for reliability. Cronbach's alpha should be $> 0,7$, to ensure adequate internal consistency and reliability for a given variable (Sørebø 2009). A high Cronbach's indicates that repeated measures with the same survey would give equal results. The higher correlation between the internal factors, the higher value will Cronbach's alpha have (Ringdal 2001).

Following Ringdal (2001), there are two other measures of reliability; the first is civic source criticism, which implies that when you use data from research conducted of other researchers; you must look at how they collected their data and look for potential problems with accuracy.

The second test is the test-retest technique. Here you test several times with the same measuring instrument. This can be both expensive and take long time. In my thesis this would imply sending the same survey out two times, something I did not have the resources to do within the available time.

Table 20. Factor loadings, Cronbach’s alpha and Kaiser-Meyer-Olkin, for primary items.

Construct	Source	Cronbach’s alpha & KMO	Items	Factor loadings
Supportive environment	National Statistics Omnibus Survey and (Garvin et al. 2008)	Cronbach’s alpha: 0,850 KMO: 0,752	I get the help and support I need from my colleagues at work	0,674
			My managers encourages me at work	0,791
			I can talk to my managers about something that has upset or annoyed me about work	0,542
			People are open to alternative ways of getting work done	0,784
			In my company, differences in opinion are welcome	0,860
Psychological safety	(Garvin et al. 2008) Seven-point scale anchored by “strongly agree” (1) and “strongly disagree” (7)	Cronbach’s alpha: 0,774 KMO: 0,556	If I make a mistake at work, I feel it is often held against me	0,465
			I feel eager to share information about what does and doesn’t work	0,722
			I feel it is easy to speak up about what is on my mind	0,999
Openness new ideas	(Garvin et al. 2008) Seven-point scale anchored by “strongly agree” (1) and “strongly disagree” (7)	Cronbach’s alpha: 0,884 KMO: 0,825	My managers value new ideas	0,874
			If I get a new idea, I feel comfortable at sharing it with my managers and colleagues	0,812
			In my unit we are interested in better ways of doing things	0,835
			My managers are positive to untried approaches	0,869
Time for reflection	(Garvin et al. 2008) Seven-point scale anchored by “strongly agree” (1) and “strongly	Cronbach’s alpha: 0,833 KMO: 0,773	I often feel stressed at work	0,766
			I am too busy to invest time in improvement	0,809
			I sometimes feel the time pressure gets in the way of	0,801

	disagree" (7)		doing a good job	
Education and training	(Garvin et al. 2008) Seven-point scale anchored by "strongly agree" (1) and "strongly disagree" (7)	Cronbach's alpha: 0,741 KMO: 0,686	I have time available for education and training	0,763
			I receive periodic training and updating	0,681
			I receive training when new initiatives are launched	0,703
Information sharing	(Garvin et al. 2008) Seven-point scale anchored by "strongly agree" (1) and "strongly disagree" (7)	Cronbach's alpha: 0,799 KMO: 0,678	In my company we regularly share information with networks of experts	0,763
			In my company we regularly conduct post-audits and after-action reviews	0,883
			In my company we quickly and accurately communicate new knowledge to key decision makers	0,650
Leadership	(Garvin et al. 2008) Seven-point scale anchored by "strongly agree" (1) and "strongly disagree" (7)	Cronbach's alpha: 0,733 KMO: 0,774	My managers listen attentively in discussions	0,836
			My managers invite input from others in discussions	0,922
			My managers ask probing questions in discussions	0,802
			My managers never criticize views different from their own in discussions	0,451
Relationship learning	(Selnes & Sallis 2003) Seven-point scale anchored by "strongly agree" (1) and "strongly disagree" (7)	Cronbach's alpha: 0,702 KMO: 0,898	Our companies exchange information on successful and unsuccessful experiences with products exchanged in the relationship	0,973
			Our companies exchange information as soon as possible of any unexpected problems	0,957
			Our companies exchange information on changes related to our strategies and policies	0,909
			Our companies exchange information that is sensitive for both parties, such as financial performance and company know-how	0,892
			We frequently evaluate and, if needed, update information about the relationship stored in	0,864

			our electronic databases	
Relationship performance	(Selnes & Sallis 2003) Seven-point scale anchored by “strongly agree” (1) and “strongly disagree” (7)	Cronbach’s alpha: 0,799 KMO: 0,942	The relationship with the other company has resulted in lower logistics cost	0,787
			The relationship with the other company has resulted in better product quality	0,734
			The relationship has a positive effect on our ability to develop successful new products/processes	0,575
			Collaboration with this supplier has positively contributed to cutting costs	0,813
			Investment of resources in the relationship, such as time and money, have paid off very well	0,932
			Flexibility to handle unforeseen fluctuations in demand has been improved because of the relationship	0,566
Collaborative commitment	(Selnes & Sallis 2003) Seven-point scale anchored by “strongly agree” (1) and “strongly disagree” (7)	Cronbach’s alpha: 0,733 KMO: 0,770	We discuss company goals with the other party in this relationship	0,857
			We develop these goals through joint analysis of potentials	0,746
			We implement these goals in day-to-day work?	0,777
Asset-specificity	(Selnes & Sallis 2003) Seven-point scale anchored by “strongly agree” (1) and “strongly disagree” (7)	Cronbach’s alpha: 0,702 KMO: 0,550	The company I work in, have made significant investments dedicated to this relationship	0,469
			The company I work in, have made several adjustments to adapt to the other company’s technological norms and standards	0,469
Rapport building	(Selnes & Sallis 2003) Seven-point scale anchored by “strongly agree” (1) and “strongly disagree” (7)	Cronbach’s alpha: 0,848 KMO: 0,700	When I am with a supplier (e.g in the elevator before a meeting), I can easily kindle a small conversation	0,595
			I find it easy to talk to a supplier about topics that are not business related	0,999
			When I am at a business meeting or a reception, I can easily start off a conversation	0,940

			on a general topic	
Shaping the interaction	(Selnes & Sallis 2003) Seven-point scale anchored by “strongly agree” (1) and “strongly disagree” (7)	Cronbach’s alpha: 0,813 KMO: 0,767	I always try to positively influence the atmosphere in a meeting or conversation	0,694
			I can easily make people feel more comfortable during a meeting or conversation	0,999
			I can easily act in ways that gives a meeting or conversation a positive twist	0,848
Environmental uncertainty	(Selnes & Sallis 2003) Seven-point scale anchored by “strongly agree” (1) and “strongly disagree” (7)	Cronbach’s alpha: 0,727 KMO: 0,752	End-user needs and preferences change rapidly in our industry	0,514
			The competitors in our industry frequently make aggressive moves to capture market share	0,448
			It is very difficult to forecast where the technology will be in the next 4-5 years in our industry	0,740
			In recent years, a large number of new product ideas have been made possible through technological breakthroughs in our industry	0,820

Item six from the relationship learning scale “we have a lot of face-to-face contact” was removed because it had a factor loading on 0,164. All the other items in the relationship learning scale are related to learning through exchange of information. Time for reflection consisted of four indicators. The three first items are measuring stress, but the fourth item “despite the workload I find time to review how the work is going”, is measuring how good you are to balance between working and reviewing. I decided to delete the fourth item from this scale (factorloading -0,451). New construct consist of three items. All indicators now load on the same factor.

In order to treat the various items measuring the same construct as one value, I calculated the items into a summated scale for each factor, before further analysis was conducted.

4 Results and analysis

4.1 Part 1: Learning organization

To describe the learning organization at KDS, I first give an overview of the results in table 21, based on the summated scales. I then proceed to pointing out some of the most interesting findings related to some of the individual item in the summated scales.

I grouped answers to the survey from 1-2 low, 3-5 medium and 6-7 high. Please bear in mind that the medium category consists of three answer options, while the other groups have two.

Table 21. Categorized distributions, Learning Organization.

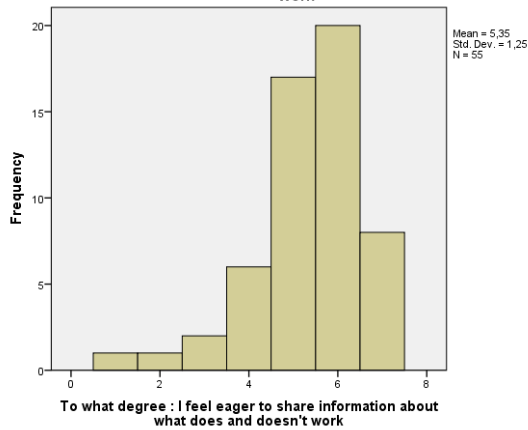
Factor:	Low (1-2)	Medium(3-5)	High (6-7)
Building block 1:			
Supportive environment	9,1 %	36,1 %	39,4 %
Psychological safety	5,5 %	48,7 %	45,7 %
Openness new ideas	6,9 %	44,8 %	48,4 %
Time for reflection	29,7 %	54,6 %	15,7 %
Building block 2:			
Education/training	26,7 %	57,5 %	15 %
Information sharing	30,4 %	64 %	5,6 %
Building block 3:			
Leadership	6,9 %	54,2 %	36,6 %

Building block one – creating a supportive learning environment

The respondents seem quite pleased with the support they get from colleagues, and they also feel encouraged by their managers. Mean value for this scale is 5,03. Almost seventy percent answered in the medium category regarding how open they are to alternative ways of working, which is why the medium and high group is about the same size for the first factor.

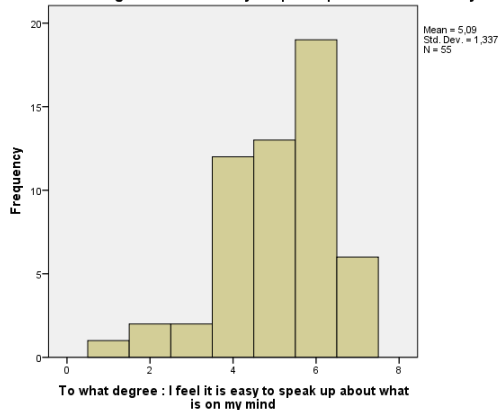
Psychological safety had a mean value of 4,95 on the summated scale. This indicates that the psychological safety is relatively high in KDS. People are eager to share experiences and few feel mistakes are held against them.

To what degree : I feel eager to share information about what does and doesn't work



The item measuring how eager the employees are at sharing their good and bad experience with colleagues, received a very high mean value (5,35).

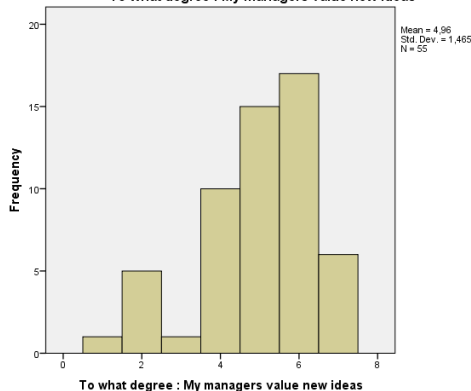
To what degree : I feel it is easy to speak up about what is on my mind



A mean value of 5,09 on this item indicates that people find it easy to say what they think and are not afraid to share their thoughts with co-workers.

Openness to new ideas received a mean value of 5,08 indicating that the respondents are relatively open for new ideas. This indicates that overall KDS has a positive attitude towards new ideas and new ways of working. Many of the respondents say they are very comfortable with sharing ideas with both managers and colleagues.

To what degree : My managers value new ideas

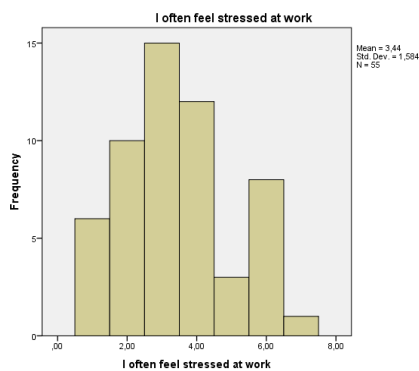


The first item in this scale is measuring to what extent the employees feel their leaders value new ideas. A high mean value of 4,96, indicates that new ideas are appreciated and valued in KDS.

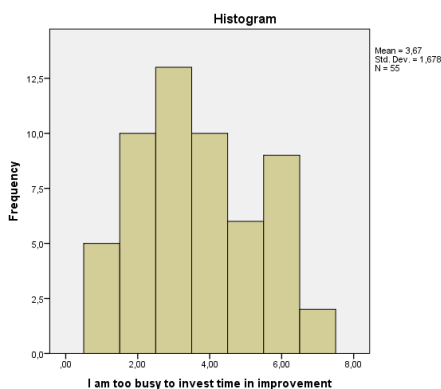


The highest mean value in the summated scale – Openness to new ideas, (5,47), is found on the third item measuring how interested are your unit in better ways of working.

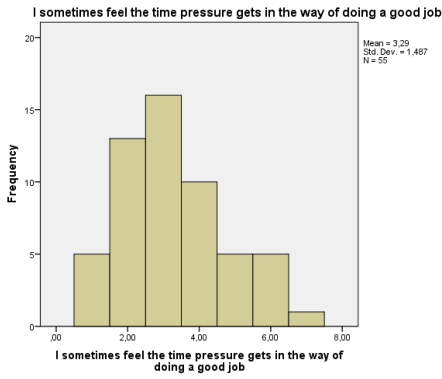
Time for reflection had a mean value of 3,47, this is the lowest mean value in part one of the survey. All three items in this scale was reversed before analyzed, this is because high values on these questions (unless reversed) would give negative indications. If you have a supportive environment - stress is not necessarily “bad” for a company. Some stress is likely to occur due to the context of the industry in which the company operates. The defence industry handles highly complex products and is a highly dynamic industry.



The first item in this scale measures how stressed the employees are. A mean value of 3,44 indicate that some respondents feel a relatively high level of stress at work.



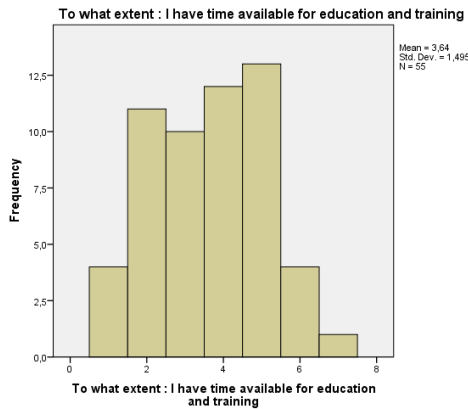
The second item in this scale “I am too busy to invest time in improvement”, has a mean value of 3,67. Indicating that some respondents feel they have little time available for improvement.



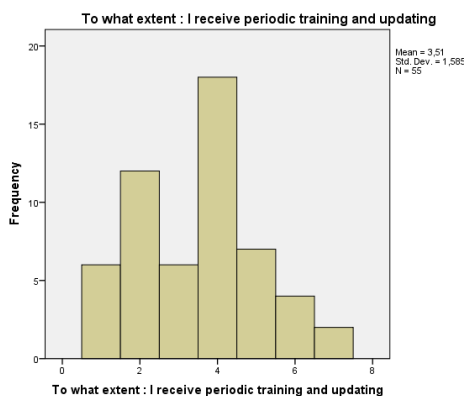
The next item – “I sometimes feel the time pressure gets in the way of doing a good job” has a mean value of 3,29. This indicates that several respondents feel time pressure has a negative impact on their ability to deliver high quality products or services.

Building block two – concrete learning processes and practices

Education and training had one of the lowest mean values in part one of the survey (3,77). The respondents are the least satisfied with the extent of periodic training they receive.

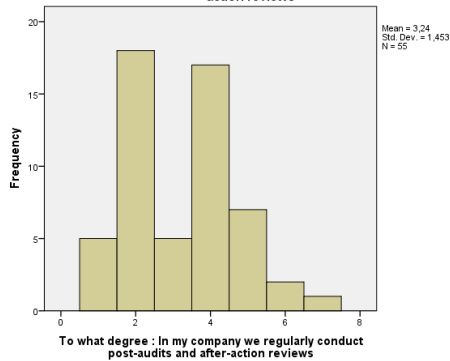


The first item shows that the respondents feel they have relatively little time available for education and training.



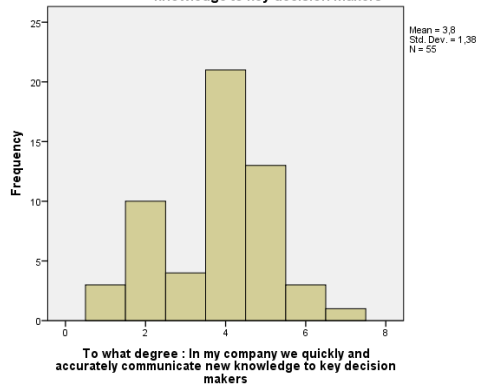
The second item “I receive periodic training”, has 32,7 % of the answers in the “low” group. That is one of the highest scores in that category throughout the entire survey.

To what degree : In my company we regularly conduct post-audits and after-action reviews



Information sharing had the second lowest mean value in part one of the survey (3,52). This indicates that KDS have potential for improvement in the area of information sharing. This item shows us that KDS do not conduct post-audits very often.

To what degree : In my company we quickly and accurately communicate new knowledge to key decision makers



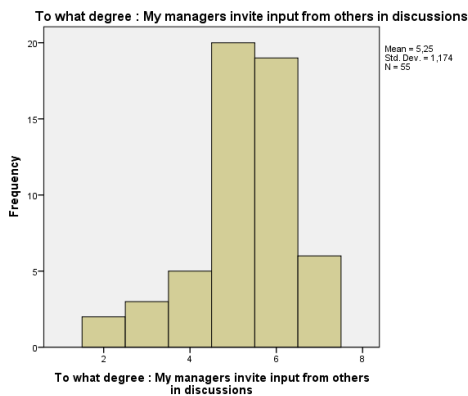
The third item has a mean value of 3,8 thus indicating that the processes of communicating new knowledge to key decision makers is an area where KDS have potential for improving their performance.

Building block three – leadership that reinforces learning

Leadership had a mean value of 4,95. Overall the respondents seem very pleased with the way their leaders act. Only 6,9 % of the answers fall into the “low” category here.



The first item – “My managers listen attentively in discussions”, has a mean value of 4,96. This indicates that leaders in KDS are good listeners during discussions.



The second item has a mean value of 5,25, this shows that leaders in KDS score very high on their ability to invite different inputs in discussions.

4.2 Part 2: Relationship learning

To describe the relationship learning in KDS, I first give an overview of the results in table 22 based on the summated scales. I then proceed to pointing out some of the most interesting findings related to some of the individual item in the summated scales.

I grouped answers to the survey from 1-2 low, 3-5 medium and 6-7 high. Please bear in mind that the medium category consists of three answer options, while the other groups have two.

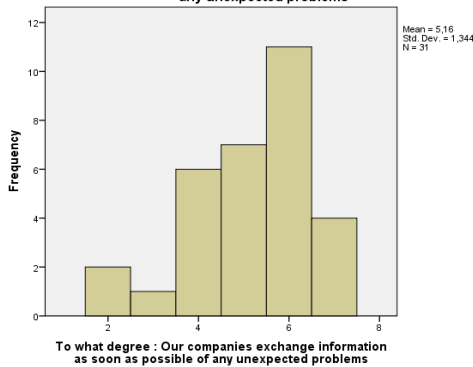
The percent is for the summated scale.

Table 22. Categorized distributions, Relationship Learning.

Factor:	Low (1-2)	Medium(3-5)	High (6-7)
Relationship learning	13,6 %	56,2 %	30,3 %
Relationship performance	5,4 %	58,1 %	36,6 %
Collaborative comittment	26,9 %	54,9 %	18,3 %
Asset-specific investments	29,1 %	26,6 %	14,5 %
Rapport building	5,4 %	34,4 %	60,2 %
Shaping the interaction	3,2 %	53,7 %	43 %
Environmental uncertainty	15,1 %	60,2 %	24,7 %

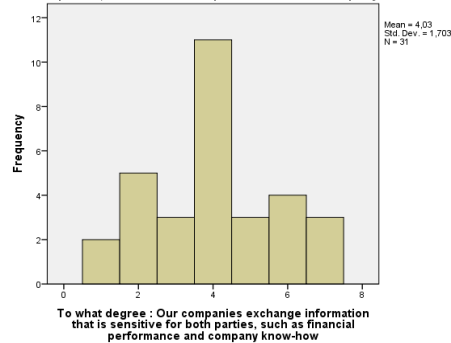
Relationship learning has a mean value of 4,35. This indicates that overall, KDS have high performance related to relationship learning.

To what degree : Our companies exchange information as soon as possible of any unexpected problems



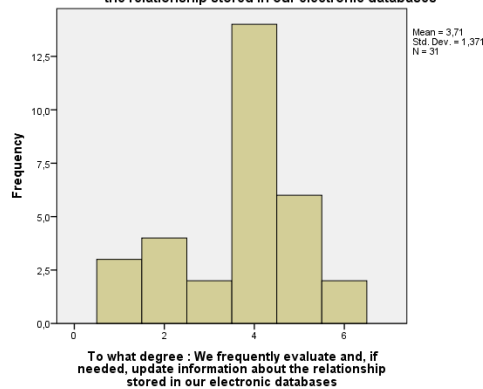
The second item relates to the extent of information exchange when problems occur. This item has the highest mean value in the scale, 5,16. Thus indicating that KDS are good at this area of information exchange.

To what degree : Our companies exchange information that is sensitive for both parties, such as financial performance and company know-how



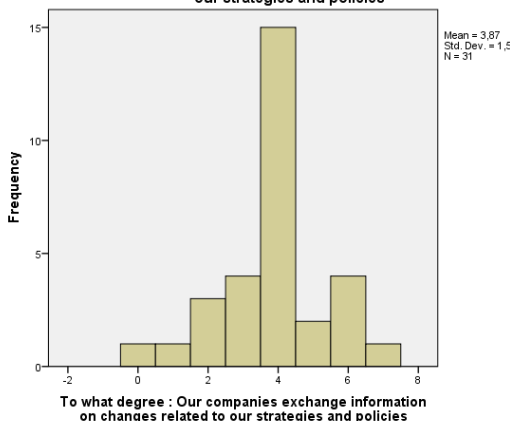
The results from this item show some variance in which to what extent the companies exchange sensitive information. This can be explained by that they operate in the defence industry, thus making it more difficult to exchange sensitive information.

To what degree : We frequently evaluate and, if needed, update information about the relationship stored in our electronic databases



On this item many respondent answered «neither agree nor disagree», indicating that they might not know whether or not information is stored in databases. A mean value of 3,71 on this item is the lowest for this scale.

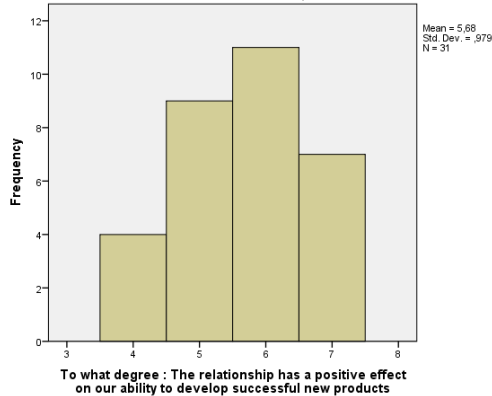
To what degree : Our companies exchange information on changes related to our strategies and policies



The question related to exchange of information about strategy and policy had the second lowest mean value here. The fact that many answered option four here may indicate that the respondents do not know whether or not such information is exchanged in the relationship.

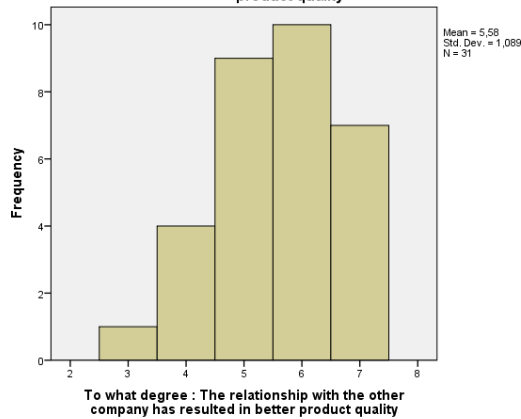
Relationship performance has a mean value of 5,06. This indicates that overall the respondents feel performance is enhanced through engaging in business relationships.

To what degree : The relationship has a positive effect on our ability to develop successful new products



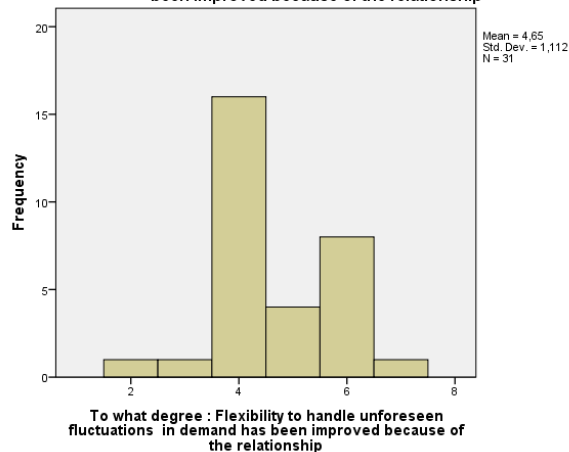
The highest score, a mean value of 5,68, is found on this item, measuring to what extent “do the relationship have a positive effect on the ability to develop successful new products”. There no answers lower than 4 on this item.

To what degree : The relationship with the other company has resulted in better product quality



The respondents also seem to be agreeing when it comes to that product quality can be improved through engaging in business relationships.

To what degree : Flexibility to handle unforeseen fluctuations in demand has been improved because of the relationship

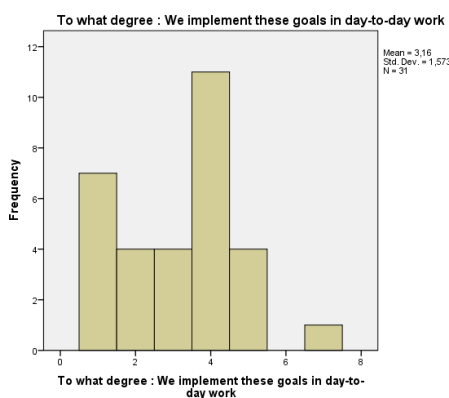


There seems however, to be more uncertainty around to what extent flexibility is improved through relationship learning (many answers “neither agree nor disagree). This item has mean value of 4,65.

Collaborative commitment has a mean value of 3,43, which is the lowest mean value in part two of the survey. The questions in this scale are related to the use of common goals in the relationship, and to what extent these goals are implemented in the daily work. Only a few percent's of the answers are in the “high” category for this scale.

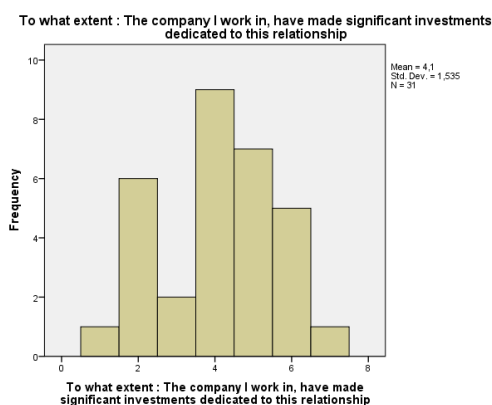


The first item had a mean value of 4,13. 19,4 % of the answers for this item fall into the “low” category, while 22,6 % is in the “high” group. This indicates that there is great variance in how the use of common goals is perceived.



The third item received many answers in the “low” and “medium” group. Only 16,1 % is in the “high” group here. Many answered “neither disagree nor agree”, indicating that they might not know if common goal are implemented in the day-to-day work.

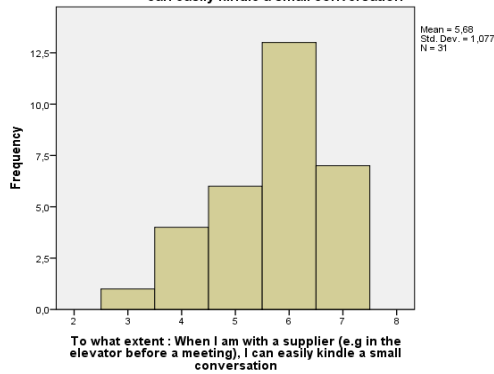
Asset specific investments scale has a mean value of 3,79. This is the second lowest mean value of part two of the survey.



This item shows that the company has made investments dedicated to relationships with strategic suppliers. However, many respondents answered “neither agree, nor disagree” here.

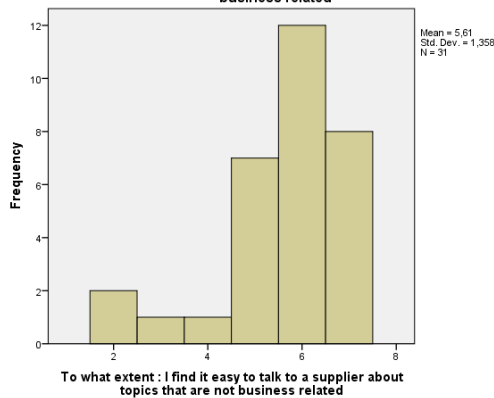
Rapport building had a mean value of 5,53. This is the highest mean value found in part two of the survey. This indicates that people in KDS have high performance related to rapport building skills.

To what extent : When I am with a supplier (e.g in the elevator before a meeting), I can easily kindle a small conversation



The first item in this scale had 60,2 % of the answers in the “high” category. This indicates that people feel it easy to small-talk with suppliers. Relationships are very much determined on personal relations; therefore I believe this is an interesting aspect to look at in this thesis.

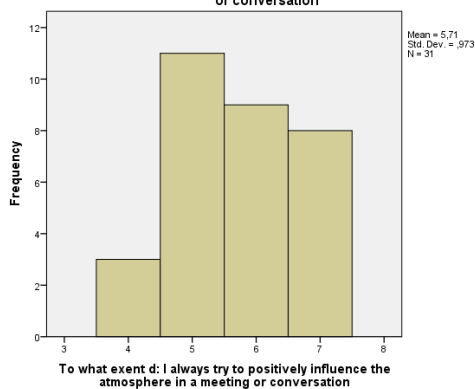
To what extent : I find it easy to talk to a supplier about topics that are not business related



On the second item, related to how easy the respondents feel it is to talk with a supplier about non-business related topics, the mean value is 5,61. This indicates that most respondents find this very easy.

Shaping the interaction received a mean value of 5,33, this is the second highest mean value of part two of the survey. The questions in this scale are related to the respondent’s ability to create a positive atmosphere in a meeting or during a conversation.

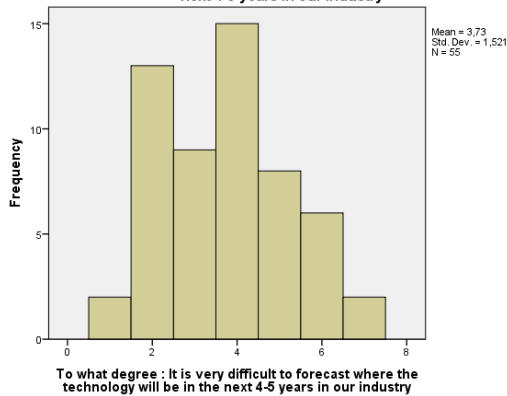
To what extent d: I always try to positively influence the atmosphere in a meeting or conversation



The first item show “I always try to positively influence the atmosphere during a meeting or conversation”, has a mean value of 5,71. This is the highest mean value of the single items in this scale, and there are no answers lower than four here.

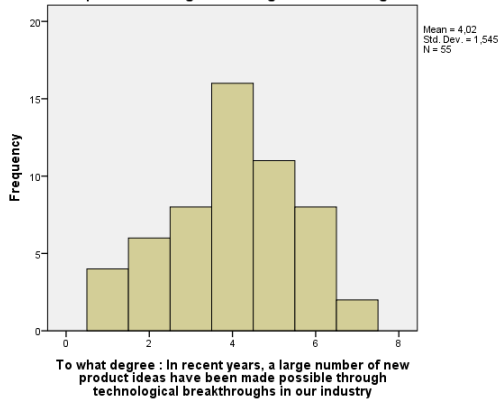
Environmental uncertainty had a mean value of 4,1 for the summated scale.

To what degree : It is very difficult to forecast where the technology will be in the next 4-5 years in our industry



The third item has a mean value of 3,73. This indicates that it is difficult to forecast where the technology development will be in a period of four to five years from now. This can be explained by the dynamic industry context.

To what degree : In recent years, a large number of new product ideas have been made possible through technological breakthroughs in our industry



The highest mean value (4,02), of a single item is found in the fourth item measuring to what extent has new product ideas been realized through technological breakthroughs.

4.3 Hypothesis testing

There are two different types of statistical techniques; parametric and non-parametric. If the data is not normally distributed, and since I do not have the adequate number of answers to run parametric test such as t-test or regression (minimum 70 respondents), I will use “distribution free” or non-parametric techniques, and only test correlations between the variables. In difference from parametric techniques these test do not make any assumptions about the underlying population.

Correlation analysis is used to determine the strength and direction of a relationship between two or more variables. The most common method is called Pearson product-moment correlation, but I used a non-parametric method called Spearman’s Rho. Spearman Rho can be used when data is not normally distributed and with small samples. A prerequisite for using non-parametric analysis methods is individual observation (each person can only be counted once) and random samples (Pallant 2010).

My sample can be considered a stratified random sample within KDS. The magnitude or the strength of the correlation is shown in the table below. Values close to 1 or -1 have the strongest correlations. As the data inspection showed that my data is close to being normally distributed, I also ran Pearson correlations. As table 23 and 24 shows, the results are nearly identical.

Table 23. Spearman’s Rho correlation matrix with environmental uncertainty

	Rel. learn.	Rel. perfor	Collaborative	Asset-spe.	Rapport	Shaping	Uncertainty
Rel. learn.	1,000						
Rel. perfor.	0,348*	1,000					
Collaborative	0,500**	0,420*	1,000				
Asset-spe.	0,470**	0,374*	0,404*	1,000			
Rapport	-0,033	0,516**	0,188	0,202	1,000		
Shaping	0,043	0,648**	0,284	0,119	0,829**	1,000	
Uncertainty	0,121	-0,105	-0,110	0,171	0,067	-0,126	1,000

Table 24. Pearson correlation matrix without environmental uncertainty

	Rel. learn.	Rel. perfor	Collaborative	Asset-spe.	Rapport	Shaping	Uncertainty
Rel. learn.	1,000						
Rel. perfor.	0,373*	1,000					
Collaborative	0,459**	0,436*	1,000				
Asset-spe.	0,556**	0,306	0,457*	1,000			
Rapport	-0,047	0,497**	0,322	0,191	1,000		
Shaping	0,008	0,648**	0,391	0,231	0,850**	1,000	
Uncertainty	0,094	-0,104	-0,166	0,181	0,56	-0,123	1,000

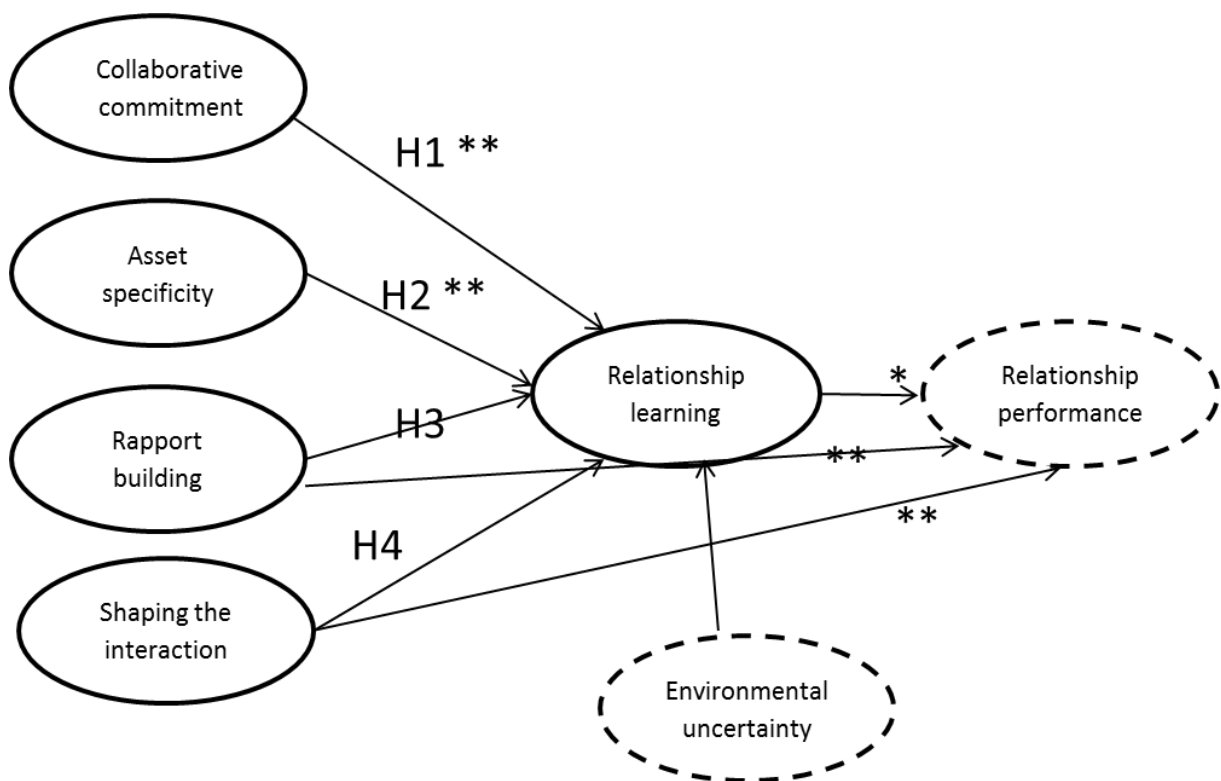
* Correlation is significant at the 0,05 level (2-tailed). ** Correlation is significant at the 0,01 level (2-tailed).

The results from the hypothesis testing are summarized in table 25, and visually presented in figure 4.

Table 25. Results from the hypothesis testing

Hypothesised paths	Hypothesis	Hypothesised relationship
Collaborative commitment → relationship learning	H1+	Supported
Asset-specific investments → relationship learning	H2+	Supported
Rapport building skills → relationship learning	H3+	Not supported, but has a significant positive relationship with performance
Ability to shape the interaction → relationship learning	H4+	Not supported, but has a significant positive relationship with performance
Relationship learning → relationship performance	H5+	Supported

Figure 6. Theoretical model showing significant correlations.



5 DISCUSSION

5.1 KDS – A Learning Organization

The results of this study show that KDS overall scores high on the building block one of learning organization – a supportive learning environment. Supportive environment, psychological safety and openness for new ideas has the highest scores in the first building block, whereas time for reflection, receives a low score. Building block two however, which relates to concrete learning processes, receives some lower scores. A closer examination of the results indicates that educating and training, as well as information sharing are areas where KDS has potential for improving its performance. Building block three – leadership, is an area where KDS have high performance. I will now discuss the findings in more detail.

All in all, KDS's best performance can be found in the areas of supportive environment and psychological safety; the respondents find great support from their colleagues and have very little reservation regarding sharing ideas or experience with their co-workers. This is something that could partly explain KDS's competitive advantage. Having a psychologically safe environment is maybe the most important determinant to be an effective learning organization. Learning occurs through continuous feedback and reflection, sharing of information, asking for help and advice, talking about errors and mistakes while simultaneously also experimenting with new ideas or new ways of working. Without psychological safety it is almost impossible to enable any of these processes, since they all involve interpersonal communication and the courage to admit you need help or maybe made a mistake. Building a psychological safe environment may however be more challenging in big organizations, compared to a small company, since so many people are involved.

Time for reflection has the lowest mean value in part one of the survey, and this indicate that some employees feel relatively stressed at work, and feel they have little time available for improvement. If employees experience high levels of stress, it can negatively affect their ability to think creatively and analytical, as well as their ability improve their personal performance. However, stress is not necessarily bad for a company, if the employees at the same time feel they have support from their leaders and colleagues.

Building block two, related to concrete learning processes was in this study measured through training/education and information sharing. The scale measuring information sharing had a low mean value, one of the questions in this scale was related to what extent does the company conduct post-audits and after action reviews. Reflection is at the core of being a

learning organization; through reflection the company can learn from mistakes as well as from best practices, and sometimes the best way to learn is actually through failing. Reflection over a past project together with other team members and leaders is a great way to collectively determine what can be learned from the experience with that project, and if there were any problems or misunderstandings, how can they be prevented in the future. Nevertheless, the low mean value related to information transfer, indicates that KDS could have potential for improving their performance related to systematic information sharing. Exchange of information is important so that new knowledge can find its way to the people that need it. The scale measuring education and training also had a low mean value in this study; some respondents feel they receive little periodic education and training and have little time available for this. It is important to keep in mind, however, that there might be differences between the various units here, for instance sales and marketing could need less formal training than for instance the engineers, when KDS launch a new initiative

Leadership is clearly an area of strength in KDS, overall the scale has very high scores. Leaders and the way they act are extremely important because they are role models and people look up to them. When leaders encourage their employees to speak up, participate in discussions and share their ideas, they create a supportive learning climate. Leaders must not just do the talk, they must “walk the talk” – this means they must lead by example. People learn more from what they actually see in action, rather than from what they hear or are told.

Successful leaders trust, respect and have faith in their employees. Excellent leaders also inspire and motivate employees to do more than they thought they could. A leadership style aimed at motivating and encouraging employees through being good role models is known as transformational leadership (Tichy & Devanna 1986). If you want other people to perform better, you have to set the example first- Alexander the great, the King of Macedonia, was one of the most outstanding leaders of all time. Even when he was at the height of his power he would still draw his sword at the beginning of a battle and fight in front, together with his men. He was leading by example and felt that he could not ask his men to risk their lives, if he would not do the same himself (Tracy 2008).

A learning organization is characterized by an atmosphere without fear, where different and dissenting views are not only welcome but expected. In such context problems can be detected and solved at an early stage. When people feel it is accepted to fail, and at the same time they also dare to share their experience about what solutions worked and what did not–

people can learn from each other's experience, and the organizational performance can be improved through continuously improving organizational processes.

5.2 Learning in relationship with strategic suppliers at KDS

Relationship learning was operationalized through exchange of various types of information in this study. An inspection of the data show that KDS scores relatively high on all the indicators measuring relationship learning, but some variance was found related to exchange of financial information and company know-how. This may be explained through the context in which the case companies operate; the military and defence industry has more regulations concerning what information is regarded as sensitive. Also, the military and defence industry handle complex products, and just because they do not exchange sensitive information does not imply they are bad learners. KDS score high on the indicators measuring exchange of information related to unexpected problems, and also related to successful and unsuccessful experience with products exchanged in the relationship. By asking the supplier for help with solving a problem, the speed and chance of solving may increase, but at the same it requires a high level of psychological safety between the companies to do this. The lowest score in this scale was found in the indicator related to updating and evaluating information about the supplier stored in electronic databases. This may indicate that KDS can improve their routines related to storing of information in databases. Strategy and policies stood out as an area where the company's do not exchange much information, and maybe they can exchange more information related to strategies in the future.

Relationship learning also has a significant positive relationship with relationship performance in this study, and this gave support for the assumption that relationship performance can be improved through relationship learning. KDS score very high on all indicators measuring relationship performance. The findings in this study show that employees believe that collaboration with suppliers have helped KDS reduce costs, improve product quality and that collaboration has enhanced the ability to develop successful new products.

In line with previous research of Selnes and Sallis (2003), collaborative commitment has a significant positive relationship with relationship learning in this study. This indicates that the more committed the companies in a dyad are to learn, for example through the use of common goals and shared visions, the greater the possibility for relationship learning. Collaborative commitment received, however, the lowest mean value of all scales in part two of the survey.

The low mean value for this scale could indicate that this is an area where KDS can strengthen their performance. Nevertheless, the measurement of this construct, imply that these findings must be interpreted with caution: collaborative commitment was only measured through what extent the companies create and use common goals, and a commitment includes more than common goals.

Collaborative commitment can be enhanced through the development of common goals, discussing them and by implementing the goals in the day-to-day work (Selnes & Sallis 2003). The strength of the commitment is determined by what objectives the companies have. Relationships evolve as time goes by, and consequently the degree of commitment between the parties will also evolve as the relationship become long-term. As inferred by Selnes and Sallis (2003); through developing a collaborative commitment, and aligning it with concrete learning activities, the speed of creating competitive advantage can be improved.

Asset-specificity also has a significant positive relationship with relationship learning in this study. However, asset-specificity received the second lowest mean value of all scales in part two of the survey. The low score may be explained through that often it is the supplier, rather than the buyer, that makes asset-specific investments. The positive relationship was expected because an investment in dedicated resources is likely to bind the companies involved closer together. This is also consistent with the findings in Selnes & Sallis (2003), who found proof in their study that asset-specific investments has a positive effect on relationship learning. If a supplier invest in a two million kroner machine to provide the product the customer desires, it could be that the companies enter into a contractual agreement that obligate them to buy from that supplier for a given time period. Consequently, the two companies will have more business with each other ahead, and this can have appositive impact on their relationship learning.

Although not hypothesized in this study, a significant correlation between collaborative commitment and asset-specificity was found. Previous studies conducted by Wathne and Heide (2000), has proposed that there is a positive relationship between the level of commitment and transaction-specific investments. Asset-specific investments are related to high levels of risk, because these investments have often only has value in a specific relationship. Previous research conducted by Heide and John (1990) found asset-specific investments to indicate a wish for continuity in the relationship. This can imply more stability and reduced uncertainty in a relationship. Commitment is therefore desirable in a relationship

due to of the level of risk involved in asset-specific investments. In this study, collaborative commitment could also be a proxy for continuity in the relationship.

I hypothesized two theory-of-mind (ToM) skills – rapport building and shaping the interaction to have a positive relationship with relationship learning. However, it turned out in this dataset that they instead correlate directly with relationship performance, and not with relationship learning. Both factors had significant positive relationship with performance. An inspection of the data shows that KDS's highest scores, respectively, are found in the ToM scales; rapport building and shaping the interaction.

Dietvorst et al. (2009) infer that top performers in ToM can be distinguished on their ability to build and maintain relationship, meet goals and achieve high sales. The high scorers are more adaptive and flexible and have less social anxiety. This indicates that people scoring high on ToM in this study could be better at creating sustainable relationships, and are better able to take the perspective of the other party in a buying or sales situation. Creating a positive atmosphere and making people more comfortable, are skills that are positively related with improving relational performance. These results may be partially explained by looking at the measurement of the construct. The relationship learning scale had a focus on the role of the companies in the relationship (“Our companies exchange...”), whereas the relationship performance scale put more emphasis on the specific relationship (“The relationship with the other company...”). It may be that individual –level factors such as interpersonal mentalizing skills have more direct effect on relationship performance, whereas the effect of company-level factors such as asset-specificity on performance are partially mediated through relationship learning. The two ToM factors also had a strong positive correlation with each other. This may partially be explained through that people that have strong interpersonal mentalizing skills could have a similar strategy of how they interpret information, according to Dietvorst et.al (2009) the brain activity in MPFC and TPJ (brain regions), are significantly more active for those who have high versus low ToM skills. Rapport building and shaping the interaction are two different dimensions of Theory-of-Mind skills, and therefore if a person develops the ability to shape interaction it may also positively increase the person's rapport building skills. The two interpersonal mentalizing skills are thus reinforcing one another.

5.3 Limitations

In short, the major limitations of this study are the small sample size and the measurement approach. I am trying to measure relationship learning through a set of questions in a questionnaire resulting in cross-sectional data. It is difficult to capture the rich dimensionality and aspects of the learning construct. I will discuss these limitations in more detail in what follows.

5.3.1 Data and analysis

It took longer time than expected to find a case company for my study, but to my delight, KDS agreed to be my case company on April 23rd. The Easter holiday was week 14th this year, therefore I decided to wait until after the holiday with sending out the survey. This was because people have a lot to do right before the holiday, and there would be a high possibility that people would not have time to answer. The survey was sent out May 4th, and data gathering closed June 15th. I originally planned OLS regression for testing the hypotheses, which requires at a minimum closer to hundred respondents. That low number of responses was also the reason for why I extended the time the companies had available to respond. However, on June 15th I could not wait any longer, by then 55 respondents had answered part one of the survey, while 31 respondents had answered both parts. If I had more time available I would have conducted in-depth interviews with people both in KDS, and in the supplier companies. In-depth interviews would have been a great way to dig deeper into the results found in the analysis of the survey. In future studies of how internal learning and learning in relationships can be improved, I would recommend to also conduct in-depth interviews, I believe interviews can provide more detailed information, and the researcher can also ask questions around the background and reason for why the respondent make certain allegations. However, in this study the quantitative design and survey-based data collection was chosen due to the efficiency and since it gave more people the opportunity to answer. Since this method is suitable for statistical generalization, this is an often used research method (Ringdal 2001). However, in this study the survey method was used within a single case, which gives a very detailed description of this single case, but the findings may be insufficient when it comes to generalization. Due to the small sample and case-study approach the results of this study cannot be generalized.

I was also able to collect data for a more thorough analysis only from one side of the buyer-supplier dyad. Due to a very low response rate from the supplier companies I decided not analyze the sample in detail, and just provide the mean values for the scales measuring

relationship learning and relationship performance. I included the relationship learning scale because it showed to what extent the supplier exchanges information with the customer (KDS), and the performance scale because it is measuring to what extent the suppliers feel they get something out of collaborating with customers. I think analyzing to what extent the various suppliers are a learning organization or not, is very difficult based on 1- 3 answers only. I think that future research should address in more detail the suppliers learning organization, and how they perform along the various building blocks of the learning organization, how committed they are to learn in relationship with customers, and how their ability to engage in relationship learning can be facilitated and improved.

This study is a cross-section study since the sample was gathered through one survey during the spring of 2012. The weakness with a cross-section study is that it can be difficult to explain causation since we do not follow processes over time. Since the data was collected at a given time (cross-section), it is difficult to measure processes that unfolds over time. It can also be difficult to control the sequence of causation (Mitchell 2007). Selection-bias refers to bias or errors in the findings. The survey was distributed to employees in KDS, through the procurement manager and several department managers. In the supplier companies, KDS's contact-person in each of the companies sent the survey out to co-workers. I had no control over how it was distributed, and selection bias is therefore likely to occur in this study. I do not know how motivated the respondents were to answers. Since the survey was not mandatory, some of this uncertainty was reduced. Nevertheless, bias is likely to occur in this study.

5.3.2 Alternative models

There are also a number of factors that can influence relationship learning, and organizational learning, which were not included in this study. I had limited time available for this thesis and I was not able to look at all factors in depth. Learning is a multidimensional concept and it is therefore difficult to measure to what extent the various factors affects the learning capability. Especially the fact that I omitted trust from my model deserves some comments. Several studies on relationship learning have identified relational trust to be an important facilitator for relationship learning. Relational trust is defined as the perceived capability and willingness of one company to act in ways that consider both companies interest. Trusts act as a determinant for future collaborative behavior in customer-supplier relationships (Dwyer et al. 1987). On a general level, relational trust and collaborative commitment has similar effects on relationship learning. Trust enables learning in the customer-supplier relationships, since

both firms through trustworthy behavior, have a common understanding that through sharing information and knowledge their pies will increase together, more than their pie increases by rejecting to share information (Selnes & Sallis 2003). Trust can reduce the costs associated with monitoring and negotiating, and thus enhance performance (Barney & Hansen 1994). Trust in a relationship is something that have to be earned, and the parties need to behave trustworthy throughout the entire relationship (Johnson et al. 2011) With high levels of trust companies is more likely willing to share sensitive information, when they see that by sharing, it can give advantages.

However, in this study I decided not to make a hypothesis about this relationship because trust is a necessity in the defence industry that KDS and their suppliers operate, and there is likely to be little variation at the level of trust. The mean value of this scale was very high (5,3), indicating that high level of trust exists between KDS and their strategic suppliers. The companies are dependent upon high levels of trust, and the positive relationship between trust and relationship learning is quite obvious so no hypothesis was needed to prove this.

There are also several other factors that are likely to have impact on relationship learning and performance. The expression “birds of a feather flock together” here refers to the similarity and strategic fit between the dyad companies, which is likely to have impact on the relational learning capability. This can also include the interpersonal relationships or social networks across the companies (Håkansson & Snehota 1995). In future research, organizational fit between companies and organizational culture and how they affect learning can be an interesting area to look closer into. Also, an in depth investigation of how effective and smart teaming may facilitate for learning.

It has been suggested that a collaborative commitment in a relationship can help reduce environmental uncertainty (Poppo & Zenger 2002). I did not test this effect in my study, but in an alternative model or another study it would be interesting to see what impact a strong collaborative commitment can have on environmental uncertainty. Business relationships evolve over time and every dyad is unique. Each dyad in this study could with advantage have been studied more in depth in order to provide concrete tools or areas for improvement for that specific relationship.

I also think future research should address how effective and smart teaming can enhance learning both internally, and in relationship with supplier/customers.

5.3.3 Theoretical implications

My contribution to the relationship learning theory developed by Selnes and Sallis (2003), is that I have tested the theory in the defence industry, and found collaborative commitment and asset-specific investments to have a positive relationship with relationship learning. In addition, a positive relationship between relationship learning and performance was found in this study. Thus, Selnes and Sallis (2003) relationship learning theory, also applies in the defence industry context. The defence industry offers an interesting setting because of the highly dynamic environment. The industry is characterized by complex and highly innovative technological solutions, and the companies exchange highly confidential and complex information. The fact that I included interpersonal ToM skills in the relationship learning model is also a contribution to the relationship learning theory, because to my knowledge these skills have not been tested in relation with this theory previously.

6 CONCLUSION

The research question in this study was:

How can KDS improve organizational learning by developing their internal learning organization and relationship learning with their strategic suppliers?

6.1 Learning Organization

All in all, KDS's best performance can be found in building block one; supportive learning environment, openness for new ideas and psychological safety. KDS had, however, some lower scores related to building block two - concrete learning processes and practices. KDS score very high related to building block three - leadership that supports learning.

Building block two, related to concrete learning processes, education and training stood out as an area where KDS have potential for improving their performance. Education and training is important in order to develop established and new employees. KDS also scored low related to transfer of information. This suggests that sharing of information is an area where KDS have potential for improving their performance. Especially, reflection over past experience is an important element of being an effective learning organization. Mistakes can be expensive and fatal, so it is better to make them early and learn from them, so the same mistakes can be prevented in the future. It is thus important to have routines enabling employees to share their experience related to problems and best practices. In order to make new knowledge available when and where it is needed, knowledge sharing processes needs to be implemented in the day-to-day work.

Leadership is an area of strength in KDS, leaders that inspire people to develop and share ideas and rewarding innovative thinking, is maybe the most important determinant to enable learning in an organization.

To become a highly effective learning organization, the company must master all three building blocks. Having a supportive learning environment and leadership that foster learning alone is not enough, the concrete processes that enable learning, and put learning into practice needs also to be functioning. All these elements are working together and reinforcing one another.

6.2 Relationship learning

In this study, KDS score very high on relationship learning and performance. Relationship learning has a significant positive relationship with relationship performance. Through engaging in relationships - the companies can learn from each other through making technology, people, expertise, experience and routines accessible. By complementing strengths and core competencies from both companies it is possible to create more value together, than either of the companies would have been able to on their own. KDS delivers highly complex and sophisticated solutions to their customers, and through closer collaboration and learning in relationship with their suppliers, it can be easier for KDS to exceed the customer's desires and provide more specialized products.

The results from this study show that relationship learning can be enhanced through developing a collaborative commitment between the companies. KDS's lowest score is found related to collaborative commitment, and this indicates that it is an area where KDS have potential for improving their performance in the future.

Through developing common goals and visions, and by implementing them in the day-to-day work, the companies can increase the level of commitment in the relationship. A collaborative commitment can also help reduce the risk associated with fear of that the other company can spill information over to competitors.

Asset-specific investments also have a significant positive relationship with relationship learning in this study. Although not hypothesized, a significant correlation between collaborative commitment and asset-specificity was also found in this study. Asset-specific investments is desirable in a relationship because it can bind the companies closer together, and strengthen the wish for continuity in the relationship; this is positively related to performance since the goal of most business relationships is to make them long-term.

Two ToM skills – rapport building and shaping the interaction, was hypothesized to have a positive relationship with relationship learning. However, it turned out in this study that they instead correlated directly with relationship performance. The high ToM scorers are more adaptive and flexible, have less social anxiety, and are better able to take the perspective of the other party in a buying or sales situation. High ToM scorers are also good at making people more comfortable. This indicates that people scoring high on ToM could be better skilled at creating sustainable relationships, ToM skills are thus positively related with improving relational performance.

6.3 Organizational learning

Through developing the internal learning organization and learning in relationship with suppliers - KDS can improve organizational learning.

Elements from supportive learning environment, in the learning organization theory, can also be used in relation with relationship learning. Creating psychological safety across the companies, so they can ask each other for help or advices, may enable faster learning.

Through closer collaboration with the suppliers, KDS can also learn from their best practices and routines, and through having more focus on learning and how learning can be facilitated, organizational learning can be improved. Execution-as-learning is a way of organizing the business to maintain high performance while simultaneously focus on learning. Through the integration of continuously learning in the daily work, performance can be improved.

Sustainable growth and the speed of creating competitive advantage can be enhanced through improving both the company's internal learning capability, and trough learning in relationship with suppliers.

Amy C. Edmondson, co-author on the learning organization theory used in this study, has recently released a book called "Teaming", where she explains how companies can team to learn, and learn to team. The author infer that in context where complex information must be exchanged and when people need to shift from one situation to another and at the same time maintain communication and where pre-planning is difficult – teaming is the solution. One core conclusion from her work is that leadership is needed more than ever before due to the constantly changing business environments.

"Teaming is worth learning because it is essential for improvement, problem solving and innovation in organizations" (Edmondson 2012 : p. 30)

Teaming in itself is a learning process engaging in a continuous cycle of communication, feedback and coordination. Teaming is a big field of theory so this will only be scratching in the surface of the theory, but in her book Amy Edmondson, has pointed out four ground pillars of effective teaming; speaking up, collaboration, experimentation and reflection (Edmondson 2012). These are the same factors that are presented under building block one and two in the learning organization theory used in this study. Organizing in teams can help leaders enable learning. A strict top-down focus can inhibit collaboration and learning. The author argues that the importance of leadership is now more important than ever, due to the constantly changing business environments. Top-management's decisions influence everyone

in the organization, through defining strategy, goals and shaping the organizational culture. But leadership is not exercised only from the top, throughout the organization you find leaders that have responsibility for a department or a project, they help other employees to grow and are prompting improvement (Edmondson 2012).

Teams can integrate diverse expertise, combine strengths, experience and knowledge. When people that complement each other are put together in teams they can work smarter together. Working together with people with diverse knowledge and experience can also make the work more meaningful and enriching. Organizations organized in teams seems to benefit from having employees with better understanding of their work and how everything works together, thus enabling them to see improvement possibilities (Edmondson 2012).

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APPENDIX

Appendix 1 – Learning Organization and Relationship Learning Survey, KDS

Appendix 2 – Introduction letter, Strategic Supplier

Appendix 3 – Descriptive distributions for all items

APPENDIX 1 - SURVEY

Learning Supply Chains

Companies need to facilitate learning and knowledge development in the entire supply chain to stay competitive.

This questionnaire consist of two separate parts, part one is about organizational learning, part two is about learning in relationship with suppliers. If you do not have regular contact with suppliers, you will only answer part one of the questionnaire.

Most of the questions are phrased as statements, you choose the answer you feel best matches your opinion. The scales ranges from 1 -7, where 7 is strongly agree.

Please click 'Next' down to your left in order to continue answering after completing each page.

Your identity will be hidden

Read about [hidden identity](#). (Opens in a new window)

Part one - Is Yours a Learning Organization?

1) To what degree do the following statements characterize the learning environment in your company?

	Strongly disagree		Neither agree nor disagree			Strongly agree	
I get the help and support I need from my colleagues at work	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My managers encourage me at work	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I can talk to my managers about something that has upset or annoyed me about work	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
In my company, people are open to alternative ways of getting work done	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
In my company, differences in opinion are welcome	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

2) To what degree do the following statements characterize your psychological safety at work?

	Strongly disagree		Neither agree nor disagree			Strongly agree	
If I make a mistake at work, I feel it is often held against me	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel eager to share information about what does and doesn't work	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel it is easy to speak up about what is on my mind	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

3) To what degree do the following statements characterize the industry your company operates in? Please choose the alternative that best matches your opinion.

6) To what extent do you agree with the following statements related to education and training?

	Strongly disagree			Neither agree nor disagree			Strongly agree	
I have time available for education and training	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I receive periodic training and updating	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I receive training when new initiatives are launched	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

7) To what degree do the following statements characterize your company's information transfer processes?

	Strongly disagree			Neither agree nor disagree			Strongly agree	
In my company we quickly and accurately communicate new knowledge to key decision makers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
In my company we regularly conduct post-audits and after-action reviews	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
In my company we regularly share information with networks of experts	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

8) To what degree do the following statements characterize your managers?

	Strongly disagree			Neither agree nor disagree			Strongly agree	
My managers listen attentively in discussions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My managers invite input from others in discussions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My managers ask probing questions in discussions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My managers never criticize views different from their own in discussions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

9) * Do you have regular contact with one or more suppliers of your company?

- Yes
- No

conversation

I can easily act in ways that gives a meeting or conversation a positive twist

Strongly disagree Neither agree nor disagree Strongly agree

19) I always know whom to contact in the other company, if I have problems related to their products or services

Strongly disagree Neither agree nor disagree Strongly agree

20) Do you have any comments on how to improve the efficiency of supplier relationships in general?



To whom it may concern

KONGSBERG

Your ref.	Your date	Our ref.	Our date
		nielsm	2012-05-02

HIGHLY COMPETITIVE SUPPLY CHAINS — THE IMPERATIVE OF LEARNING.

KONGSBERG purchase some 70-80 % of their turnover. With accumulated yearly sales of some 15 billion kroner the total purchase is more than 10 billion kroner. A large amount is delivered by strategic suppliers — all being critical units in supply chains competing on the world market.

Knowledge and competence development are the main source of sustainable competitive advantage. Collaboration and learning in the entire supply chain will improve our competitive position. To stay ahead we need to learn faster than the supply chain of our competitors.

KONGSBERG has been contacted by Cathrine Haugen from University of Ås who is doing a master thesis project regarding "Learning Supply Chains". The purpose of the master's thesis is to examine how to improve a firm's internal learning environment and learning in relationship with suppliers. In that connection Cathrine have developed a 15 min. Questback Survey which we invite your employees to complete.

This questionnaire consist of two separate parts, part one is about organizational learning, part two is about learning in relationship with suppliers. If you take a break during your answering, you can either start where you left, or start from the beginning.

All information provided in this questionnaire will be treated strictly confidential, and all the respondents remain anonymous. After the data is analyzed, all databases will be deleted. Thank you for being positive to the questionnaire.

Best Regards

Cathrine Haugen

Master degree student

Niels Mortensen

Procurement Manager

Appendix 3 – Distributions of each item and their summated scales

Item	Min	Max	Mean	Std. deviation	Skewness	Kurtosis
Part one – Learning organization						
Building block 1:						
Supportive environment (summated scale)	1	7	5,03	1,19	-1,00	0,95
I get the help and support I need from my colleagues at work	1	7	5,76	1,22	-1,26	1,40
My managers encourages me at work	1	7	4,91	1,67	-0,97	0,40
I can talk to my managers about something that has upset or annoyed me about work	1	7	5,38	1,56	-1,1	0,43
People are open to alternative ways of getting work done	1	7	4,31	1,39	-0,54	-0,16
In my company, differences in opinion are welcome	1	7	4,76	1,66	-0,63	-0,57
Psychological safety (summated scale)	1	7	4,95	1,19	-0,64	1,04
If I make a mistake at work I feel it is often held against me	1	7	4,85	1,40	-0,64	-0,43
I feel eager to share information about what does and doesn't work	1	7	5,35	1,2	-1,17	2,12
I feel it is easy to speak up about what is on my mind	1	7	5,09	1,34	-0,85	0,78
Environmental turbulence (summated scale)	1	7	3,75	1,20	-0,76	0,57
End-user needs and preferences change rapidly in	1	6	3,53	1,43	-0,14	0,5

our industry						
The competitors in our industry frequently make aggressive moves to capture market share	1	7	3,93	1,72	-0,59	-0,05
It is very difficult to forecast where the technology will be in the next 4-5 years in our industry	1	7	3,65	1,6	0,12	-0,54
In recent years, a large number of new product ideas have been made possible through technological breakthroughs in our industry	1	7	3,89	1,72	-0,41	-0,37
Openness to new ideas (summated scale)	1	7	5,08	1,28	-1,0	0,97
My managers value new ideas	1	7	4,87	1,61	-1,03	0,82
If I get a new idea, I feel comfortable at sharing it with my managers and colleagues	1	7	5,44	1,32	-1,02	1,15
In my unit we are interested in better ways of doing things	1	7	5,47	1,29	-1,34	2,29
My managers are positive to untried approaches	1	7	4,84	1,48	-0,68	0,03
Time for reflection (summated scale)	1	7	3,47	1,37	0,34	-0,18
I often feel stressed at work	1	7	4,56	1,58	-0,37	-0,61
I am too busy to invest time in improvement	1	7	4,33	1,68	-0,23	-0,92
I sometimes feel the time pressure gets in the way of doing a good job	1	7	4,71	1,49	-0,53	-0,3
Despite the workload, I find time to review how the work is going (R)	1	6	4,33	1,68	-0,49	-0,6
Building block 2: Education and training						

(summated scale)						
I have time available for education and training	1	7	3,7	1,3	-0,16	-0,05
I receive periodic training and updating	1	7	3,51	1,59	0,17	-0,6
I receive training when new initiatives are launched	1	7	4,13	1,69	-0,33	-0,85
Information sharing (summated scale)	1	7	3,52	1,16	-0,19	-0,59
In my company we regularly share information with networks of experts	1	7	3,73	1,47	-0,41	-0,18
In my company we regularly conduct post-audits and after-action reviews	1	7	3,16	1,51	0,25	-0,5
In my company we quickly and accurately communicate new knowledge to key decision makers	1	6	3,35	1,39	-0,53	-0,09
Building block 3: Leadership that reinforces learning (summated scale)	1	7	4,95	1,09	-0,78	0,88
My managers listen attentively in discussions	1	7	4,89	1,45	-1,25	2,1
My managers invite input from others in discussions	2	7	5,25	1,17	-0,88	0,92
My managers ask probing questions in discussions	1	7	4,95	1,28	-0,77	0,84
My managers never criticize views different from their own in discussions	1	7	4,71	1,49	-0,18	-0,62
Part two- Relationship Learning						
Relationship learning (summated scale)	1	7	4,35	0,98	-0,07	-0,26

Our companies exchange information on successful and unsuccessful experiences with products exchanged in the relationship	2	7	5,13	1,23	-0,37	-0,07
Our companies exchange information as soon as possible of any unexpected problems	2	7	5,16	1,34	-0,75	0,22
Our companies exchange information on changes related to our strategies and policies	1	7	3,87	1,5	-0,34	0,82
Our companies exchange information that is sensitive for both parties, such as financial performance and company know-how	1	7	4,03	1,7	0,08	-0,65
We frequently evaluate and, if needed, update information about the relationship stored in our electronic databases	1	7	3,45	1,63	-0,7	-0,3
We have a lot of face-to-face contact in this relationship	2	7	4,81	1,38	-0,45	-0,11
Relationship performance (summated scale)	2	7	5,06	0,83	0,08	-0,02
The relationship with the other company has resulted in lower logistics cost	2	7	4,58	1,09	0,28	0,72
The relationship with the other company has resulted in better product quality	3	7	5,58	1,09	-0,39	-0,45
The relationship has a positive effect on our ability to develop successful new products/processes	4	7	5,68	0,98	-0,19	-0,89
Collaboration with this supplier has positively contributed to cutting costs	3	7	4,9	1,11	0,36	-0,6

Investment of resources in the relationship, such as time and money, have paid off very well	3	7	5	1,03	0,0	-0,46
Flexibility to handle unforeseen fluctuations in demand has been improved because of the relationship	2	7	4,65	1,12	0,15	-0,21
Contracts (summated scale)	1	5	3,71	1,23	-1,8	3,88
To what extent do contracts specify how the work shall be performed by both companies (production, logistics and so forth)	1	5	3,74	1,24	-1,17	3,88
To what extent do contracts between your company and the supplier, specify procedures for handling disagreements	1	5	3,65	1,28	-1,42	2,59
To what extent do contracts between your company and the supplier, specify legal consequences for breaching the contract	1	5	3,74	1,26	-1,7	3,43
Trust (summated scale)	1	7	5,08	1,28	-1,0	0,97
I trust that the other company will do its best to fulfill contractual agreements	1	7	5,1	1,72	-1,84	3,69
I trust that the other company is competent at what they are doing	1	7	5,65	1,36	-2,48	9,42
I believe the other organization will respond with understanding in the event of problems	1	7	5,03	1,76	-1,66	2,85
Collaborative commitment						

(summated scale)	1	7	3,43	1,41	-0,49	-0,09
We discuss company goals with the other party in this relationship	1	7	4	1,75	-0,48	-0,43
We develop these goals through joint analysis of potentials	1	6	3,26	1,41	-0,42	-0,27
We implement these goals in day-to-day work?	1	7	3,03	1,66	0,09	-0,53
Asset specificity (summated scale)	1	7	3,79	1,54	-0,1	-1,11
The company I work in, have made significant investments dedicated to this relationship	1	7	3,97	1,7	-0,42	-0,44
The company I work in, have made several adjustments to adapt to the other company's technological norms and standards	1	7	3,61	1,65	-0,09	-0,83
Experimentation (summated scale)	1	7	3,66	0,95	0,05	0,43
In this relationship we frequently experiment with new product/service offerings	1	6	3,58	1,48	-0,53	0,09
In this relationship we frequently experiment with new ways of working	1	7	3,58	1,46	0,11	-0,34
In this relationship we have a formal process for evaluating experiments or new ideas	1	7	3,74	1,67	0,21	-0,72
In this relationship we revisit well-established perspectives during discussions	1	7	3,74	1,39	-0,62	1,27
Rapport building (summated scale)	1	7	5,53	1,2	-0,86	0,38

When I am with a supplier (e.g in the elevator before a meeting), I can easily kindle a small conversation	3	7	5,68	1,08	-0,67	-0,12
I find it easy to talk to a supplier about topics that are not business related	2	7	5,61	1,36	-1,36	1,76
When I am at a business meeting or a reception, I can easily start off a conversation on a general topic	1	7	5,29	1,55	-1,61	3,6
Shaping the interaction (summated scale)	2	7	5,33	0,88	-0,35	0,39
I always try to positively influence the atmosphere in a meeting or conversation	4	7	5,71	0,97	-0,06	-1,02
I can easily make people feel more comfortable during a meeting or conversation	2	7	5,19	1,01	-0,83	2,06
I can easily act in ways that gives a meeting or conversation a positive twist	3	7	5,10	0,94	-0,46	0,05