Lean in the Danish Armed Forces

A cultural analysis of the Danish Armed Forces in relation to a Lean implementation

Education: Graduate Diploma in Supply Chain Management

Course: Final Project, 4th semester, spring 2019

Educational institution: Copenhagen Business School

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1. Executive Summary

The paper examines the cultural compatibility between Lean and the Danish Armed Forces. This is done in order to find explanatory elements, rooted in the organisational culture, as to why Lean implementation within the organisation through the last 9 years has only been partly successful. With this fundamental concern, the following question is sought to be answered: *How does the culture within the Danish Armed Forces fit with that of Lean?*

Through the use of the Competing Value Framework as the theoretical framework for the analysis, and through the use of both text analysis and a comparative case study, the paper examines the culture within the organisation and seeks to define the culture which is best suited for a successful Lean implementation in a Danish military context.

The research approach in the paper is equally focused on: 1) A strategic level – presented by organisational documents defining the overall strategy, managerial approach for the organisation and the curriculum presented to the organisation's new managers, 2) An operational level – presented by the cultural case study of different departments within the Danish Armed Forces, all working with Lean, with varying degrees of success.

On the strategic level, no direct hindrance was found in regard to cultural compatibility between that of Lean and the Danish Armed Forces. It is found that no clear path was laid out in respect to the organisation's managerial approach, nor in the education and training of the managers within the organisation. Consequently, no higher managerial support for the implementation in respect to the organisational culture was found either.

In the case study of different departments with varying degrees of success with the Lean implementation, connections between Lean's success and organisational culture were found. It was found that departments with a focus on stability and control have the greatest implementation success rate in relation to Lean. This despite an employee desire for a more flexible and externally orientated culture. However, to ensure lasting implementation it is found that the

departments have to enact a cultural transition towards a more flexible and externally focused culture than they have at present. Combining the findings, it was found that the ideal culture for the Lean implementation within a Danish Armed Forces context could be described as being focused on flexibility and the freedom to act and an internal focus within the organisation.

Therefore, by having departments actively working with Lean all being culturally dominated by a focus internally and on integration as well as on stability and control, it is found that the current organisational culture within the Danish Armed Forces is not fully aligned with that of Lean. It is found that actions should be taken in order to adapt the culture to a more Lean-compatible culture in order to ensure lasting implementation success.

2. Introduction

In a strategic effort to generate savings through optimisation, the Danish Defence Command established a Lean Competence Centre in 2010. The task for the centre was to increase the use of Lean within the Danish Armed Forces, both in regard to the tools found within Lean as well as the philosophy in Lean Thinking. The Danish Armed Forces were, at the time, just one of many public institutions who had implemented Lean, and, by 2013, 84% of the Danish Public sector were actively working with Lean as a way of managing their sectors in an effort to reduce waste (FELS - Lean, 2019).

The Lean Competence Centre was established after the Danish Defence Command had been successfully working with Lean as a form of optimisation within the department. The primary task for the Centre is to support systematic work with Lean within the entire area of the Danish Defence Ministry, involving the Armed Forces and all of the supporting structure surrounding it. The goal of introducing Lean into the organisation is expressed by the Lean Competence Centre through their Lean strategy, which is translated to:

"To achieve savings and/or product improvements by optimizing efficiency improvements and exploiting economies of scale based on an approach that takes account of the diversity and ownership of the authorities ... and contributing to increased employee satisfaction ...". (Dansih Defence Ministry, 2011)

The positive results generated by the introduction of Lean within the Danish Armed Forces quickly became relevant, as Lean became an independent part of the Danish Defence Agreement 2013-2018. In the agreement, it stated:

"There are good experiences with Lean processes in the defence. Lean can be an important tool in connection with ongoing efficiency improvements and optimization of workflows. On this basis, there is agreement to further strengthen the Lean expertise and the Lean culture." (Danish Defence Ministry, 2013)

In the agreement, which was passed in early 2013, it is stated that the Armed Forces are to use Lean as a means to reach the desired savings of 2.7 billion by 2017. In the new agreement, 2018-2023, Lean is no longer mentioned (Danish Defence Ministry, 2018). However, Lean has now become an incorporated part of the organisation and both schools and departments are actively using Lean.

Now Lean, as both a concept and as a way of planning and acting by both employees and managers in everyday situations, has become an area of focus, and courses in Lean are provided throughout the organisation (FELS - Lean, 2019).

However, the implementation has not been without complications, and, in some departments, initial implementation success is later found to be riddled with contradictions. These are contradictions seemingly rooted in the cultural differences between Lean and the departmental culture within the organisation (Gustafsson, 2013). Others, in turn, have found that the use of Lean came with great potential (Mordvinukas, 2012) (Mølvig, 2010).

That the success of implementing Lean within an organisation in many ways depends on the culture within the organisation is not new knowledge. Some authors have pointed to organisational culture as the cause of the poor effectiveness and success rates of Lean implementation (Liker, 2004) (Sim, et al., 2009) (Liker, et al., 2011).

Conducting a quick search on a research database with the keywords "culture" and "Lean", around 5,000 publication hits emerge (CBS, 2019). These concern how to implement Lean successfully and how to measure if an organisational culture is compatible with that of Lean.

So, the question now remains, Does Lean culture even fit with the culture within the Armed Forces? And if not, is there anything being done in an effort to make it so? Can you even change a

historically hierarchy-driven institution such as the Armed Forces' culture without also changing their ability to resolve their core competencies, being armed conflicts both domestic and abroad?

Higher management within the Armed Forces, i.e. the Defence Ministry, has implemented Lean into the organisation as a strategic tool to create savings, but how compatible is it? Perhaps it is well suited for some departments but not others? Perhaps the individual departments themselves are to define whether or not Lean is something that they wish to work with? But if it is up to the departments themselves then how can it be a strategy for the entire Armed Forces?

It is with this problem that this paper takes its starting point.

2.1. Problem area

Lean has now been in the Danish Armed Forces for several years. There is an entire centre with the sole purpose of ensuring the smooth adoption of Lean throughout the organisation. Internal courses are being held in the concept of Lean, using internal instructors. Lean might to some extent have entered into the Armed Forces as a tool to help reach the desired 2.7 billion savings by 2017, but it has rooted as a cooperate strategy.

Others have examined the compatibility of Lean and different departments within the Armed Forces. Examinations have given various results, ranging from Lean being compatible and effectively used within the Material and Purchase Department (Mølvig, 2010) to results showing that Lean as an organisational strategy is not suitable for the operational structure within the Army (Gustafsson, 2013). The variations should, however, not come as a surprise since they are focusing on both different departments and with different theoretical standpoints.

The Danish Defence Command guides or manages the Armed Forces through a series of documents. These include two overall documents: 1) The Managerial Foundation, which acts as a guideline for how to act as a manager within the organisation, 2) The Mission, Vision and Strategy, which, true to its name, describes the overall strategy for the organisation and how the Defence Command sees it lived out. Both documents describe how to act within the organisation,

both as employee and as manager. Consequently, the documents also act as guideline for what kind of culture there is to strive for in the departments; the kind of culture which best facilitates the organisational strategy presented. The question then, however, is whether or not the strategic decision regarding the Lean implementation has reached the overall strategic documents. Are the overall strategic documents, acting as guideline for the entire organisation, enabling the Lean implementation, or are they acting as a hinderance?

The question remains, if Lean has routed as a corporate strategy, are higher management then also setting the preconditions for a successful implementation? Is the implementation being focused enough in regard to the different departments' core competences? Are the Danish Armed Forces as an organisation moving forward to a sustainable implementation of Lean or are the cultural differences proving to hinder the process?

2.2. Problem statement

With this fundamental concern, in regard to the compatibility of Lean culture and the culture within the Armed Forces, the following question is sought to be answered:

How does the culture within the Armed Forces fit with that of Lean?

Sub-question 1

How does higher management support the implementation in regard to the cultural perspective of implementing Lean into an organisation?

Sub-question 2

How are the managers within the Armed Forces being prepared to sustain the implementation of Lean?

Sub-question 3

What cultural traits differ between departments having success in implementing Lean and those who do not?

2.3.   Delimitations

Organisational structure of the Danish Armed Forces

The paper will focus on the Army branch of the Danish Armed Forces. This is due to a number of reasons. 1) The Army is historically known for a hierarchy-based organisational structure. From a basic understanding of the bottom-up approach within Lean, this makes the Army a valid analysis object in order to answer the main question in relation to the overall compatibility of the Lean culture with the Armed Forces. It is hereby specu-
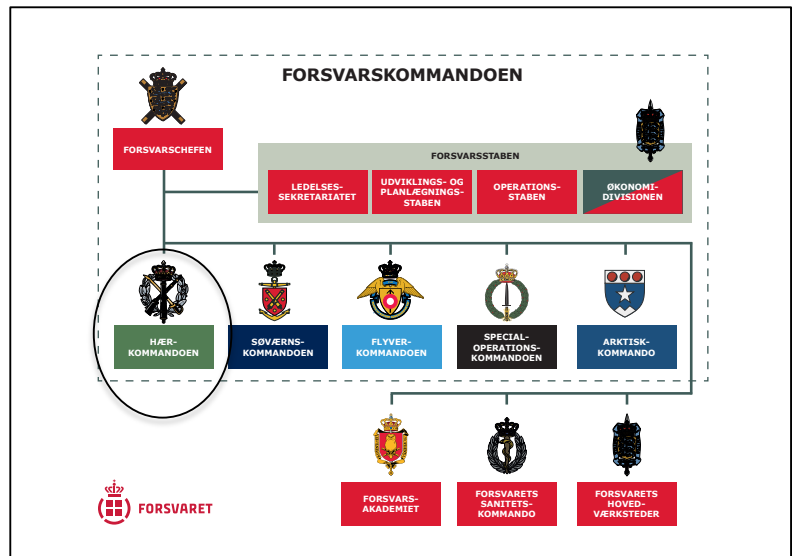

Figure 1

lated that if Lean is concluded to be compatible with the culture within the Army, then it will also be so in the other branches and departments. 2) Having different management approaches and hereby cultures to support the core values and competencies within each of the branches and departments, it is expected that a number of reservations would have to been made in an effort to compare the findings between all three. Focusing on only one branch means the findings can be more effectively analysed, without being forced to make too many reservations in order to compare the findings. 3) I, as the author, am myself employed in the Institute of Military Studies within the Danish Royal Defence College, being partly responsible for the education of Officer cadets for the Army. This gives me a unique insight into the organisational structure. This, of course, also makes it an area of focus, so that the paper does not become biased in relation to my position within the same organisation that I am to examine.

The paper will focus on current empirical data within the Armed Forces, not historical data. It could be argued that through an analysis of historical data one could see whether or not the Armed Forces are making an effort to change the organisational culture. However, focusing on the problem statement, only the present state of organisational culture is of interest.

When discussing culture and organisations, theoreticians argue whether or not the organisational culture comes from within the organisations, thereby being something that the organisation can change as they like, or if the culture is defined from the society and population that surrounds it (Schein, 1984). Is the organisational culture predetermined by the country's culture and the subcultures defining the region where the organisation is located? (Erthal, et al., 2018). In this paper this issue will not, however, be addressed, instead the focus is on the organisation. This is done considering only the parameters that the organisation is able to change themselves as being of interest. That the culture defining the surrounding society plays a role in the making of an organisation's culture is fully accepted. However, by only focusing on the organisation's culture, the findings and implementation plan will only relate to areas which the Armed Forces can affect.

Due to the nature of the Armed Forces, some data are expected to be classified for non-cleared personnel. Accordingly, the analysis section in particular will have references that can only be viewed through a separate application towards the relevant departments within the Armed Forces. However, quotes and tables will to some extent be available without compromising the classification.

2.4. Definition of Lean

A distinct definition of Lean has yet to be conceived, which has been highlighted by many researchers as a reason for many of the problems with implementing Lean. Since the Lean concept was introduced in 1988 (Krafcik, 1988), it has evolved over time, bringing confusion in regard to what Lean actually is (Hines, et al., 2004). Lean derived from the Toyota Production System and over time has become translated into different versions (Pettersen, 2009). The emphasis of Lean has shifted from being a concept for technical production systems to an all-encompassing organisational philosophy. The Lean philosophy is divided in two general directions, termed Toolbox, Lean and Lean Philosophy (Langstrand, 2012). The first refers to the implementation of a series of tools from Lean in an effort to reduce waste, while the latter refers to the philosophy in which

Lean is an approach to how to act as a part of the organisation, actively working on a daily basis in an effort to become better than the day before (Langstrand, 2012).

Rother and Shook define Lean as a set of practices with the purpose of eliminating waste and creating value. A mantra in lean culture is always to make more with less, continually seeking to eliminate waste (Rother, et al., 2009).

Do more with less! This appears to be one of the few ideas that researchers and practitioners can agree upon in regard to what defines Lean (Hampson, 1999) (Ziskovsky, et al., 2007) (Radnor, et al., 2004). In this paper, the following definition of Lean philosophy is used:

"Lean is a systematic approach that focuses the entire enterprise in continuously improving quality, costs, delivery, and safety by seeking to eliminate waste, create flow, and increase the velocity of the system's ability to meet customer demand" (Plenert, 2007).

2.5.   The structure of the paper

The paper is structured as follows: (1) Part one is centred around setting up the frames for the analysis. This can be considered as a funnel starting with the introduction and leading to the problem area and statement. Hereafter, a literature review is conducted in order to objectively search for already existing theories and frameworks which relate to the problem statement. Through the literature review an overall understanding of the academic field is established, existing research in the same field is uncovered and a better understanding of possible theories and frameworks for the papers is provided. In chapter three the theoretical framework is found, augmented, adapted and described in order to ensure that the paper has an operationalised framework from which it can conduct the analysis and conclusion. The methods section in chapter four

describes and argues for the analytical method which is chosen in the paper to conduct the analysis using the established framework. (2) Part two is an analysis of the found data through the method and analytical design setup in part one, in an effort to answer the problem statement. The analysis will be centred around the three sub-questions from the problem statement. The division of the chapter into the sub-questions is augmented in part one, under the methods section in chapter four. (3) Part three will be the discussion of the findings from chapter five leading the way to a conclusion giving some levels of answer to the problem statement from part one. Part three

Structure of the paper

Part 1
Chapter 1: Introduction, problem area and statement, Definition, delimitations

Chapter 2: Litterature review

Chapter 3: Theoretical framework

Chapter 4: Method; design, data quality

Part 2
Chapter 5: Analysis

Analysis of the **managerial strategy** in relation to which culture the organisation as a whole seeks to foster.

Analysis of the **curriculum thought for coming officers/managers** in the Armed Forces in relation to what culture they as managers will seek to create/underline.

Cultural analysis of different departments in relation to the compatibility with Lean

Part 3
Chapter 6-10: Discussion, conclusion, recommendation and perspectives
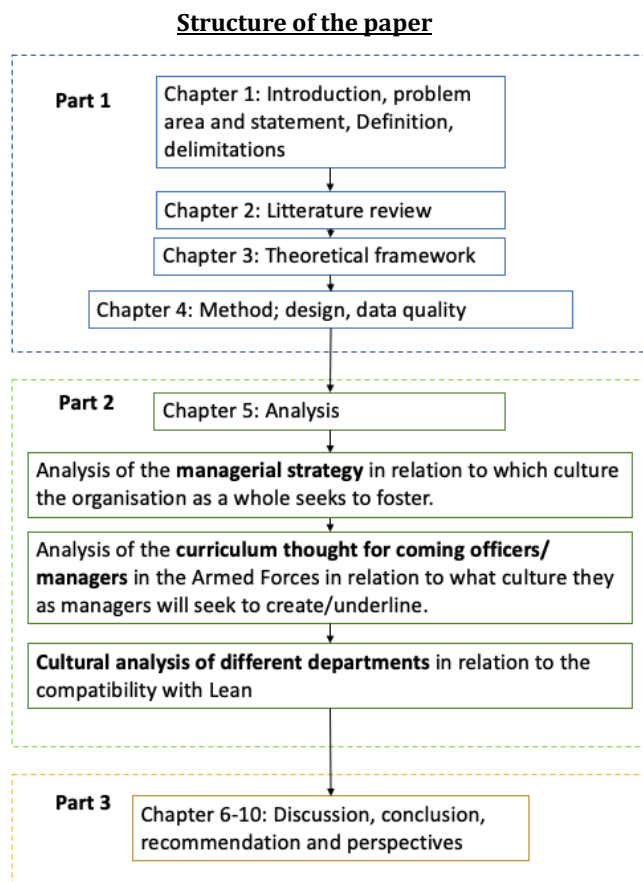
Figure 2

will also include recommendations in relation to how to implement the findings as well as a perspective of what to do next as both an organisation and in relation to further studies into the area.

3. Literature review

The following review is based on information primarily found through Copenhagen Business School's library, using databases such as Emerald Insight, Science Direct, Sage and Taylor and Francis. The accessible databases not only cover the general literature area of management but also organisation, science and philosophy, thereby avoiding a restrictive review. Initially, brainstorming was used to select keywords for the search related to Lean organisational culture and cultural measurement. Thereafter, a snowballing (Bickman, et al., 1997) technique was used to

add additional keywords to the search, while screening the literature. The following keywords were used:

Lean	Culture	Implementing	Organisational culture	Cultural change
Lean transfor-mation	Organisational learning	Armed Forces	Army	Military
Lean manage-ment	Measuring cul-ture	The Toyota Way	Lean transfor-mation	

Figure 3

Organisational culture is defined by Schein as a set of underlying assumptions that a group has created, *discovered* or *developed* as part of a learning process to deal with problems presented by external adaptation and/or internal integration. These are assumptions that have proven them-selves sufficiently valid to be incorporated into the group behaviour and thought to new mem-bers. Organisational cultures are defined by three levels: 1) visible artefacts, 2) beliefs and values, and 3) underlying assumptions. (Schein, 1984).

The culture of an organisation can have great importance to its performance. For a company, be-ing able to align organisational strategy with their organisational culture can generate significant improvements in relation to the performance (Cameron, et al., 2006). In an effort to avoid re-sistance to cultural change in an organisation, both the human and non-human aspects have to be taken into consideration. These could include the human beliefs, values and underlying assump-tions and the non-human aspects such as tangible artefacts. (Macri, et al., 2002) (Langstrand, et al., 2012).

In an effort to measure an organisational culture both qualitative models (e.g. interviews and document analysis) and quantitative models (e.g. questionnaires) can be used. The quantitative models tend to focus on the individuals' perception throughout a larger population of people, e.g. an organisation, whereas the qualitative model best qualifies for team size groups. (Paro, et al., 2017).

Different models to measure organisational culture have been presented in the literature, among others; "Inventory of Profiles of Organisational Values" (Oliveira, et al., 2004), "Culture Map" (Gattorna, 2006) and "Competing Value Framework" (Cameron, et al., 2006).

The Inventory of Organisational Values Profile (IOVP) presented by Oliveira et. al. in 2004 consists of eight factors for measuring the culture and values in an organisation. The findings in the research underlined that there is an interlink between personal values, organisational values and effectiveness within an organisation, highlighting that by ensuring an alignment of personal and organisational values a positive influence on performance can be achieved. (Oliveira, et al., 2004).

The culture map presented by Gattorna in 2006 in his book "Living Supply Chains: How to Mobilize the Enterprise Around Delivering What Your Customers Want", postulates the way forward in matching supply and customer demand. The purpose is to create real organisational alignment with the markets by making supply chains an integral part of a high-performance business. Gattorna looks beyond the systems and technology of the companies, to develop the role of people and behaviour in placing customer-focused supply chains at the heart of the enterprise (Gattorna, 2006).

The Competing Value Framework (CVF) presented by Cameron and Quinn is a framework that was initially developed from research conducted on major indicators of effective organisations, based on statistical analyses of a comprehensive list of effectiveness indicators. It was discovered that conceptions of effectiveness could be presented by four quadrants – Clan culture, Adhocracy culture, Market culture and Hierarchy culture – being divided by two dimensions: one dimension that differs between Flexibility and Stability, and another that differs between internal and external focus (Cameron, et al., 2006). The framework presents a way to measure the organisational culture and relate the findings to general focus areas which could describe the organisation and the effectiveness of it. This recognises that an organisational culture is best described being elements of all four quadrants, possibly dominated by one, then by only one.

Conducting a quick search in literature databases on the CVF I received 200,000 hits which have been peer-reviewed. The CVF is one of the models most often used to measure and diagnose organisational culture (Paro, et al., 2017). As a model, the CVF has been widely tested for its validation and it has been generally considered to be a valid way of measuring an organisational culture (Howard, 1998) (Kwan, et al., 2004). Therefore, I conclude that the CVF model is a valid model for organisational analysis.

Cameron and Quinn's CVF model uses the Organisational Culture Assessment Instrument (OCAI) survey in order to collect data for the model. In order to take into account, the complexity of culture analysis, the CVF sets up two dimensions. 1) It distinguishes between efficiency criteria for flexibility, fast decision making and dynamism verses criteria such as stability, order and control. 2) It distinguishes between efficiency criteria for differentiation, opposition and external orientation from criteria such as integration, group and internal orientation (Cameron, et al., 2006) (Paro, et al., 2017). Combining these two dimensions creates four quadrants, each with their own fundamental values (Cameron, et al., 2006).

Competing Value Framework -Perceived and desired organisational culture

Figure 4

An organisational culture is, in the CVF model, defined as having tendencies and cultural preferences. This is marked by the red and blue lines in Figure 4. The point being, and one of the robust characteristics of the CVF model, is that an organisational culture cannot be unambiguously described, there will always be other trends and preference throughout the organisation, which is represented in the model as the competing values between the four quadrants (Cameron, et al., 2006).
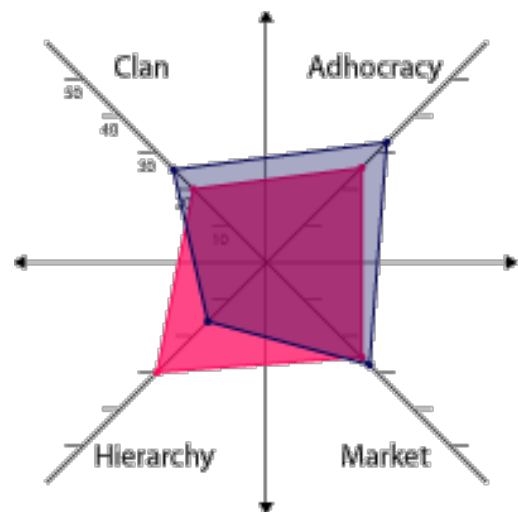
The CVF model is based on the work of Rohrbaugh and Quinn in 1983, where they presented the framework which later became the foundation for the CVF by Cameron and Quinn. Each quadrant of the framework represents one of four major models of organisation and management theory (Rohrbaugh, et al., 1983).

Instead of commencing a qualitative study involving the use of the OCAI, a more theoretical approach can be used (Cameron, et al., 2006). In this way, realising the uncertainties in the qualitative approach, data for the CVF can be obtained through interviews, document analysis and other sources. In 2015, Paro and Gerolamo (Paro, et al., 2015) made such a theoretical approach to the CVF in an effort to measure the Lean culture described by Liker in 2004 through the 14 principles of The Toyota Way (Liker, 2004). The findings can be seen in Figure 5, indicating that the Hierarchy culture is the dominant quadrant for Lean culture.

The Ideal Lean Culture – In a Brazilian Context (Paro, et al., 2015)

Figure 5

Combining the definitions set up by Shcein, Paro and Gerolamo summarise the Toyota Culture proposed by Liker (Liker, 2004) in the following dimensions:

1. Visible artefacts and behaviours: small teams, problem-solving methodology, 5-Why analysis, 5S, job rotation, daily meetings at Gemba, fast troubleshooting, newsletters, kiosks, surveys and motivated leaders.
2. Norms and values: mutual support teams, clearly defined standards, opportunity of employees to make a difference, concerns about physical and psychological security of employees, problem communication is not seen as a problem, but rather as an opportunity for improvement, recreation and daily sport practice, focus on troubleshooting and not on people.
3. Basic assumptions: the leaders are considered teachers and technicians, thoughts involve the perspective of the organisation, continued commitment to employees' security, the

leaders integrating production-value maps with people, the leaders providing support to people who add value (Paro, et al., 2017).

In 2017 Paro and Gerolamo published the paper "Organisational Culture for Lean Programs" with the purpose of defining the Ideal Lean Culture (ILC). The framework used for the research was the CVF presented by Cameron and Quinn as a way of defining organisational culture (Cameron, et al., 2006). The results showed that an ILC in a Brazilian context seems to have the dominant profile of the Hierarchy culture, thus characterising a highly structured and formal place, governed by rules and procedures. (Paro, et al., 2017). The results can be seen in Figure 5, alongside the findings of their theoretical analysis of the Toyota way presented by Liker (Liker, 2004).

Successful implementation of Lean requires an organisational culture where both flexibility and uniformity are valued (Pakdil, et al., 2015). Some research points towards the idea that all organisations should implement their own version of Toyota´s culture in order for the implementation to succeed (Sisson, et al., 2015). However, accurately measuring the culture in an organisation is a complex matter, making it difficult to understand and act upon (Alvesson, 2012).
Through the use of a theoretical approach to Liker's 14 principles of The Toyota Way (Liker, 2004) in 2015, Paro and Gerolamo presented a CVF model analysis of what the Toyota Way culture looked like (Paro, et al., 2015), see Figure 5, finding that the ILC is dominated by a Hierarchy focus.

When implementing Lean, organisations experience certain problems. Each organisation will have its own problems based on variables such as processes, national cultural preferences, personnel and other unique elements for that organisation (Liker, et al., 2011). Some problems can be explained by the nature of Lean, which is a complex matter involving the entire organisation, both tangible and intangible by nature (Marodin, et al., 2015). Some problems derive from the size of the organisation. Larger organisations have a tendency to perform better with Lean since they tend to consider Lean philosophy as an ideology instead of a set of practical tools (Bhasin, 2012).

In an effort to find the general causes to why Lean implementation often goes wrong, in 2012 Laureani and Antony presented their findings in relation to what they found to be the Critical Success Factors for a successful implementation of Lean. At number two, the organisational culture was listed, only topped by the management commitment (Laureani, et al., 2012).

Drew characterised the Lean culture in 2004 as consisting of four focus areas: 1) Long-term decisions, 2) Managers focus on daily activities at the frontline, 3) Operators focus on opportunities for improvement in the production system, and 4) Managers work to solve system problems with open dialogue with all levels of the organisation (Drew, et al., 2004).

The successful implementation of Lean requires an organisational culture where both flexibility and uniformity are valued (Pakdil, et al., 2015). Some research points towards the idea that all organisations should implement their own version of Toyota´s culture in order for the implementation to succeed (Sisson, et al., 2015). However, accurately measuring the culture in an organisation is a complex matter, making it difficult to understand and act upon (Alvesson, 2012).

National culture was, in 1984, analysed by Hofstede, seeking to determine its effect on management in an organisation. Six dimensions were identified to characterise basic differences among nations: 1) Power distance, 2) Individualism vs. Collectivism, 3) Indulgence vs. Restraint, 4) Uncertainty Avoidance, 5) Masculinity vs. Femininity, and 6) Long-term vs. Short-term Orientation (Hofstede, 1984). In 1991, and again in 1998, continuous research was performed in regard to the six dimensions model, and a new model was presented, which now included nine dimensions. The new model is a product of research into how leadership and organisational behaviour and effectiveness was connected to culture. The results came from around 17,300 middle managers from 951 organisations in the food processing, financial and telecommunication services industries. The model became known as the GLOBE model, originating from the "Global Leadership and Organisation Behaviour Effectiveness" (GLOBE) Research Program, conceived in 1991 by Robert J. House of the Wharton School of Business. The major findings were that the leader's

effectiveness is embedded in the societal and organisational norms, values and beliefs of the employee. In other words, the leader has to be able to identify the cultural context in which he or she is situated and act accordingly in an effort to have success (House, et al., 2004).

In 2017, Taherimashhadi found that national culture has a great impact on the successful implementation of Lean and, by taking the national culture into consideration, along with that of both Lean and the organisation at hand, the chance of a sustainable implementation is greatly increased (Taherimashhadi, et al., 2017). A model was presented to help managers in determining the cultural weaknesses before a Lean implementation, which gives an idea of the cultural differences to be taken into consideration (Taherimashhadi, et al., 2017). See Figure 6.

Evaluating Organisational Culture – Including National Culture (Taherimashhadi, et al., 2017)
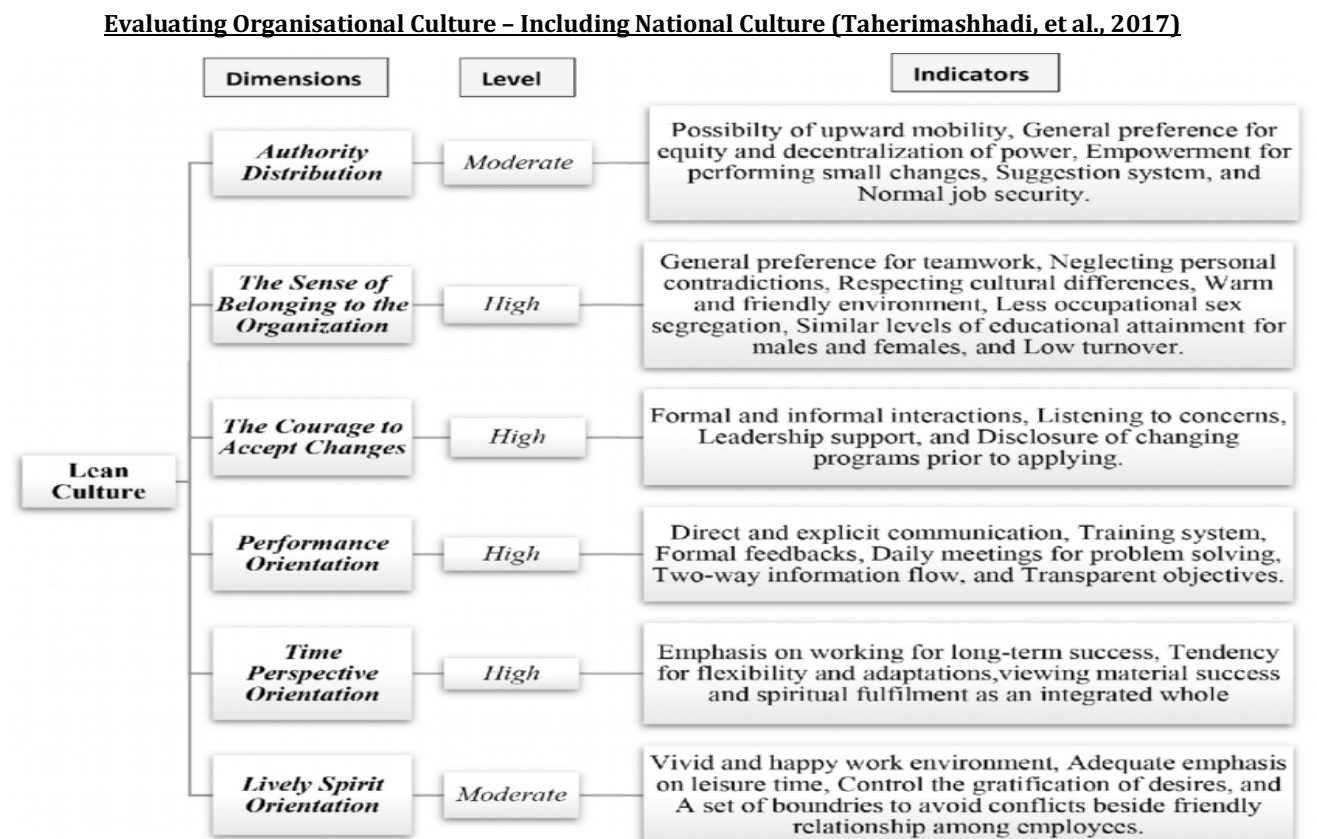

Figure 6

Besides the findings of Laureani et al. in regard to causes as to why Lean implementation fails (Laureani, et al., 2012), other researchers have found that the structural constraints of a government institution in itself hinder the successful implementation of Lean (Mordvinukas, 2012). Some research has found that public service industries do not fit very well with the philosophy of Lean (Mazzocato, et al., 2014).

Implementing Lean, and hereby seeking to change the organisational culture into a lean culture, four elements have to be considered (Mann, 2013). 1) Establishing standards and responsibilities. 2) Monitoring the closeness between production processes and support activities. 3) Understanding of variations in process performance based on data. 4) Taking preventive and reactive actions – in order to minimise performance variations.

When searching for papers concerning organisational culture within the armed forces, I came up somewhat empty handed. Bianca Milther Nielsen wrote a book in 2004 concerning the ideal leader material of an officer in the Danish Army (Nielsen, 2004), G E (Deon) Visser wrote about the South African Army (Visser, 2011) and Van Wijk, Charles H. and Finchilescu, Gillian wrote about gender integration within the US Navy (Van Wijk, et al., 2008). However, no research describing the dominant organisational culture features in the armed forces in general was found. This unfortunately leaves something of a literary blank spot in regard to comparable research into the organisational culture within the Danish Armed Forces.

4. Theoretical framework

Recognising that national culture to some extent defines which culture that is going to prevail in

an organisation (Parkes, 2014), one could argue that the model chosen for measuring the culture in Lean and the Armed Forces should be one including that perspective. A model of this is presented in Figure 8, by Taherimashhadi (Taherimashhadi, et al., 2017). However, in this paper three primary arguments are seen concerning why not to choose this model: 1) As a model, it does not present tangible results in relation to being able to conduct a comparison of two cultures. It instead underlines a series of perspectives which together characterise culture seen in a national and

Ideal Lean Culture – An analysis of "The Toyota Way"

Figure 7

organisational perspective. 2) Looking at the findings from Paro and Gerolamo (Paro, et al., 2017), in Figure 5, it can be seen that national culture is likely to influence the ILC for an organisation. This argues that an organisation should implement its own version of Lean in an effort to ensure a sustainable implementation (Sisson, et al., 2015). Therefore, accepting that the ILC for different nations and organisations will only to some extent look like the one found by that of Liker (Liker, 2004), which also fits well with the purpose of the four quadrants in the CVF (Cameron, et al., 2006), it is argued that the need for including the national culture aspect becomes moot. The national culture's influence is instead recognised as a part of the sum which is measured in the organisational culture through the CVF. Consequently, the findings of Taherimashhadi as described in the literature review are disregarded to some extent (Taherimashhadi, et al., 2017). 3) Organisational culture is not defined as one common thing across the organisation. Cameron and Quinn point out that cultural measurement is best done on smaller organisations, since a larger organisation will have multiple sub-cultures within it (Cameron, et al., 2006). Seen in the context of the national culture versus the culture within the Danish Armed Forces versus the culture within the departments, it is argued that the national influence at some point becomes irrelevant.

Having analysed the culture of the Armed Forces, the findings are to be compared to the Lean culture. In so doing, the findings of Paro (Paro, et al., 2015), Drew (Drew, et al., 2004) as well as Liker (Liker, 2004) are used. Paro found the Ideal Lean Conditions (ILC) for the Toyota Way through an analysis of the 14 principles presented by Liker (Liker, 2004). The findings were in a Brazilian context; however, the main characteristics describing the ILC are backed by the findings of Drew and Liker (Drew, et al., 2004) (Liker, 2004) (Paro, et al., 2017).

Accordingly, the paper uses what can best be described as the original culture of Lean, taken from the Toyota factories in an effort to answer the fundamental question presented in the problem statement. Therefore, it aims at being able to see the compatibility between the cultures of Lean and that of the Danish Armed Forces.

Studies emphasise that the ILC is more associated with a culture of internal focus that continually seeks to improve the stability of processes proposed by Liker (2004). The implementation should be the objective of a balanced plan focused on continuous improvement of the organisation, able to improve the operational efficiency, promote teamwork and especially promote an organisational culture in which the Lean initiatives are long-lasting and permanent (Fullerton and Wempe, 2009).

By using the findings presented by Paro (Paro, et al., 2017), the national perspective is to some extent taken into consideration. In their analysis of the ILC in a Brazilian perspective differences

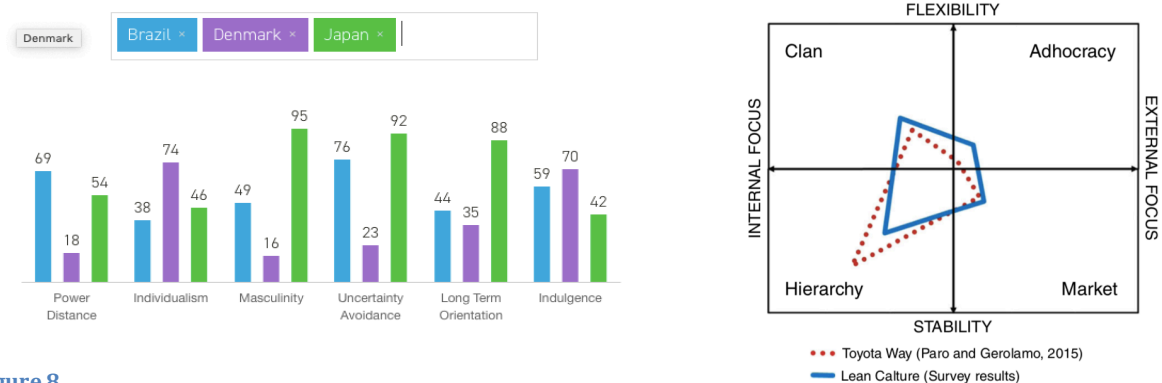**<u>Lean culture – A national culture perspective</u>**

Figure 8

could be seen, in conjunction with the cultural differences presented by Hofstede-Insights (Hofstede-Insights, 2019). See Figure 8. However, these are differences which nevertheless still gave a clear impression of the Hierarchy quadrant being the dominant part. It also gave an understanding that the dominant features in the Toyota ILC are higher institutional collectivism, future orientation, a humane orientation, and a lower level of assertiveness (Bortolotti, et al., 2015).

In order to ensure a measurable framework for the cultural analysis of the culture within the Danish Armed Forces, the CVF model is chosen.

By using the CVF for the measurement and comparison of the two cultures, namely that of Lean and that of the Danish Armed Forces, it will be possible to produce a both visual and measurable result, making the comparison more accurate. Through already having indications of Lean in a CVF context, only an analysis within the Danish Armed Forces is to be conducted. Via the cultural comparison an answer to the problem statement in regard to the compatibility of the two will be found, thereby recognising that the cultural differences are the second most often seen cause for why Lean implementation fails (Laureani, et al., 2012) as well as using a well-established and proven cultural analysis model.

The CVF is defined by two dimensions, creating four quadrants. Each quadrant represents a dominant feature of an organisational culture (Cameron, et al., 2006);

- Adhocracy culture; (external focus and flexible) – A dynamic workplace with leaders that stimulate innovation.
- Market culture; (external focus and controlled) – A competitive workplace with leaders like hard drivers.
- Hierarchy culture; (internal focus and controlled) – A structured and formalised workplace where leaders act like coordinators.
- Clan culture (internal focus and flexible) – A friendly workplace where leaders act like father figures.

The Competing Value Framework (CVF) – Dominant features
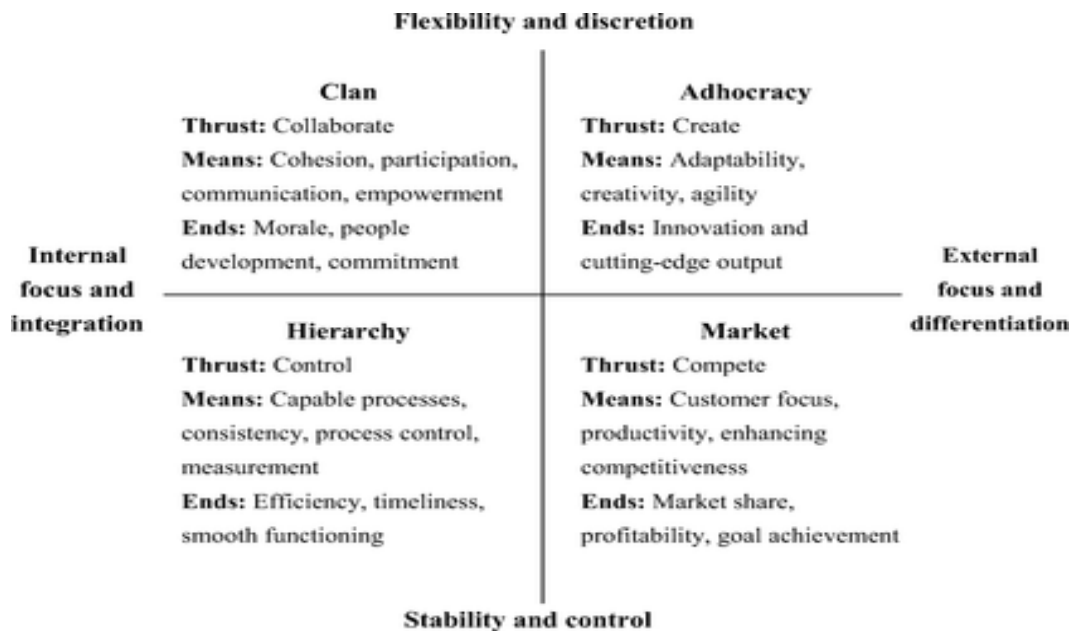
Figure 9

Each dominant feature has prevailing features for Leadership, Effectiveness and Organisational Theory, see Figure 10 (Cameron, et al., 2006).

To find data for the CVF, the Organisational Culture Assessment Instrument (OCAI) is presented by Cameron and Quinn. The OCAI is the instrument which is used in CVF to diagnose an organisation's culture. The instrument is most often used in the form of a questionnaire that requires individuals to respond to six dimensions, each consisting of four questions relating to the four quadrants.

The OCAI consists of two steps. Step 1) Identify the current organisational culture. Step 2) Identify the culture that organisation members think should be developed to match the future demands of the environment and the opportunities to be faced by the company.

The purpose of the instrument is to assess six key dimensions of organisational culture, subsequently giving a picture of the fundamental assumptions within the organisation and the values which characterise it.

Filling out the OCAI´s six items and their four alternatives, 100 points are divided between the alternatives in respect to the extent to which each alternative is similar to the organisation and rating the highest number to the alternative which most closely matches the organisation (Cameron, et al., 2006). See Figure 10.

Organisational Culture Analysis Instrument (OCAI)

Figure 10

4.1. The Competing Value Framework

The OCAI is based on the CVF model which is defined by the two dimensions: 1) differentiates effectiveness criteria that emphasise flexibility, discretion and dynamism from criteria that emphasise stability, order and control. 2) differentiates effectiveness criteria that emphasise an internal orientation, integration and unity from criteria that emphasise an external orientation, differentiation and rivalry.

The two dimensions, being connected horizontally and vertically, together create the four quadrants, each representing a distinct set of organisational effectiveness indicators.

Each quadrant represents what people value in relation to

The Competing Value Framework (CVF)

Figure 11

an effective organisation. Accordingly, they become the core values for a distinct organisational culture which each, in its own way, is seen as effective. These are core values which notably
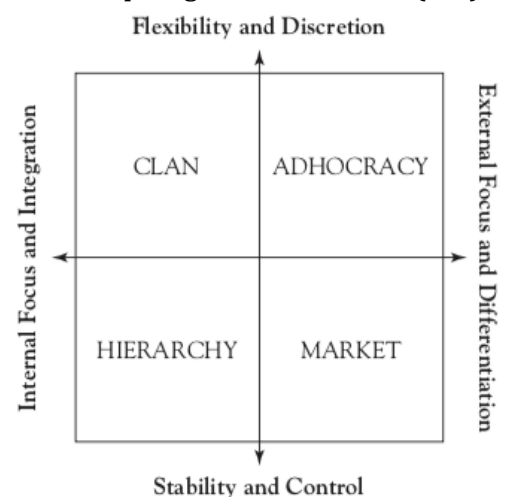
represent opposite or competing assumptions in relation to what value generates an effective organisational culture.

In short, the framework, through the four quadrants, distinguishes between flexibility versus stability and internal versus external preferences in relation to what makes an organisation effective.

The Clan quadrant, being located in the upper left corner, emphasises internal and flexibility values, whereas the lower right corner, being the Market quadrant, emphasises stability and external values, and so forth. Each of the quadrants is defined by Cameron and Quinn as a culture type, representing basic assumptions, orientations and values in an organisation.

The Clan Culture
Placed in the upper left quadrant, defined by the dimensions of Flexibility and Discretion and Internal Focus and Integration, we find the Clan culture. This cultural type is named after its resemblance to the culture that exists in family relationships.

The Clan culture is focused on shared values and goals within the organisation, between its members. Cohesion among the organisational members is highly valued and individual participation in organisational matters is expected. The organisation with a Clan culture is centred around a "we" attitude towards the organisational goals.
In contrast to the Hierarchy and Market culture, the Clan culture is not focused on rules, procedures, organisational diagrams and management levels. Instead, the Clan culture focuses on teamwork, the individual involvement of the organisational members and the organisational involvement and commitment in its employees.

The Clan culture has its forces in an ever-changing market and organisational environment in which it is nearly impossible to foresee the development for the organisational managers. To counter these difficulties, the Clan culture focuses on all employees having the same values,

beliefs and goals, subsequently making it easier to ensure a common goal, without the need for adapted rules and producers.

The Clan culture can be characterised by: (1) minimal number of management levels; (2) informality and self-management, not focusing on organisational rules; (3) employee ownership, e.g. stocks in the company; (4) work teams, selected and to some extent managed by themselves; (5) participation from employee to management.

The Hierarchy Culture

Hierarchy culture, positioned in the lower left quadrant, emphasises the values from the dimensions of Stability and Control and Internal Focus and Integration. It is characterised by clear lines of decision-making authority, standardised rules and procedures as well as control and accountability mechanisms. These elements are valued in the Hierarchy culture as key elements towards organisational success in relation to be an effective organisation.

It is characterised by formalised and structured systems and procedures in the organisational processes. Both employee and managers at all levels are governed by standardised procedures in an effort to ensure alignment throughout the organisation, subsequently maintaining a smooth-running organisation.

Long-term concerns are important for the organisation, and long-term goals involve ensuring organisational stability, predictability and efficiency. As well as organisational aligned procedures governing employees, formal rules and policies are in place on all organisational levels in an effort to hold the organisation together and set the precondition for management control.

Key values in the Hierarchy culture in a production context are centred around maintaining efficient, reliable, fast, smooth-flowing production. These are key values which can just as easily be transferred to the service industry in relation to processes and flows through the organisation.

Market culture

The Market culture, positioned in the lower right quadrant, is defined by the External Focus and Differentiation dimension and the Stability and Control dimension.

The core values are centred around competitiveness and productivity. The Market culture is customer-centric, focusing on premium return on assets and an everlasting focus on improving their competitive advantages in the market. The organisation is highly competitive. Not meeting up to the targets and goals set up by the organisation will by met with consequences. Every possible hinderance to the organisational end state will be considered as a threat and be dealt with accordingly.

The organisation is always striving to increase its productivity, results and profits. The path towards the end goes through a clear purpose and an aggressive strategy.
In the words of General George Patton, market organisations "are not interested in holding on to [their] positions. Let the [enemy] do that. [They] are advancing all the time, defeating the opposition, marching constantly toward the goal." (Cameron, et al., 2006).

Market culture is defined by the following elements: a result-orientated workplace, managers are hard-driving producers and competitors, managers are tough and demanding, organisational focus is always on winning, long-term concern is on competitive actions, success is measured in market share and penetration, and outmanoeuvring the competition is important.

The Adhocracy Culture

Being located in the upper right quadrant, the Adhocracy culture is defined by the dimensions of External Focus and Differentiation and Flexibility and Discretion. The culture is hereby defined as the culture being most responsive to an ever-shifting market that continuously changes the market conditions is which an organisation works.

The focus lies in an innovative and pioneering organisation which is in a constantly changing situation in an effort to develop new products and services to the shifting market conditions.

Managers' primary task is to create the precondition for employee entrepreneurship and creativity. An organisational vision sets the goal for the organisation, fostering the conditions for an organised anarchy and disciplined imagination, creating the flexibility for the employees to independently act in line with the overall vision and strategy.

The individuals are empowered in an effort to ensure individuality, risk taking and anticipating of the future around which the Clan culture is centred. Every employee is involved in the organisation's value creation, its external partners and the future development.

As implied in the name "adhocracy", i.e. ad hoc, the Adhocracy culture is centred around something which is temporary, only existing as long as the situation demands it, after which it dissolves once again.

The main focus of the Adhocracy culture is to create the preconditions for an organisational culture which is adaptable, flexible and creative in situations which are defined as uncertain, ambiguous and overloaded with information.

The Adhocracy culture is described by four characteristics: (1) no organisational charts, (2) temporary physical space, (3) temporary roles, and (4) creativity and innovation.

The Adhocracy culture is a dynamic, entrepreneurial and creative workplace. The employees are so deeply involved in the organisation that they are willing and enforced to take risks. The commitment and the innovative trademark of the organisation are what holds the organisation together. Managers are characterised as visionary, innovative and risk-orientated.

The organisational goal is always to be market leading in regard to new knowledge, products and services, having an organisational design which excels in regard to meeting market changes and challenges. The long-term focus is on constant growth and market gain.

5. Method

The problem statement will be answered through three steps: 1) Using the CVF, analysing the Managerial Strategy and curriculum thought to the upcoming managers within the Danish Armed Forces, to see if the they enable the upcoming managers to create the culture needed to ensure a successful and sustainable Lean implementation. 2) Using the CVF, analysing the organisational Mission, Vision and Strategy to see if the Danish Armed Forces, as a whole, sets the precondition for its managers to enact the culture needed to ensure successful Lean implementation. 3) Using the CVF, conducting a comparative case study of different departments in the Army, with different levels of success with the Lean implementation, in an effort to see if there is a cultural link between the departments with success and the ILC, as well as to see if there is a correlation between which cultures tend to have Lean success within the Army.

The three levels and the subsequent discussion and conclusion are depicted in Figure 12 and elaborated and discussed below.

Analytic steps in the paper – Method / structure
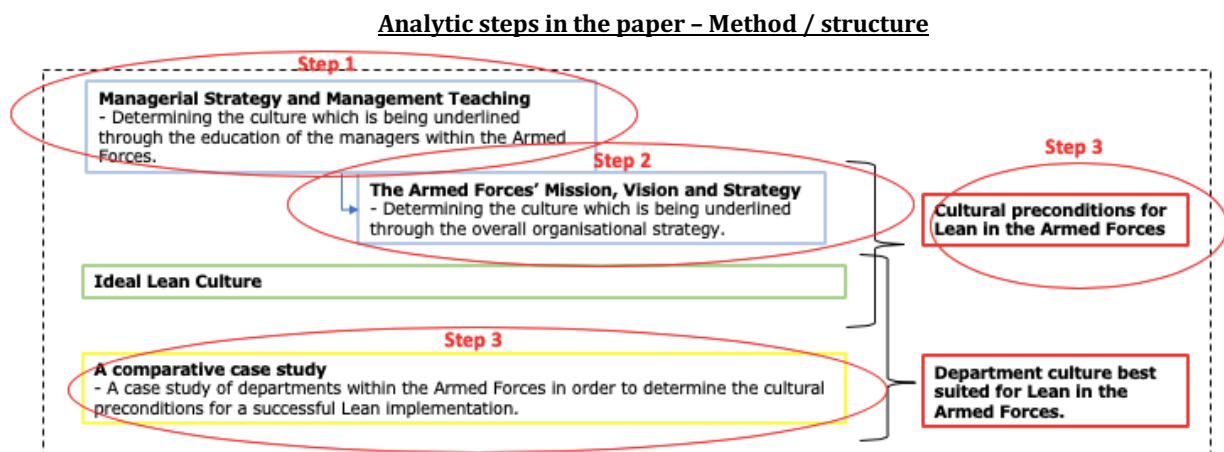
Figure 12

In an effort to measure culture in an organisation, three strategies are available. 1) A holistic approach – the investigator engages him-/herself in the culture and engages in in-depth observation, trying to become part of the organisational culture. 2) Metaphorical or language approaches – the investigator investigates language patterns in documents, reports, stories and conversations to unfold the culture. 3) Quantitative approaches – the investigator uses questionnaires or

interviews to assess particular cultural dimensions. This approach allows multiple viewpoints, allowing for a broader organisational cultural understanding. (Cameron, et al., 2006).

Collecting data for the CVF during step one and two, a qualitative document research approach is chosen, namely the metaphorical approach. Consequently, this will focus on a theoretical approach in an effort to gather data for the model. The OCAI is, however, often used as the primary instrument for gathering data for the CVF model, hereby focusing on a quantitative approach (Cameron, et al., 2006).

In collecting data for step three, a more quantitative approach will be used, thereby focusing one using the OCAI as intended, in an effort to measure the organisational culture within different departments within the organisation. The population size for the OCAI is, however, strongly reduced, thus giving only indicators and not final conclusions. This is due to the time and resources linked to the research paper.

In the debate over whether to use quantitative or qualitative methods for analysing organisational culture, a central aspect is whether quantitative methods are valid or whether an in-depth, qualitative approach is the way to detect and describe culture. The question is whether one, through the use of interviews and questionnaires, is only measuring superficial characteristics of an organisation – being an organisational climate – rather than the fundamental cultural values? This bears in mind that culture is based on underlying values and assumptions (Cameron, et al., 2006).

One perspective is that only by using an in-depth qualitative approach over a long period of time in which artefacts, stories and myths and interpretation are studied can an organisational culture be measured. (Cameron, et al., 2006). Another opposing perspective is that only through the use of quantitative methods can one obtain the breadth of data needed to fully define the organisational culture. This, however, is under the presumption that the individuals responding to the questionnaires or other survey forms also tell us something about the underlying assumptions

and values (culture) and not just superficial attitudes and perceptions (climate). (Cameron, et al., 2006).

5.1. Design

The paper principally uses an interpretivism paradigm in its research approach. This is due to the approach in which documents as the main data are being analysed and interpreted in an effort to create input for the CVF. This being said, the questionnaires being applied to the departments and the effort to condensate the primary and secondary data into the CVF point towards a positivistic approach in which the data are being measured and analysed in an effort to explain and foresee the Lean implementation (Saunders, et al., 2003).

The analysis is initially approached with an exploratory mindset, conducting initial searches on the internal intranet within the Armed Forces and conducting minor phone interviews in order to focus the problem area. Correspondingly, minor interviews were conducted with different departments in order to ensure that the questionnaires were adequate. Subsequently, the method approach became more descriptive, in which the presented data were analysed as objectively as possible, setting the preconditions for filling out the CVF model. Lastly, a more casual approach is used in an effort to find connections and similarities throughout the analysis to answer the problem statement.

Having historical data, it would have been possible to explain the cause and effect of the implementation of Lean into the Danish Armed Forces as well as to describe how the effect of the new Lean strategy to the culture within the Armed Forces had affected the organisation. This would, however, require that historical data were available in order to see the before and after (Ghauri, et al., 2002).

The analysis has been conducted in an inductive manner, in an effort to, through primary quantitative and secondary qualitative data, interpret data through the chosen theoretical focal point. Given the nature of the data and the method chosen, no one single dataset or observation is expected to give a definitive answer to the problem presented (Saunders, et al., 2003).

The research paradigm is often to some extent connected with the research approach/reasoning. In this case, commencing an interpretivism paradigm with an inductive reasoning, the two are well combined due to their nature (Saunders, et al., 2003).

To collect data for the CVF a primary document research approach and a comparative case study are chosen. The OCAI model, used to collect data for the CVF, is best used as a survey instrument, which would point towards a positivism paradigm with a deductive reasoning instead. However, given the time at hand, and the resources available, this was not seen as possible. Instead a small population survey using the OCAI has been conducted. This, of course, runs the risk of only defining the culture in a small part of the Army and not the entire Armed Forces, as intended in the problem statement (Cameron, et al., 2006).

The data for the paper will be gathered through public records, being internal directives and strategy guidelines within the Danish Armed Forces and through questionnaires sent out to selected departments (O'Leary, 2014).

By conducting both a secondary qualitative text analysis and a case study with primary quantitative data the potential bias in relation to interpretation of data due to my own involvement in the Armed Forces as an employee, is seen to be minimised (Bowen, 2009).

The research design/process can be summarised by using the process onion from Saunders as follows (Saunders, et al., 2003):

Analytic steps in the paper – Research design
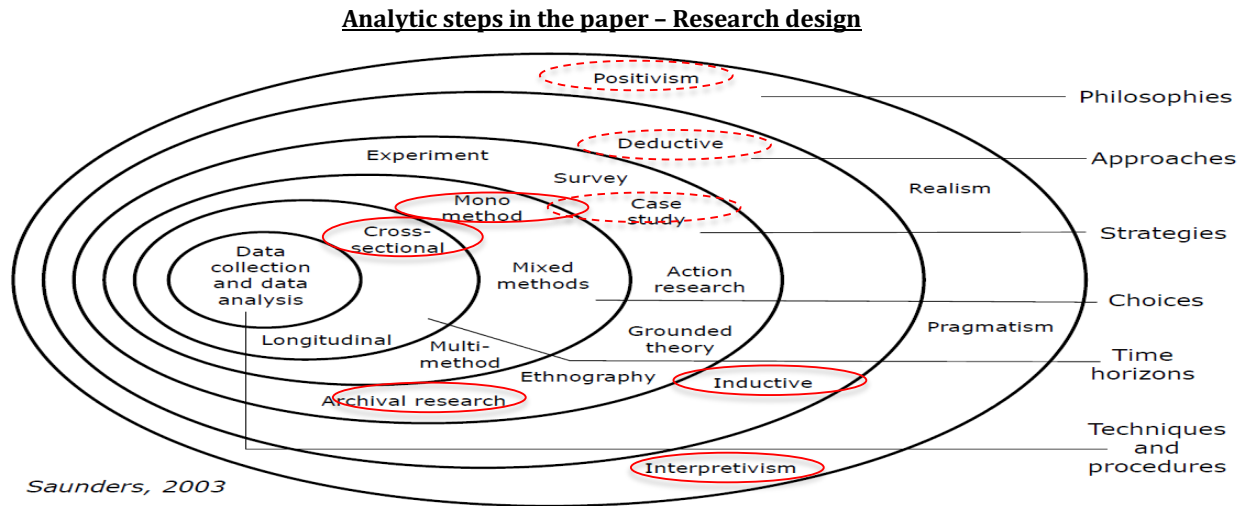
Figure 13

5.2. Data

The data for the project is primarily based on internal documents from within the Armed Forces: (1) The Managerial Foundation (2) The curriculum thought for the coming managers within the Armed Forces. (3) The Armed Forces' Mission, Vision and Strategy.

In addition, questionnaires will be used in a case study in an effort to measure the culture in departments within the Army, both those which have had success and those who have not in implementing Lean.

The data for the paper are hereby going to be a mix of, initially, secondary data, collected from the internal IT system of the Danish Armed Forces, to answer step 1 and 2 presented in Figure 12 – this being a part of the qualitative research design (Ghauri, et al., 2002). Hereafter, primary qualitative data are collected through questionnaires in order to conduct the comparative case study. It is noted that the intended population size will not sufficient to provide any final conclusions, but instead will set the preconditions for an initial analysis, providing the foundation for a further examination.

The purpose of the internal documents is to align the managing approach in the Armed Forces as well as to set the direction for how managers across the organisation are to lead their department and units. They serve as guidelines for how managers are to act and how to prioritise. Therefore, they are seen as relevant and have the desired original purpose to be used to analyse the culture within the organisation (Bowen, 2009).

5.3.   Primary data

Analytic steps in the paper – Primary data
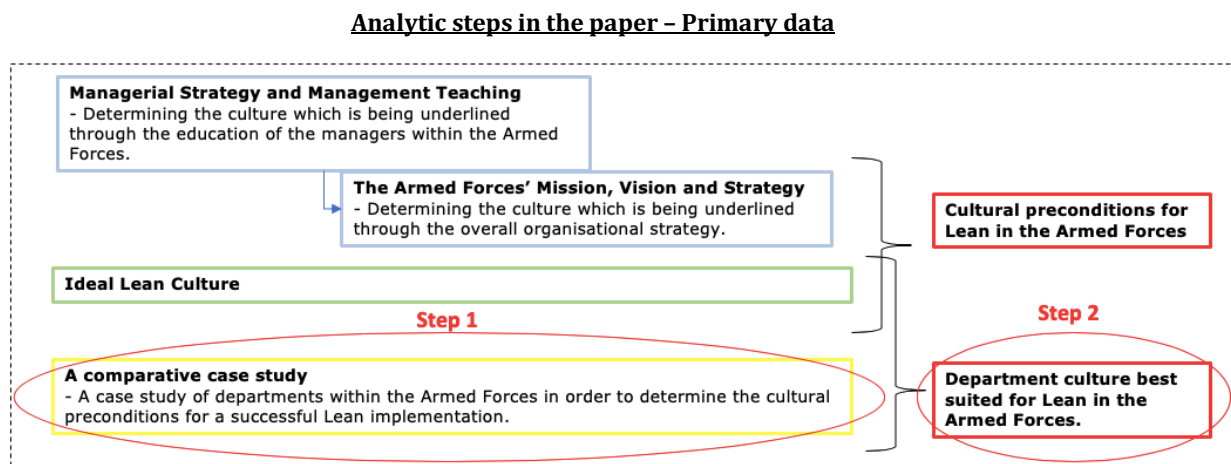
Figure 14

Primary data are collected through a questionnaire which is sent out to three different departments in the Army. The departments are chosen through an initial search on the internal intranet and subsequently by initial interviews over the phone to the found departments.
The departments selected have all at some point been deeply involved in Lean implementation within their own organisation.

The questionnaires contained the OCAI as well as a series of questions from which the following could be established. 1) The respondents' primary working tasks, thereby being able to see if there is a connection between departments' primary tasks, being production, service, or other, and the level of success with which Lean can be implemented. 2) Who in the department uses

Lean and to what extent. This gives inputs relating to how management are using Lean themselves and thereby an indication as to how well management supports the Lean implementation. Equally, it will be possible to find indication to how Lean is used in the department. 3) How Lean is used in the department. This provides an indication of whether Lean has been successfully implemented, but only regarding a number of Lean tools or if the Lean philosophy has been implemented.

The questionnaire can be seen in the appendices.

5.4.   Secondary data

The data for the paper will consist of:

A. The Danish Defence Command's Managerial Foundation (Danish Defence Command, 2008).

B. The curriculum taught to the upcoming managers at the Royal Danish Army Academy (Danish Defence Command, 1998).

C. The Danish Defence Command's Mission, Vision and Strategy (Danish Defence Command, Oct 2007).

D. The Armed Forces Strategies (Danish Defence Command, Dec 2007).

Analytic steps in the paper – Secondary data

Figure 15

The secondary data will be used in three steps:
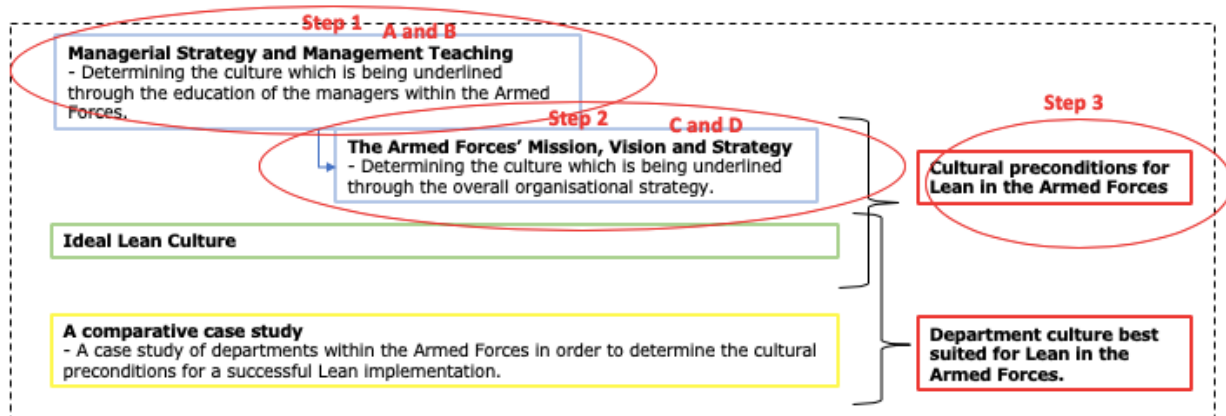
1) Initially, a comparison of the two directives/documents is conducted in an effort to analyse the coherence among the documents. This is done in order to ensure that the documents have the same direction in regard to organisational strategy, so that conclusions drawn from the different documents by the OCAI do not accumulate false conclusions due to differences between them.

2) The main document analysis of the data source will be performed in an effort to find data for the OCAI model, and from here measure the cultural direction the is being set in the documents by higher management within the Armed Forces using the CVF.

3) The culture measured in the Armed Forces will be compared with that of Lean, using the findings from Paro (Paro, et al., 2015), who found the ILC by analysing the 14 management principles in The Toyota Way, presented by Liker (Liker, 2004) (Andersen, 2009).

5.5. Data quality

The primary methodological weakness in the research design is twofold: 1) Using directives and strategies as data for an analysis leading to a model within the CVF, comes with the risk of both misinterpreting the context in the texts and hereby wrongly concluding that the written words coincide with the culture. It can be argued that the organisational culture could be entirely different from that described in the strategy. To counter this, the findings will be supplemented in a deductive manner through the paper.

By analysing the organisational strategy and curriculum it will become clear whether or not the higher management sets the preconditions in their communication to the organisation for a successful Lean implementation. However, the findings are not an actual measurement of the culture within the Army, but more a measurement of the culture which the organisational strategy strives for, and the CVF and the comparison with the ideal culture for Lean is therefore going to be a measurement of how well the Armed Forces' strategy and aims for Lean implementation are aligned.

The actual measurement of culture comes through the questionnaires, the intent of which is to, through the use of OCAI and CVF, search for any common cultural features relating to whether or not Lean has been implemented successfully.

This approach should be considered an initial approach to answer the problem statement, and the full use of, for example, an OCAI-based survey throughout a suitably sized population in the Armed Forces should be considered if a measurement of the actual organisational culture, perceived and desired by the employees, being the ones who experience and create the culture, is desired (Andersen, 2009).

Since I, as the author of the paper, am employed in same organisation I am to analyse, this can cause unintended selective perceptions and deductions, derived from my personal perceptions and understanding of the culture within the Danish Armed Forces (Andersen, 2009).
Since it has not been possible to find other cultural research of the armed forces, a comparison with the findings of others, and thereby a strengthening of the validity, will not be conducted.

6. Analysis

6.1. The Managerial Foundation

In respect to its managerial style and approach the Danish Armed Forces is fundamentally driven by the Defence Commands Managerial Foundation, "The Armed Forces Managerial Approach" which, in its current issue, is dated to 2008. (Danish Defence Command, 2008).

The managerial approach can, from many perspectives, be seen as an operationalisation of the CVF presented by Cameron and Quinn (Cameron, et al., 2006), described in the following paragraphs.

The management style promoted in the managerial foundation comes from the managerial philosophy and the managerial ethic, which together create the norms under which the managers are to conduct their leadership. (Danish Defence Command, 2008). The foundation of the approach is visualised in Figure 16.

The philosophy is defined by four managerial functions as follows: 1) Ensure results, 2) Develop relations, 3) Encourage renewal, 4) Maintain stability. These four functions are described as a focus which can both be on the external as well as the internal tasks. In this context, the time perspective becomes important for the manager in an effort to ensure the use of the correct function in relation to their current situation.

The philosophy is task-centric in accordance to Figure 17. In accordance to the managerial foundation, the mission/task is always at the centre of good managerial practice. However, it is also recognised that it is the "...people that form the management and people who are being formed by the management." (Danish Defence Command, 2008) The directive describes the employees at all levels as not only the most important resource for the organisation but also the most important potential for better solutions in the future. A good management approach is described as a balanced and holistic managerial approach. The holistic approach in regard to the four functions is the precondition to

The Danish Armed Forces Managerial approach – Approach

Figure 16

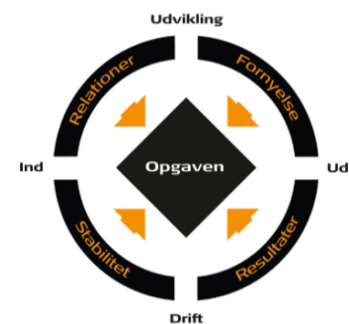**The Danish Armed Forces Managerial approach – Task centric**

Figure 17

The Danish Armed Forces Managerial approach – Balance
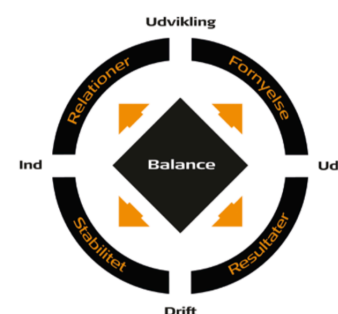
Figure 18

ensure a balanced focus on both the employees' needs as well as the needs of the organisation (Danish Defence Command, 2008). See figur 18.

Hereby the philosophy of the managerial approach within the Dansih Armed Forces recognises the need for individual managerial assesments of the specific situation in which they act as managers. The task and mission may be at the centre; however, from the long-term perspective, if the managers are not paying attention to the indivual needs of their employees, their ability to maintain effectiveness as an organisation will become at risk.

In this context, the philosophy acknowledges the need to act as both a manager and an organisation in respect to the current conditions faced. Seen in relation to the CVF presented by Cameron and Quinn (Cameron, et al., 2006), the presented models, to some extent, even by its appearence, share attributes. See Figure 19. Barring resemblence to the CVF, the model presented by the Danish Defence Command in relation to how to act as a manager within the organisation, the Armed Forces is subsequently telling its managers to balance their managerial approach to both the short-term and long-term goals as well as in reference to the employees and the actual task at hand.

The Competing Value Framework (CVF)
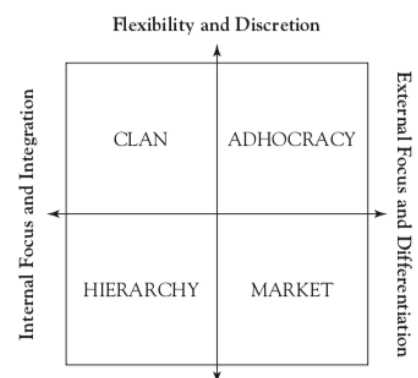
Figure 19

Comparing this approach to that of the CVF, it can be argued that the managerial approach presented by the Armed Forces is not stating one best practice for its managers to follow in respect to a desired organisational culture. Instead, it sets the preconditions for the managers to act in reference to their own understanding of the situation.

This is also in line with the basic trademark of a large organisation, which will be charaterised not by one all-encompassing organisational culture, but rather by several cultures within cultures, some being more prevalent than others in the different departments throughout the organisation, which is in perfect line with the findings of Cameron and Quinn (Cameron, et al., 2006).

In Figure 20, the CVF and the Armed Forces Managerial Foundation can be seen in a mixed figure visualising the similarities of the CVF and the Managerial Approach presented by the Danish Defence Command. The ethic is described as the trademarks of good management. The nine trademarks are: strength, courage, vision, vigour, coherence, credibility, insight, community and development, which together describe the Armed Forces' leadership ethics. That is to say, the spirit under which management must be exercised in order to fulfill the nine characteristics of good management. Any executive officer in the Armed Forces is faced with a number of requirements for the

Combining the CVF and the Managerial Foundation from the Danish Armed Forces

Figure 20

exercise of management, but also contributes to creating conditions for the exercise of leadership by others (Danish Defence Command, 2008).

The trademarks presented can be compared with the areas of focus of the four quadrants presented in the CVF. Seeing the trademarks of courage, vigour, credabillity and community as the main characteristics of the four quadrants and the other four trademarks presents the transition between the quadrants, the functions.

6.2. Managerial curriculum

With the book "Management and Education"[1], The Royal Danish Army Academy has, since 1998, taught its cadets how to conduct good and effective management (Danish Defence Command, 1998). The curriculum in reference to management and leadership involves the following theories and models: 1) McGregor´s so-called X and Y theory, which is a theory which most importantly believes in two distinct views of other people and its effect on one's choice of

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[1] Danish title: "Ledelse og Uddannelse"

managerial approach. (McGregor, 1960). 2) Adize's theory of the four managerial roles: integrator, entrepreneur, administrator and producer, by which a manager can be described. These are roles which, as is the case which the four quadrants within the CVF, all are present in the manager, with some, however, being more pronounced than others (Adizes, 2015). 3) McClelland's theory of needs in relation to what drives the motivation of manager. McClelland presents three general motivations that drive managers: need for achievement, need for power and need for affiliation (Harvad University, 2007). 4) Hersey and Blanchard's situational leadership theory, or the Situational Leadership Model. The theory, as a two-factor theory, is composed of two main variables, being task behaviour and relationship behaviour. The theory presents four managerial styles in accordance to which a manager can behave: selling/directing, telling/coaching, participating/supporting and delegating (Hersey, et al., 1969). 5) Tannenbaum and Schmidt's continuum of leadership which as a simple model presents the level of freedom a manager gives to his/her employees/teams versus the level of authority he or she imposes (Tannenbaum, et al., 1957). 6) Presthus's theory of legitimisation of the managers through either legitimacy through expertise, legitimacy through the formal role, legitimacy through sympathy and legitimacy through the manager's esteem (Presthus, 1960). 7) Hofstede's cultural dimensions theory, as a framework for cross-organisational communication. This describes the effects of a society's culture on the values of its members and how these values relate to behaviour. (Hofstede, 1980).

A common element in many of the theories presented in the curriculum for the managers within the Armed Forces is the two-factor theory, also known as Herzberg's motivation-hygiene theory or dual-factor theory. In this theory it states that there are certain factors in the workplace that create job satisfaction while a separate set of factors cause dissatisfaction. The two are seen as influencing the employees and manager independently.

With McGregor the managers become aware of the way they view their employees and just as importantly how the employees look upon each other and the manager. Consequently, the upcoming managers will be better prepared to understand the given situations in the workplace and thereby act accordingly. The manager will understand that, as people, the employees and him- or

herself will have a pre-set focal point of view in relation to how other persons are viewed, but by realising this, the managers will be better prepared to counter any inexpediencies as managers.

As with McGregor, so with Adizes. Realising that one, as a manager, has preferences in relation to how to enact management, the upcoming managers will have a broader perspective on themselves as managers as well as their employees. Thereby, they will be able to exercise management in accordance to both the situation and the personnel. In relation to their preparedness for a Lean implementation this also gives them an understanding of how to support the implementation in relation to a managerial approach towards the teams and employees. The employees' preferences in relation to Adizes' model gives the manager input in relation to how best to support the employees' embrace of Lean.

Through the understanding of McClelland's theory of needs, the manager comes to understand his/her preference's as a manager. Consequently, the manager becomes aware of his or her own person, giving them perspective. In addition, the theory does not say that one motivation is better than the other. Instead it focuses on describing what drives the motivation in the three different fundamental needs. In relation to the four quadrants of the CVF, the fundamental motivational needs within the single manager can be seen to be connected to the four cultural types. Each of the four culture types has managerial preferences, and the motivational need within the manager could very well be seen having a say in relation to which culture the manager will feel most a home. For example, social needs as a main motivation do not match well with the management culture within a Hierarchy-focused culture.

In relation to finding oneself as a manager and subsequently acting as a manager, true to oneself and with the values and beliefs from one's own person, Hersey and Blanchard, Tannenbaum and Schmidt, Presthus and Hofstede all give the same perspectives for upcoming managers. None of the theories speculate as to which managerial approach is the most successful. Instead, they all present perspectives of what good management could be, and perspectives on who the upcoming managers are themselves. The last one perhaps being the most important one, since the

upcoming managers are hereby presented with a free choice in relation to how they wish to act as managers within the organisation.

Relating to the problem statement and CVF, it could thus be speculated that by not setting a clear direction in regard to which managerial style is the most suitable for the organisation, the organisations are not creating the best possible conditions for a successful Lean implementation. If the organisation at a strategic level introduces Lean, it can be argued that they also set the direction for how to do so, knowing what it takes in relation to managers and organisational culture. Therefore, if one specified culture should be allowed to flourish within the organisation, in order to support the Lean implementation, the curriculum should perhaps be more targeted towards this goal.

On the other hand, the curriculum supports the aforementioned managerial foundation very well. From this perspective, the curriculum supports the managerial approach in which the diversity of managers and employees is what drives the organisation towards future goals (Danish Defence Command, 2008). Moreover, by having diversity among its managers the organisation embraces the fact that sub-cultures will be present all over the organisation. Given the size of the Armed Forces, trying to enforce one single managerial style and culture throughout the organisation is most likely going to fail and will also create a rift between the employees and the management level, since the managerial approach will become impersonal and not adapted to the given situations (Cameron, et al., 2006). Adizes describes a potential uniformity among managers as a potential threat to the organisation. If the managers all look alike and do not allow new perspectives among their ranks it could potentially become a cancer within the organisation (Adizes, 2015). From this perspective, the lack of one single direction in relation to the curriculum is perhaps not a sign of a disconnection to the overall organisational strategy, but more a question of embracing variation among the managers in order to ensure a healthy organisation.

6.3. Summary

Looking at the managerial approach presented as the organisational way in the Armed Forces, described in the Managerial Foundation, it is seen that the Danish Armed Forces do not intend to foster one specific managerial approach in the organisation. Instead, they present a management model which in many ways is comparable with the CVF. This is a model which underlines the importance of a balanced management approach, accepting that the best managerial approach is often derived from the context which the managers find themselves in, and not in an organisational strategy.

Managerial approach – Competing Value Framework
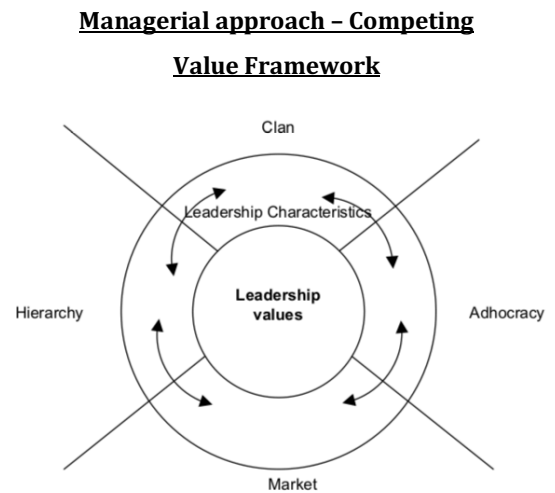
The managers are to define their own reality through the context under which they are operating, and, in this context, they are to enact best practice management in respect to all the competencies and ethics presented in the overall managerial strategy presented.

From this perspective, the managerial approach presented by the Danish Armed Forces does apparently not hinder the successful implementation of Lean. It does not propose a managerial culture which does not fall in line with that of Lean. However, it could be argued that, by not being precise in its organisational cultural preference, the Danish Armed Forces leave a space for the managers to choose a managerial preference, in contrast to what is best suited for Lean, thereby setting the precondition for a hindrance by not being more precise in its cultural strategy through the managerial approach.

6.4. The Danish Defence Command Mission, Vision and Strategy

The Danish Armed Forces is currently communicating its strategy for the entire organisation through three documents. 1) Danish Defence Commands Vision and Mission (Danish Defence Command, Oct 2007), 2) Danish Defence Command Strategies (Danish Defence Command, Dec 2007), and 3) Danish Defence Command – Managerial Foundation (Danish Defence Command,

2008). Through these documents the organisation sets the strategic direction for the organisation to follow and thereby a way for the higher management to shift the strategic course of the organisation if they see the need.

The documents can be seen as the opinion of the Danish Defence Command, being the higher management of the Danish Armed Forces. Subsequently, they can be subject to an analysis in order to see if they leave room for the implementation of Lean and thereby provide explanatory elements in relation to the problem statement.

An analysis of the documents was conducted in an effort to find explanatory elements in the text which could point towards a cultural preference in relation to the four quadrants in the competing value framework. The findings can be found in Appendix 12.2 "OCAI for The Armed Forces' Mission, Vision and Strategy" in the form of a filled-out OCAI questionnaire with references to the documents.

The overall text analysis gave the findings presented in the table below. The findings are visualised in the CVF in Figure 22. As shown, no distinct cultural preference can be said to be present. However, with the Adhocracy culture only scoring 95 points, it seems like this culture is the least preferred one for the Danish Defence Command. The Hierarchy culture, Market culture and the Clan culture all score around 160-175 points, being nearly the same, while also being close to the overall median of 150. This could point towards it only being the Adhocracy culture which is not desired in the organisational strategy.

OCAI of the Danish Armed Forces – A text analysis

OCAI score – Danish Armed Forces' Vision, Mission and Strategy A text analysis				
	A	B	C	D
Question 1: Dominant Characteristics	25	10	25	40
Question 2: Organisational Leadership	40	20	10	30
Question 3: Management of Employees	20	10	35	35
Question 4: Organisation Glue	25	25	25	25
Question 5: Strategic Emphases	40	10	25	25
Question 6: Criteria of Success	25	10	45	20
Sum	160	95	160	175
Average	27	16	27	29

CVF score - The Danish Armed Forces' strategic focus in strategy, vision and mission
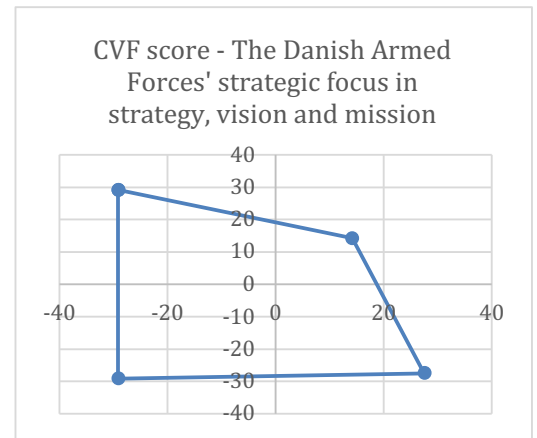
Figure 22

Dominant characteristics

Through the analysis of the document, elements pointed towards the Hierarchy culture as being the most desired cultural focus. The Hierarchy culture scored 40 points, being significantly higher than the Adhocracy culture, scoring only 10 points. The Market culture and the Clan culture each scored 25 points. See Figure 23.

The Danish Defence Command states in their Strategy and Managerial Foundation that they want a defence force in which both employees as well as the manager involve themselves in the shaping of the organisation. The importance of a *free and open debate culture* is underlined, as well as the necessity of *sharing one's experience* with each other in order for everyone else to gain from them. The managers and employees are asked to *be a part of the forming and shaping of the organisation*, hereby *participating* as both employees as well as individual persons in the organisation (Danish Defence Command, Dec 2007) (Danish Defence Command, 2008).

These elements together point towards the Clan culture, in which the organisation is seen as an extended family in which the employees involve themselves. The Clan culture scores 25 points.

With only limited references talking about participation, innovation and the involvement from the employees in the organisation, the Adhocracy culture scored only 10 points, thereby being the least favoured culture communicated to the organisation by the Danish Defence Command.

The Market culture scores 25 points. Text elements pointed toward the need for *will to achieve the organisational goal* as well as the *perseverance*. Moreover, it highlights that the *organisational task is always to be considered at the centre* of both employees' and managers' attention and focus. These elements point towards a competitive and results-orientated organisation, aligned to the Market culture.

The Hierarchy culture scores highest in the text analysis. With a 40-point score, it is seen as the dominant feature among the four quadrants. In the text, values such as: *optimisation of resource use, focus on quality and improvements and organisational lead experience sharing*, are stressed as important for the organisation. These are all indications towards an organisation which sees itself as a structured place with clear procedures to ensure quality and control. Accordingly, it can be stated that a Hierarchy-like culture is desired, in which procedures and structure are a dominant characteristic.
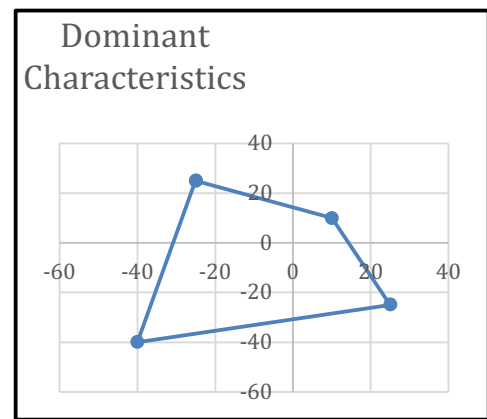
Figure 23

Organisational leadership

The Clan culture is profound from the perspective of the organisational leadership, scoring 40 points. Meanwhile, the other three quadrants score 10-30 points, the leadership in the Armed Forces seems to be desired to be conducted in a Clan-like cultural approach. See Figure 24.

With a series of paragraphs relating to how the manager is to: incorporate the experience and knowledge from their employees; ensure common understanding and acceptance in relation to

the work at hand among employees and managers and ensure the best possible conditions for their teams and employees in order for them to solve the tasks, a number of references in the documents point towards a Clan-like culture. In addition, actively incorporating the values, ethics and knowledge from the employees is seen as an area of focus. With a number of references the texts give examples of how the managers are to see themselves as facilitators and mentors for the teams and employees. These are also elements comparable with the focus areas within the Clan culture.

Other focus areas in the documents are seen as being the *willingness to take risks, being able to think out of the box, flexibility in managerial approach and adaptation and initiative*. These are all elements which can be seen as focus areas in the Adhocracy culture. There is, however, only a limited number of references, for which reason the quadrant only scores a total of 20 points.

Due to the lack of references, the Clan culture only scores 10 points. There are wordings that focus on a *solid and efficient task solving* in the organisation in order to ensure the *archival of current and future goals*, as well as an emphasis of the organisation being able to build sufficient energy and will to *achieve solid results*. These are all elements which bear resemblance to the Market culture, which focuses on no-nonsense, aggressive, results-oriented management.

Compared to the Market culture the Hierarchy culture is seen as having more than twice as many paragraphs referring to it. In addition, the contents and wordings indicate the same level of importance as did those referring to the Market culture. The references focus on the ability to handle *optimisation* of the administrative tasks, *standardized task solving*, effectiveness and uniformity in processes and above all, structure. This all indicates that a smooth running and well-structured workplace is considered important to the organisation, meaning that a

Figure 24

Hierarchy-like culture is being focused upon, thus scoring 30 points.

Overall, it can be seen that the Clan culture, with 40 points, is the most pronounced culture in regard to organisational leadership. However, perhaps more importantly it can be seen that the Market culture scores very low, which is in contrast to both overall score and the intent described in the Managerial Foundation, where the diversity among managers is seen as a key strength for the organisation, a diversity which would point towards a more even distribution among the four. (Danish Defence Command, 2008).

<u>Management of employees</u>

With a distribution of points ranging from 10 to 35, the culture desired when it comes to how to manage the employees seems to be that of either Market or Hierarchy, each scoring 35 points. Leaving the Adhocracy with only 10 points.

Teamwork, *consensus* and *participation* are presented as important matters in relation to how the organisation is to manage the employees. This is, among others, presented in the Strategy, which states that *diversity* and *contributions* for the finishing products is of great importance to the overall organisational strategy (Danish Defence Command, Dec 2007)*.* These are elements pointing towards a Clan culture, in which these are the areas of focus. To some extent these could also be seen as elements pointing towards the Hierarchy culture, given the internal focus, however, not focusing on stability and control, they are primarily seen as arguments for a Clan-like culture.

With only two paragraphs arguing for an Adhocracy culture in the presented texts, the quadrant only scores 10 points. The few that refer to the quadrant are describing the need for employee commitment in relation to initiative and responsibility and the managers' courage in their managerial approach (Danish Defence Command, Oct 2007). These are compatible with the focus areas of the Adhocracy culture.

The Market culture and the Hierarchy culture score an equal amount of points, each receiving 35. The Market culture is seen to be described in the texts with *tasks and objective-centred* wordings, which, given the nature of an army, can be a matter of life and death to both the employees themselves and others. Perhaps the most direct link to the Market culture comes from the Marginal Foundation, in which the employees are reminded that a time can come where they are expected to put their own and the lives of others at risk for the sake of the greater good (Danish Defence Command, 2008)*.* Other similar paragraphs describe the necessity for the management style of the employees to be focused on *high demands* an *achievement*. This is, of course, with respect to the time perspective, in which the hard-driven soldiers' mindset, thinking of life and death, only becomes a matter of focus when engaging in conflicts.

The Hierarchy culture scores 35 points, the same as the Market culture, having elements and paras from the documents focusing on the organisational design and resources and maintaining a focus on the employees in order to maintain stability. The reference point towards the organisation being able to uphold a robust, organic and collaborative entity. To do so the units need time, security and stability. This means that there has to be a focus on holding on to the employees in order for the organisation to succeed, thereby focusing on conformity and employment.
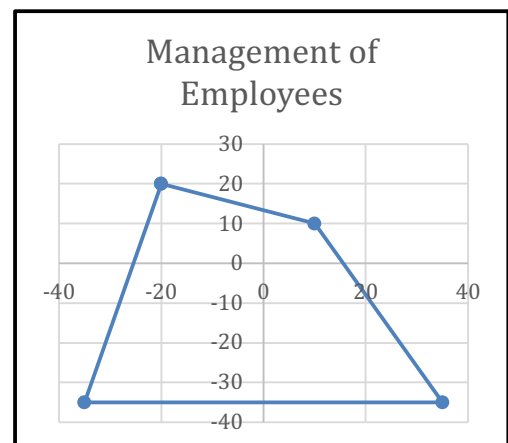
Figure 25

Being primarily focused on the Market and Hierarchy culture, the emphasis is on stability and control in relation to the management of the employees. At least this is what the Danish Defence Command communicates in their Managerial Foundation and Mission vision and strategy directives. There are still seen some elements in all four quadrants, thus providing a connection to the diversity focus in the Managerial Foundation (Danish Defence Command, 2008).

<u>Organisational Glue</u>

The score in the OCAI regarding the preference in relation to the organisational glue that holds the organisation together is distributed evenly, with 25 points for each of the four characteristics. In the documents analysed, only a limited number of references were found, all distributing themselves evenly in the OCAI. No clear preferences of what holds the organisation together can thereby be presented.

In the texts both the Strategy and the Managerial Foundation stress the importance of mutual trust, cohesion and loyalty towards each other and the organisation, all elements which are characterized by the Clan culture. The reference points towards the fact that being in an army, going into combat and crisis areas is a part of the job, which brings a need for an organisational glue which is not dependent on formal structures, but can instead relies on commitment among the employees.

The focus areas within the Adhocracy culture are, in the documents, mentioned through wordings as *commitment*, *contribution* and a *strategy for the future* involving that the Armed Forces stay ahead as one of the leading military forces regarding training and equipment. Hereby, the references, however few there are, seem to prioritise an Adhocracy culture. Reading through the entire mission, vision and strategy directives, it becomes clear that *staying on the cutting edge* of development and subsequently staying relevant for their partners in NATO is important for the Danish Defence Command.

With the task being at the centre of attention within the Managerial Foundation, it seems evident that the glue that holds the organisation together is the accomplishment of those tasks (Danish Defence Command, 2008). In the mission and vision document it states that the Armed Forces is to be perceived as one coherent organisation with one common goal. The point in focus being the emphasis on the goal, being an objective for the entire organisation, as a way of thinking both daily and in the long-term. Thereby the focus comes to centre around the Market culture, in which the goal accomplishment is what holds the organisation together.

The texts emphasise the need to continuously actively control and optimise the organisational as a strategic point. Moreover, they state that the goals are dimensional for the organisation and

that the organisation is to adapt in accordance to them. Therefore, in the strategy it is the organisation as a whole that adjusts the organisational structure and ensures that the organisation keeps up with the demands. It is the Armed Forces as an organisation that will ensure that the rest of the organisation adjusts in accordance with the rest of society. Consequently, it is seen as a senior management decision to conduct changes and to ensure the overall success. These elements point towards a Hierarchy culture.
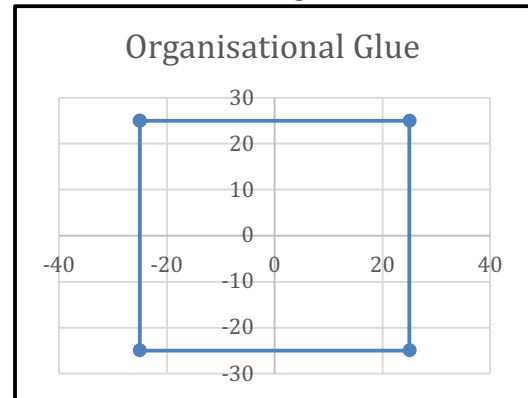
Figure 26

Therefore, with no clear preferences in regard to the organisational glue that holds the organisation together, this item seems to fulfil the intent presented in the Managerial Foundation, where diversity among employees and manager was prioritised (Danish Defence Command, 2008).

<u>Strategic emphasis</u>

With a score distribution ranging from 40 to the Clan culture and only 10 points to the Adhocracy culture, clear preferences seem to be evident regarding the strategic emphasis.

Being an *attractive place to work, ensuring employee competence development* and *ensuring a free and informal debate culture* are just some of the areas of focus in the texts which all point towards the Clan culture. Moreover, it states that the management is to *facilitate and support the human relationships* both internally and externally in order to ensure *healthy lives and working conditions* for the employees (Danish Defence Command, 2008), thus focusing on the human relations and the working conditions for the employees. These are elements comparable with the Clan culture, scoring 40 points.

With a very limited number of references found, the Adhocracy culture only scores 10 points. In the texts, it is stated that, among other factors, the Armed Forces is to be a challenging place to work, one that attracts, inspires and develops good employees (Danish Defence Command, Oct 2007). This thus emphasises the value of inspiration of the employees and of ensuring continuous challenges, being elements pointing towards the Adhocracy culture.

Setting up high ambitions for the organisation, a number of references point towards elements of a Market culture. These, among others, include that the organisation is to be market-leading within the public sector and the organisation should be able to compare itself with its NATO partners. Emphasising that the Armed Forces is to strive at being the best in regard to both the administrative part as well as the operational part, the focus is pointed towards the control dimension which, combined with the external focus, offers indications of a Market culture. For a country the size of Denmark, it can be seen as a high bar to put up, to be able to measure its success with allied armies as Germany, Norway and others. This, of course, does not necessarily mean a numerical comparison. Nevertheless, the references focus on hitting stretch targets and competitive actions, pointing towards a Market culture.

With wordings such as *continuality*, *streamlining process*, *optimising* and *control* a number of references point towards a Hierarchy culture being emphasised in the analysed texts; all elements bearing a resemblance to the focus areas of Hierarchy culture, being dimensionally defined as having focus on stability and control and an internal focus. In the strategy it states that the Armed Forces are to be in a state of continual development, by actively controlling and optimising the organisation (Danish Defence Command, Dec 2007). Focus-

Figure 27

ing on *control* and *optimisations*, the reference can be seen as arguments for a Hierarchy culture.
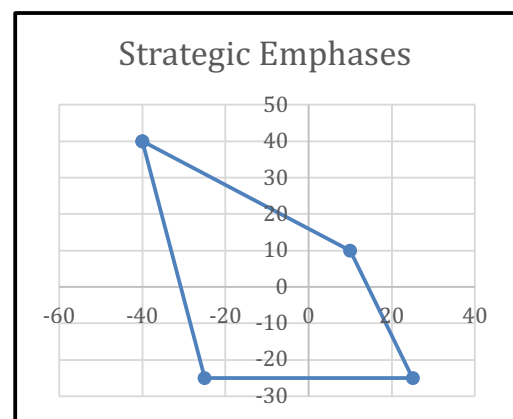
With an apparently distinct focus on the Clan culture, followed closely by the Market and Hierarchy culture, the strategic emphasis in the Danish Defence Command's communication to the organisation seems to follow the same trend as the other items within the OCAI. Specifically, it is a trend where the Adhocracy culture is downscaled in favour of the other three cultures.

Criteria of Success

With a score division among the four quadrants ranging from 10 to 45, the cultural criteria for success seems to focus on the Market culture, disregarding the Adhocracy culture.

By underlining the need to remain an *attractive workplace* and stressing the need to ensure a *healthy working environment*, elements point towards a Clan culture in regard to the criteria for success. Moreover, it is stressed that the organisation is to *take care of* its employees and be responsible as an employer by taking a co-*responsibility for the mental and physical health* of the employees. In so doing, a focus on the commitment and a concern for the employees is being emphasised, arguing for a Clan-like culture, scoring 25 points (Danish Defence Command, Dec 2007).

In the mission and vision published by the Danish Defence Command they emphasise the need to *think new* and to *be ahead of the development*. (Danish Defence Command, Oct 2007) By emphasising the need to be innovative by thinking new, it could be argued that a Adhocracy culture is desired. However, with only one reference in the documents, the argument becomes somewhat moot and the Adhocracy culture scores only 10 points.

The ambitions are to be *among the leading developers* within the public sector. This not only in regard to public management, but also when it comes to be *leading within management, human resources, pedagogy, information and communication*. The necessity for the soldiers to be able to *fight and win* and to be *among the best* in the future is also stressed multiple times. The Danish Defence Command wants the organisation to prioritise *being among the best at what they do*, and

if this cannot be achieved, then it is seen as better to focus on those areas where it can, disregarding the others. This focus on a competitive environment in which winning and staying ahead of the others bears a resemblance with the Market culture. Scoring 45 points, the Market culture thus becomes the dominant characteristic in regard to the criteria of Success.

Looking at the Hierarchy culture, staying in the Stability and Control area but now having an internal focus, elements of the texts argue for *controlling through directives*, focusing on *decision processes*. Moreover, the managers are in the texts' tasks with ensuring an *optimisation and effectiveness in the organisational processes* as well as ensuring a *healthy ethic* in the departments. These elements point towards the Hierarchy culture in which smooth scheduling and low-cost production are critical, and thereby the Hierarchy culture scores a total of 20 points.

Figure 28

The criteria for success communicated in the organisation seems to favour a Market-like culture, and once again the Adhocracy culture shows a tendency to be the least favoured culture of the four.
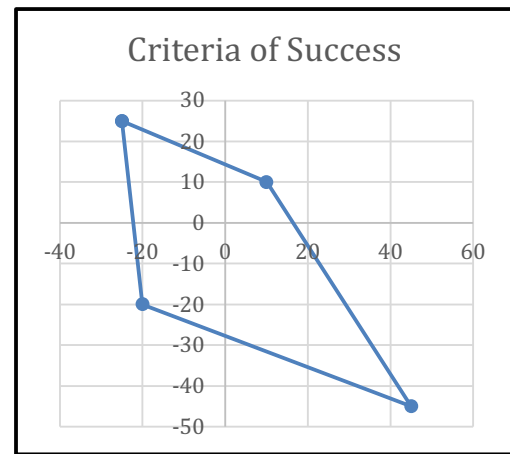
6.5. The implementation of Lean in the departments

Lean as a corporate strategy was initially implemented in order to reduce waste and subsequently create savings. Lean has been implemented throughout the entire organisation as a means towards an end, but the success of the implementation varies greatly.

Through an initial analysis, different departments were identified as subjects for a further analysis. The departments had all been working actively with Lean, but the implementation success seemed to vary. The departments all had a Lean specialist who functioned as an extended arm for the Lean Competence Centre, created by the Danish Defence Command in order to support the implementation of Lean within the organisation. Accordingly, the different departments all had

specially trained Lean managers, who were all a part of the Armed Forces, yet had very different experiences of the use of Lean.

The departments used for the analysis are: 1) FMI – LA, which is a department within the Materials and Logistics branch of the Armed Forces, specialised in land military operations and materials. 2) FMI – PK, which is a department within the Materials and Logistics branch of the Armed Forces, specialised within processes and procurement. 3) TRR – Logistics battalion within the Army, tasked with suppling combat troops during operations and deployments.

All departments were given a questionnaire with questions regarding the Lean implementation success, the use of Lean and the OCAI. See Appendix 12.4 "Questionnaire for the departments".

The questionnaires were sent to the Lean ambassadors within the departments in order to ensure a common understanding of what Lean is and thereby ensure a more qualified analysis.

Around 8-12 suitable questionnaires were returned from the different departments, which provided the data for the analysis. The population size was taken into consideration, and the findings will only be elements pointing towards a direction, not finalised conclusions.

In order to create compatible data, the answers from the departments are weighted in respect to a mean value, ensuring that the number of answers from the different departments will not in themselves influence the results.

<u>Lean implementation success</u>

In order to establish to what extent Lean implementation is a success within the three departments, a series of questions are presented to the Lean ambassadors from the different departments. The questions are centred around what Lean is used for in the department and to what extent.

The intention is to establish whether Lean is implemented at all, if it has been implemented as only a set of practical tools, or if the Lean philosophy as a whole is being embraced.

The Lean implementation success is found to be the greatest at the TRR department, in which some elements pointed towards the department using the Lean philosophy as an integrated part of their daily work as well as using Lean tools to reduce waste. In the departments of FMI-PK and FMI-LA, the Lean implementation is found to be less successful. Lean is described as having been implemented but not actively used, and at best used as a set of tools, not as a strategy and a new way of thinking. See Figure 29.

With both FMI-LA and FMI-PK scoring relatively highly, while TRR scoring low, some indications are given that Lean has primarily been implemented to the extent that it provides a new set of practical tools for the departments, not as a new way of thinking. See statement 1 in Figure 29.

With only one department scoring statement two, relating to Lean being actively used as a set of tools by both the department and higher management, it seems like it is primarily the depart-ments themselves that are using Lean and not so much the department above them. In relation to the findings of Laureani in 2012, this could point towards the culture not being the main obstacle for the implementation as much as the commitment of the higher management (Laureani, et al., 2012). See statement 2 in Figure 29.

Being the only department, which believes that Lean has been successfully implemented as a new way of thinking for both managers and employees, the TRR department scores highly in state-ment three in Figure 29. The other two departments thereby indicate that the Lean implementa-tion has at best provided them with a new set of practical tools or that the implementation is only successful at the lower level. Having scored three and four in statement one, both FMI-LA and FMI-PK apparently see the Lean implementation as having primarily given them new tools to re-duce waste, and not a new continuous way of acting and thinking, see Figure 29, thereby indicat-ing that the Lean way of thinking is not implemented.

All three departments score highly in regard to the statement that Lean has been implemented but is not actively used. See statement five in Figure 29. Consequently, this indicates that, to the best of their knowledge as trained ambassadors for the Lean Competence Centre, Lean is not actively used as intended.

With a scoring of three the department of FMI-PK is the only one which indicates that Lean is not at all used anymore, even though it was introduced and attempted to be implemented. See statement five. This could either indicate that the success rate of the Lean implementation is here the lowest or, in relation to the other statements from the department, that the "right" Lean is not implemented in the department. Accordingly, being a Lean ambassador, having introduced practical tools that come from the Lean concept, does not equal having implemented Lean as a whole.
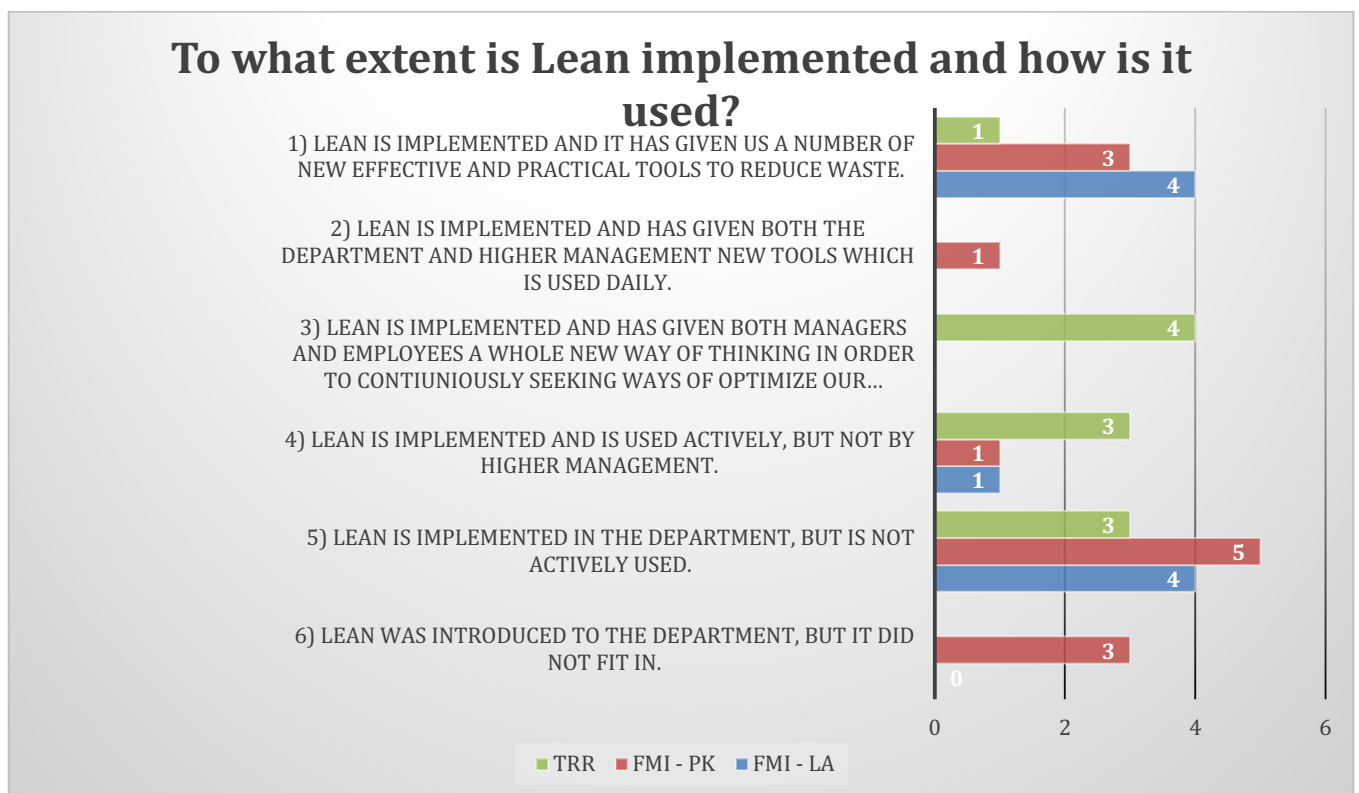
Figure 29

Looking at the implementation success in relation to the three different departments in Figure 30 it seems evident that the TRR department is more successful in the implementation of Lean. Scoring the highest in all statements, the TRR scores an overall mean of 22, while both FMI departments score 15.

	Mean overall score
FMI - LA	15
FMI - PK	15
TRR	22

Both statements one and two in Figure 30 indicate that Lean as a concept as well as a set of tools is successfully implemented. However, in only scoring half of the potential 40 points, FMI-LA is lacking behind.

Having all departments scoring around three quarters in statement three, regarding the management being willing to listen to optimisation suggestions from the employees, a counterargument for the lack of involvement from higher management is seen to be indicated. Whether this is due to the understanding of which level of management it is that is unwilling or if it is due to listening but not acting managers is however, hard to conclude.

Scoring around half of the maximum, all departments indicate in their answers to statement four and five the management is willing to invest time and resources in the Lean implementation, thereby indicating a long-term orientation. In only scoring half, it could be argued that the management is not doing enough in relation to either investments or long-term planning to support the Lean implementation – at least not enough in the opinion of the Lean ambassadors in the different departments. However, scoring three quarters, the TRR management is, in statement six, recognised for using Lean actively, thereby committing themselves to the implementation.

Whether or not to qualify the implementation of Lean in the TRR department as a success, scoring around one third of the maximum points, is seen as important for the further analysis. If the implementation is acknowledged as a success, then the findings in the CVF for the TRR

department will perhaps give some indication of which culture is best suited for Lean in the Armed Forces. However, if the implementation is not acknowledged to be a success, then the reason could perhaps be found in a comparison between the ILC presented by Paro and Gerolamo, as discussed in the methods section (Paro, et al., 2015).

Scoring lowest in statement four and five, centred around the willingness to invest in the Lean implementation and the management's use of Lean in their long-term planning, it could be seen as indications towards the Lean philosophy not being fully implemented, but instead only the tools from Lean. In statement 6, Figure 30, the management is recognised for using Lean in their daily managerial approach. However, this can very well be seen as only the tools of Lean, thereby supporting the idea of the Lean philosophy not being fully embraced.

Conducting interviews with two of the respondents from the TRR department, it became evident that what they are currently experiencing in regard to Lean is primarily concepts and tools related to Lean (Manager TRR, 2019). Among other factors, the two interviewees focused on the "Board Meetings", their focus on "Takt Time" and "Just in Time" as well as their use of performance management meetings, all elements which can be categorised as Lean tools and not necessarily an indication of a Lean Philosophy.
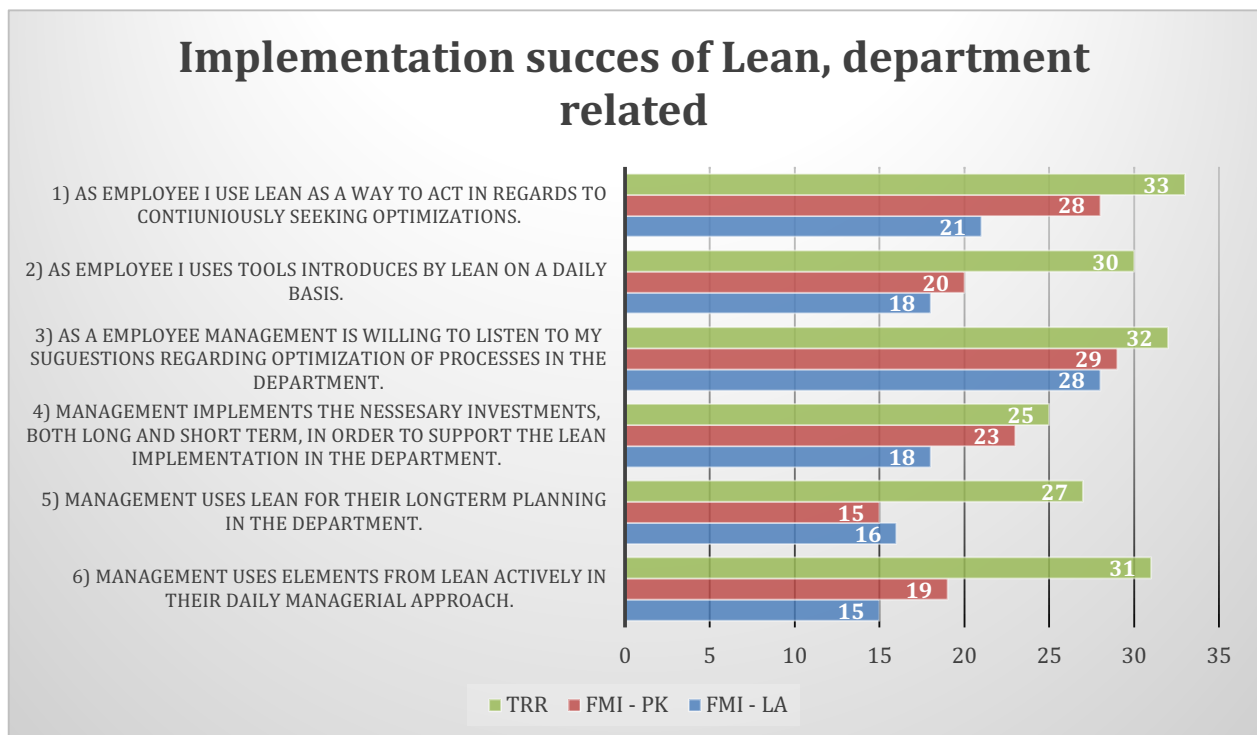
Figure 30

Looking at the different areas of work instead of the different departments, see Figure 31, some indications are evident that Lean has been best implemented in management areas, while Lean ambassadors being primarily occupied with administration scores the lowest in the overall Lean implementation success.

Especially when it comes to the continuous use of Lean to optimise processes, statement one, and the willingness of the manager to listen to optimisation suggestions, statement three, Lean ambassadors working within management score high, respectively 4 and 4, thereby scoring a quarter higher than the scoring related to ambassadors working with administration.

Focusing on statements four to six, all being centred around the higher management and their use of Lean, it can be seen that the scoring is lower than in the other statements, indicating that Lean is mostly implemented in the lower organisational levels and is not sufficiently supported by higher management. However, scoring 3, 3 and 4 respectively, ambassadors occupied with

management do not share this opinion. This opposing indication could perhaps by explained by the ambassadors occupied with management's own involvement in the managerial process and thereby scoring the statements in relation to their own involvement in the use of Lean.

Work-related implementation success of Lean (a mean comparison)

Statement	Project management	Management	Administration
1) AS AN EMPLOYEE I USE LEAN AS A WAY TO ACT IN REGARDS TO CONTINOUSLY SEEKING OPTIMIZATIONS.	3	4	3
2) AS AN EMPLOYEE I USE TOOLS INTRODUCED BY LEAN ON A DAILY BASIS.	3	3	3
3) AS AN EMPLOYEE, MANAGEMENT IS WILLING TO LISTEN TO MY SUGUESTIONS REGARDING OPTIMISATION OF PROCESSES IN THE DEPARTMENT.	3	4	4
4) MANAGEMENT IMPLEMENTS THE NESSESARY INVESTMENTS, BOTH LONG- AND SHORT-TERM, IN ORDER TO SUPPORT THE LEAN IMPLEMENTATION IN THE DEPARTMENT.	3	3	2
5) MANAGEMENT USE LEAN FOR THEIR LONG-TERM PLANNING IN THE DEPARTMENT.	2	3	2
6) MANAGEMENT USE ELEMENTS FROM LEAN ACTIVELY IN THEIR DAILY MANAGERIAL APPROACH.	2	4	2

Figure 31

Combining the CVFs found

Analysing the CVFs found from the three different departments, no clear connection between a successful Lean implementation and organisational culture is found.

With both the FMI-LA and the FMI-PK scoring low in relation to the implementation success experienced by the Lean ambassadors answering the questionnaire presented, cultural tendencies

in the two departments could perhaps give some indication of a connection between Lean implementation success and culture.

The FMI-LA department, whose CVF is presented in Figure 32, is seen to be dominated by a Clan culture, scoring 272 points. In addition, the Hierarchy culture scores relatively highly, with 249 points, indicating that the department has an internal focus and integration as their main characteristic.

CVF - FMI-LA

Perceived Culture   Desired Culture

Figure 32

Analysing the different characteristics within the FMI-LA department, the same tendency is seen in all six items. See Appendix 12.5 "Data from the questionnaires". However, looking at the dominant characteristic of FMI-LA it becomes evident that there is a mismatch between which culture is perceived and which culture is preferred. This can be seen as an indication of a source of some of the frustration relating to how Lean is implemented as presented above and to how the Lean ambassador sees Lean to be best implemented.

FMI-LA: Dominant Characteristics

Perciced Culture   Desired Culture
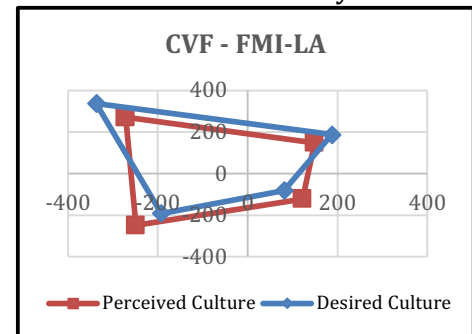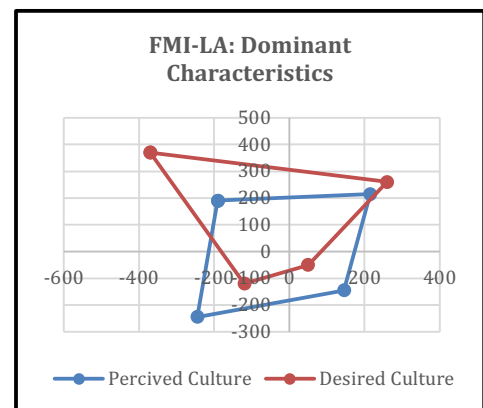
Figure 33

The FMI-PK department is also dominated with an internal focus and integration, as depicted in Figure 34. The main difference between the two FMI departments is seen in the focus on the Adhocracy culture, where the FMI-PK departments scores higher, at the expense of the Market culture.

The desire for an Adhocracy culture also seems more dominant in the FMI-PK. This correlates with some differences between the perceived culture and the desired one, where the Adhocracy culture and the Hierarchy culture score respectively 67 points more and 80 points less in regard to the cultural preference in the department. This desired culture within the FMI-PK thereby becomes dominated with a focus on flexibility and freedom to act, characterised by Clan and Adhocracy culture.

Primarily, the dominant characteristic in the analysis of the FMI-PK CVF, is interesting in relation to finding the source of the mismatch between the perceived and preferred culture within the department. With a difference of 135 points between the two, the Adhocracy culture is considered more dominant in the department then it is currently perceived. See Appendix 12.5 for more information.
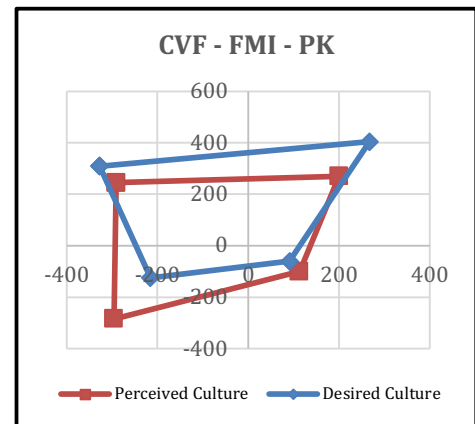
Figure 34

The CVF found for the TRR department indicates a solid match between which culture is perceived in the department and which culture is desired. See Figure 35. This could lead one to conclude that the Lean ambassador providing the data for the OCAI is satisfied with the culture in their department. This alone could perhaps give some explanation of the success regarding Lean implementation. This presupposes that being satisfied with the culture within the department is also an indication of satisfied employees, which then again could be an indication of an environment in which all implementation will be smoother.
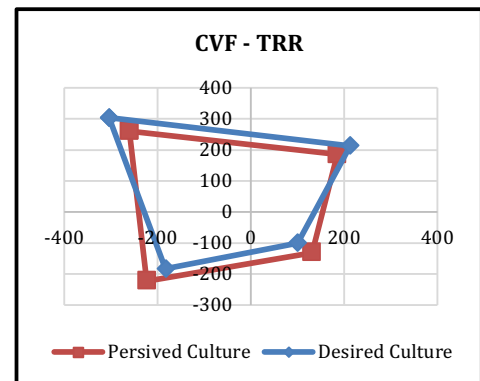
Figure 35

Scoring 260 and 223 for the Clan culture and the Hierarchy culture respectively, the dominant dimension within the TRR is seen as an internal focus and integration, as was the case with the two FMI departments.

In performing an overall comparison of the numbers presented in Figure 36, it can be seen that the Market culture is the least desired culture in all three departments, in respect to both the perceived culture and the preferred one. This indicates that a culture which is very concerned with

getting the job done and thereby results-orientated – creating a competitive environment – is not preferred in either of the departments.

The Adhocracy culture scores the second lowest in respect to the perceived culture. However, in the preferred culture, it is the second highest in the FMI-PK and the TRR departments.

Overall OCAI score for the departments and the differences												
	Perceived				Desired				Differences between perceived and desired			
	Clan	Adhocracy	Market	Hierarchy	Clan	Adhocracy	Market	Hierarchy	Clan	Adhocracy	Market	Hierarchy
FMI - LA	272	149	123	249	338	188	81	193	66	38	-42	-57
FMI - PK	291	200	113	296	328	267	91	216	37	67	-22	-80
TRR	260	186	131	223	304	213	100	183	44	28	-31	-40
Total	823	535	367	768	969	668	272	591	146	133	-95	-177

Figure 36

The Clan culture scores the highest in both the perceived and the preferred culture in all three departments. With one exception, the FMI-PK department perceives the Hierarchy culture as weighing just 5 points more the Clan culture, however it still prefers the Clan culture over the Hierarchy culture – with 51 points.

Looking at the differences between the perceived and desired cultures in the departments presented in Figure 36, it comes evident that the Market culture and the Hierarchy culture are preferred as less dominant than they are currently perceived, while the Clan and Adhocracy culture are preferred and more dominant than at the present state. This thereby indicates that there is a desire for more flexibility and freedom to act at the expense of control and stability.

In performing an overall CVF analysis, Figure 37 is presented. A clear dominance of the Clan and Hierarchy culture can be detected in the perceived culture. The preferred culture can, however, be seen as less Hierarchy-dominated and instead focusing on the Clan and Adhocracy cultures, as described above.

Figure 37

Looking at the data, the highest and lowest scoring culture in relation to both perceived and desired state can be found. Not surprisingly, the Clan culture is the highest scoring quadrant among the four while the Market culture is the lowest scoring culture. With the data from Figure 36, Figure 38 presents a graph focusing on the lowest and highest ten scoring cultural preferences in the three departments.

Figure 38

Ranking highest and lowest ten scores from the three departments and from the overall CVF, it can be seen that the Market culture is represented 3-4 times among the lowest scoring cultures perceived and 5 times among the least preferred cultures. Consequently, the Market culture scores lowest a total of 8-9 times as the least perceived and desired culture in the departments.
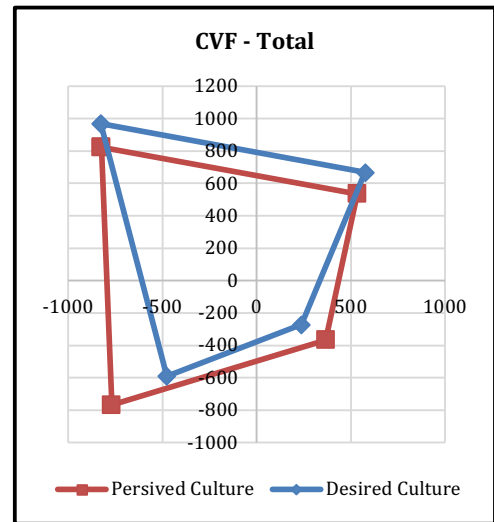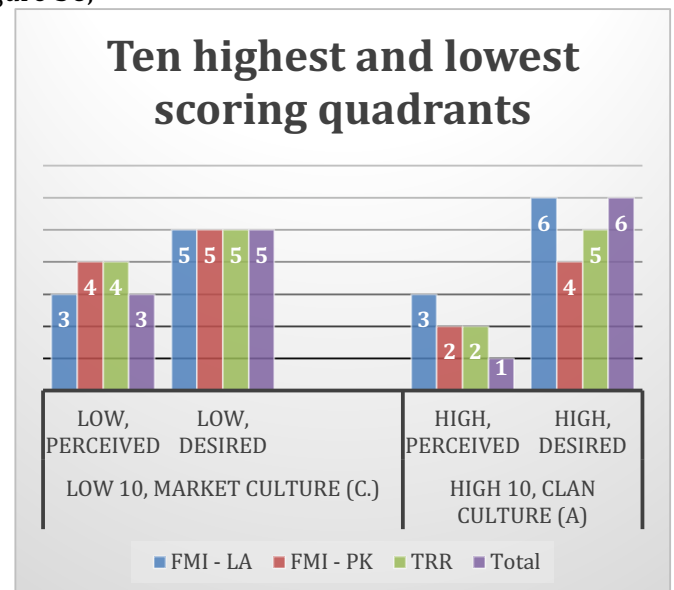
The Clan culture scores an overall high, as previously mentioned. Being represented 1-3 times as the highest perceived scoring culture and 4-6 times as the highest preferred culture, and given a total of 5-9 out of 10, the Clan culture is, overall, the most preferred culture.

Connection between the Lean implementation success and the found CVF (having taken the top and Low five)

Recognising that whether or not the Lean implementation is a success can, to some extent, depend on the focal point of view from the different Lean ambassadors, the presented data were listed in order to find the CVF out of the highest and lowest scoring answered questionnaires. Accordingly, the CVF is made on the basis of how successful the ambassadors believe the Lean implementation has been, and not the organisational affiliation. This is therefore not an analysis of an existing organisational culture, but rather an attempt to establish whether or not there can be said to be a distinct connection between Lean implementation success and organisational culture.

Focusing on finding some explanatory data to examine a possible connection between organisational culture and Lean implementation success, the five highest and lowest scoring answered questionnaires are found on the grounds of the data presented in Figure 36. See also appendix 12.5. The filled-out OCAI from the respective five respondents is summed up given the results in Figure 39.

Highest and lowest scoring departments in the OCAI			
		Perceived	Desired
Top 5	Clan	195	237
	Adhocracy	90	145
	Market	93	77
	Hierarchy	215	142
Low 5	Clan	160	213
	Adhocracy	123	181
	Market	57	64
	Hierarchy	260	141

Figure 39

Listing the data in a CVF, the following figures are presented:
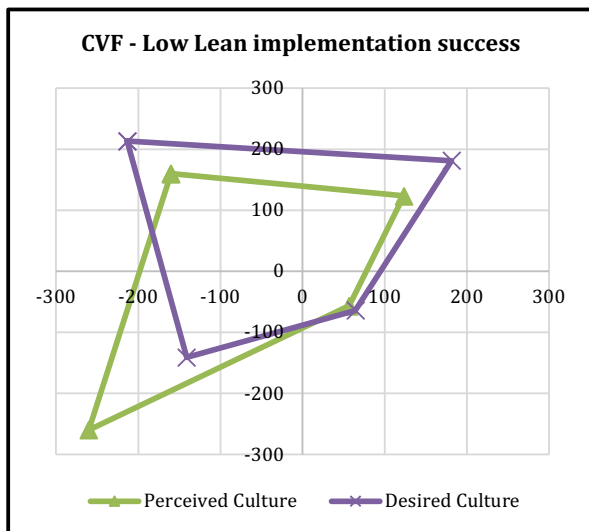
Figure 41
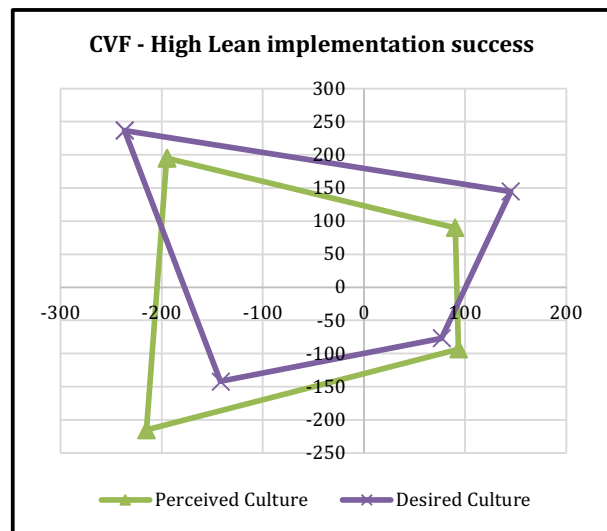
Figure 40

Having omitted the lowest scoring respondents in the making of the overall CVF, thus creating a more focused graph than in Figure 37, some explanatory results can be derived.

It seems like the feeling of a Hierarchy-focused culture, presented in Figure 37, is dominant in relation to the failing Lean implementation. The desired cultural preference in the "Low Lean implementation success" is dominated by the Clan and Adhocracy culture as is the case with the "High Lean implementation success". Moreover, this is the same tendency as found in the analysis of the overall cultural preference presented in the previous pages.

In the CVF in Figure 40, representing respondents being positive in relation to the Lean implementation success, the Hierarchy culture is still dominant, scoring 215 points. Scoring 195 points, the Clan culture comes in second in the perceived culture. Accordingly, the perceived culture is dominated by internal focus and integration, meanwhile the preferred culture is more dominated by flexibility and freedom to act, being the dominant features of the Clan and Adhocracy culture.

Therefore, by focusing on only the highest and lowest scoring respondents in respect to the feeling of Lean implementation success, the same general picture is found. The Clan and Adhocracy cultures are still dominant as the preferred culture while the perceived culture is that of Hierarchy and Clan.

7. Discussion

Having selected the CVF as the theoretical approach for the paper, a quantitative approach for the OCAI would have been appropriate (Cameron, et al., 2006). Given the focus and resources available for the paper the population size could, however, never have been large enough, meaning that a small population size is acceptable. This, however, meant that the conclusions were vitiated with uncertainty, giving only indications, not clear conclusions.

Having chosen a more qualitative-based theory, a smaller number of varied interviews could perhaps have provided the needed data.

However, by using the CVF, being a proven and well acknowledged framework, the findings will become comparable, visualised, well understood and recognisable for others. Consequently, by using a well-established framework, accepting some limitations regarding the use of the OCAI, more is seen to be gained then lost.

The Managerial Foundation of the Danish Armed Forces and the Competing Value Framework

Figure 42

The method has been principally focused on secondary text data and only the organisational culture was analysed using primary data. Initial interviews were conducted using a snowballing technique in order to narrow down the analysis field, but no additional structured or semi-structured changes were made to focus any findings. This could be said to have weakened the paper's opportunity to present any final conclusions, since the findings thereby cannot be supported or focused.

The method used in the paper is focused on three differ-ent levels of explanatory elements, being: 1) An analysis of the overall Managerial Foundation within the Armed Forces as well as the curriculum thought of the new man-agers to see if it is compatible with a Lean culture. 2) An analysis of the overall strategy within the Armed Forces finding the preferred culture using the CVF. 3) The or-ganisational culture within departments having imple-mented Lean with various degrees of success to explore any connection between Lean implementation success and the culture.

The Competing Value Framework
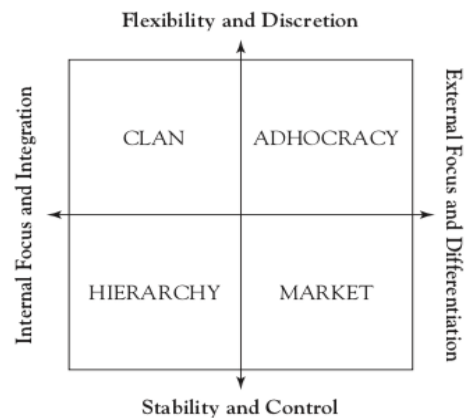
Figure 43

Analysing the Managerial Foundation in order to establish whether it leaves room for the Lean implementation, the underlining belief was that the ILC presented by Para (Paro, et al., 2015) could be used as an indicator for what culture to aim for. However, it was soon found that the Managerial Foundation is built on the same premises as CVF presented by Cameron and Quinn (Cameron, et al., 2006). The Managerial Foundation is found to be presented in such a manner that it recognises the value of all four cultural quadrants. Subsequently, the Managerial Foundation does not focus on one strategic organisational culture being the best for the organisation. This could, however, also be seen as a weakness, since the organisational Managerial

Ideal Lean culture in a Brazilian context and that of "The Toyota Way" (Paro, et al., 2015)
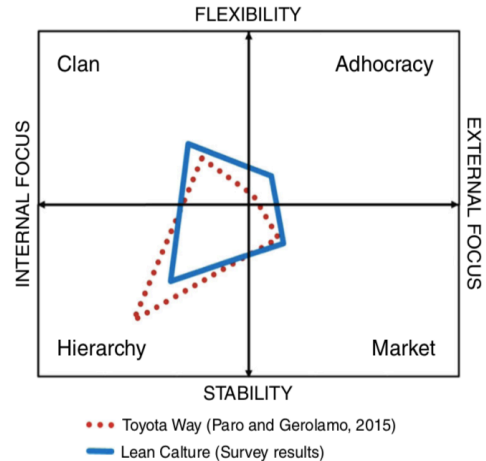
Figure 44

Foundation thereby does not set any clear path for its managers to follow, which opens up for the possibility for the different departments to create entirely their own culture. This being a mana-gerial path which can both be seen as a strength as well as a weakness.

Analysing the overall strategy of the Danish Defence Command through three different directives and documents, an overall understanding was given in relation to which values the Danish Defence Command wishes to enforce within the organisation.

The text analysis of the documents, giving references for the filling of the OCAI, did, however, often come out somewhat short of references. Consequently, scoring among the four alternatives within one item in the OCAI could be done on the grounds of as little as 2-5 references per alternative. This limited number of references makes the OCAI vulnerable to misinterpretations, and one misinterpretation by me as the author can potentially displace the CVF by 10-20 points within one item.
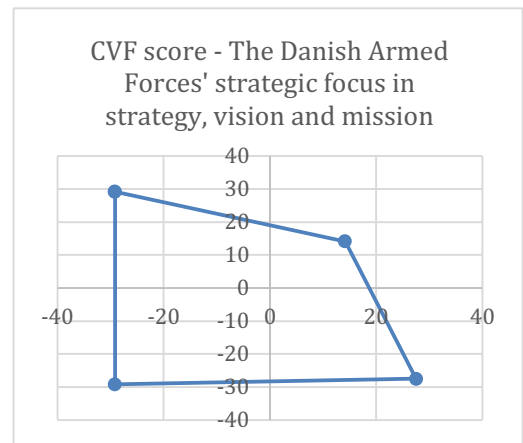
Figure 45

The findings from the section are, to some extent, seen as inconclusive. On the one hand, the findings point towards the Clan, Market and Hierarchy cultures all scoring an equal 29 points, having only the Adhocracy culture falling behind with only 14 points. The CVF found representing the Managerial Foundation thereby represents what is intended, a Managerial Foundation which gives room for all four quadrants. However, on the other hand, the findings also point towards the Adhocracy being the least favoured culture in the Danish Defence Command – findings which can later be compared with the OCAI measurement of different departments within the organisation.

Going through the curriculum presented by the Royal Danish Defence College to the organisation's new managers the same picture presented itself. The curriculum supported the Managerial Foundation in relation to supporting all four cultural quadrants. Accordingly, no additional new knowledge was found.

Comparing the findings in Figure 40 (46), presenting the CVF for the top-ten scoring question-naires as well as Figure 35 (47), presenting the CVF for the TRR department, it can be seen that the dominant cultures relating to a successful Lean implementation can be described as a culture dominated by stability and control, while the desired culture within the same departments is a

culture dominated by flexibility and freedom to act. Comparing these findings with the ILC presented by Paro and Gerolamo (Paro, et al., 2015), it becomes evident that there is a mismatch between the desired cultures in the two, meaning that no distinct connection between the two can be seen. However, a match is seen in relation to the findings of Pakil, who found that successful implementation of Lean requires an organisational culture where both flexibility and uniformity are valued (Pakdil, et al., 2015).
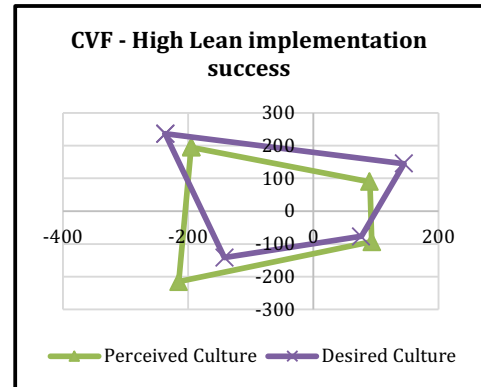
Figure 46

Accordingly, it could be argued that the Lean implementation success is due to the combination of perceived and desired culture, being dominated by the Clan and Hierarchy culture, meaning an internal focus with focus on both stability and control as well as flexibility and freedom to act.

The Hierarchy culture is most dominant in the analysis of the "High Lean implementation success" and second-highest in the CVF of the TRR department. However, in both cases the Clan culture scores higher in the desired culture, being the desired culture by the Lean specialist in the departments. So instead of having elements pointing towards internal focus and stability as being the best areas of focus for Lean to be implemented with success, as in the case of Paros findings, elements point towards flexibility and external focus being the most important areas.
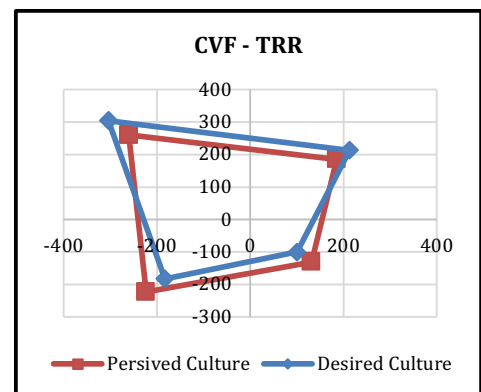
Figure 47

It could be argued that the, to some extent, successful implementation in the TRR department is due to the perceived culture and not due to the desired one, meaning that it is the current culture

which has led to the implementation success. Accordingly, a Hierarchy-dominated culture could be confirmed as being the most desirable culture for implementing Lean. However, having all other findings from the Lean ambassadors from the three different departments pointing towards a Clan and Adhocracy culture being the most desirable culture in respect to the Lean implementation, the argument becomes somewhat moot.

In Figure 30 it can be seen that only the TRR scores relatively highly in relation to how successful the Lean implementation has been and the lower part of the score relates to the management's commitment to the implementation. The lack of management commitment could then be seen in the context of Laureani's findings, indicating that the number one reason for Lean implementation failure is a lack of management commitment closely followed by cultural differences (Laureani, et al., 2012). If we hereby accept the premise that the Lean implementation is not successful, it can be argued that the lack of success is due to the lack of focus on the Hierarchy culture, presented as the dominating culture in Liker's 14 principles of The Toyota Way (Liker, 2004) (Paro, et al., 2015). If the findings presented by Paro and Gerolamo are accepted as fair in relation to which dominant culture characteristic supports the Lean implementation the best, which can then give some explanation to why the three departments only experience limited implementation success. This is supported by the fact that all findings in the three departments point towards them wanting more focus on the Adhocracy culture, which is the lowest scoring culture in Paro's findings. In addition, having been interviewed, two of the respondents' elements was found to be pointing towards the seemingly successful Lean implementation in the TRR department being primarily limited to Lean tools and not so much the Lean philosophy (Manager TRR, 2019). The conclusions hereby find themselves in a crossroad, going two ways: 1) On the one hand the implementation success even within the TRR department is seen as being unsuccessful overall, which could then be explained by the lack of focus on the Hierarchy culture being the ideal Lean culture presented. 2) On the other hand, if the implementation of Lean in the TRR department is seen as a success, the Ideal Lean Culture presented by Para could then be disputed. Or the mismatch could be explained by the differences in national culture as discussed in the theory section. The latter of the two could be seen supported by the fact that all respondents are

Lean experts, ambassadors for the Lean Competence Centre within the organisation. Thus, they can be expected to have an excellent insight into what Lean is and what it takes, supporting the idea that when they preferred a culture dominated by flexibility and freedom to act, being the Clan and Adhocracy cultures, they also say that would be the best for the Lean implementation. In both ways the findings can provide perspective to the field in relation to what an Ideal Lean Culture could be considered to be. This is achieved by either supporting the findings by Paro, or by presenting a new ILC in a Danish context.

8. Conclusion

On a strategic level, the Danish Defence Command, being the higher management in the Danish Armed Forces, is seen as supporting the Lean implementation through their Managerial Foundation and teachings for the coming managers in the organisation, thereby setting the preconditions for any culture needed in the different departments within the organisation. However, whether or not the Lean implementation is at all a success in any department, thereby indicating that the management has been able to create the culture needed to support the implementation, is still somewhat undefined.

In respect to the question regarding the management support on a strategic level, it was found that the Managerial Foundation, setting the managerial approach for the managers within the organisation, did not present any obstacles for the implementation. The Managerial Foundation was found to be setting the premise for any managers to choose their own managerial approach in respect to the task and given situation. Compared to the CVF presented by Cameron and Quinn, having four quadrants representing four fundamentally different cultures and managerial approaches, a strong resemblance was found (Cameron, et al., 2006). This indicates that the Managerial Foundation was not intended to give any one managerial approach to follow for the organisation, but instead supports each manager in the finding of his or her own managerial approach. By not setting one clear direction when it comes to which managerial approach the organisation prefers and hereby which culture is preferred, it is, however, also seen as being an indirect obstacle to the Lean implementation. If the Danish Defence Command should actively support the

implementation, they could also be expected to set the managerial path towards the best suited culture for Lean, instead of letting it be up to the individual managers out in the department.

The same picture presents itself when going through the curriculum presented to the new managers at the Royal Danish Defence College. The managerial curriculum entirely presents the ability as a manager to choose one's own managerial approach in the given situations. Consequently, the curriculum and the College does not present any hinderance for the Lean implementation, but subsequently it does not support it either.

In performing a cultural analysis of the directives and documents presented by the Danish Defence Command as the organisational strategy, indications of a dislike for an Adhocracy culture were found (Cameron, et al., 2006). However, each of the other three cultures scored an equal amount of points, indicating no clear preferred culture for the organisation. This is found to be largely in accordance with the overall managerial approach, which made an effort to ensure room for all four different cultures within the organisation. Consequently, the Mission, Vision and Strategy presented by the Defence Command to guide the organisation, do not seem to hinder or ensure a smooth Lean implementation in relation to the organisational culture.

Having conducted a cultural analysis of three different departments, with different Lean implementation success, with a limited number of respondents using the organisational culture analysis instrument (OCAI), a CVF was established.
By comparing the level of success, the different departments had experienced with the Lean implementation with the CVF, some elements were found pointing towards the Hierarchy and Clan cultures being the most dominant cultures in departments with implementation success. The departments experiencing the highest level of success in the implementation were characterised by a focus on the Hierarchy culture in the perceived culture, meanwhile the desired culture was more focused on flexibility and freedom to act, being the Clan and Adhocracy cultures.
Some questions arose in respect to whether or not the Lean implementation had at all been a success in any of the departments, indicating that none of the found CVFs could be presented as

suited for Lean. However, with respect to the respondents all being Lean specialists, and their desired culture, arguments point towards a culture dominated by the Clan and Adhocracy cultures as the most suitable for Lean in the departments. Consequently, this argues that, in a Danish context, and perhaps limited to the departments within the Army, the ideal Lean culture could be described as being one focused on flexibility and freedom to act.

Thus, no direct hindrances for a smooth transition for a Lean-compatible culture were found in the directives and teachings within the Armed Forces, and none but a slight dislike of the Adhocracy culture were found during the CVF analysis of the Mission, Vision and Strategy documents. However, in the culture analysis of the departments through the use of the organisational culture analysis instrument (OCAI) it was found that the Lean specialists from the different departments all desired a culture more focused on flexibility and freedom to act. Thereby, it is found that while the departments experiencing the greatest Lean success are dominated by a perceived Hierarchy culture, they desire a more Clan- and Adhocracy-dominated culture. This can be seen as pointing to two different conclusions: (1) Departments with a dominant Hierarchy culture have the greatest implementation success rate in relation to Lean. This is despite the desire for a more Clan- and Adhocracy-focused culture. (2) To have lasting implementation success the departments have to ensure a cultural transition towards a more flexible and external focused culture than they have at the present state.

Therefore, by being having departments actively working with Lean, all being culturally dominated by a focus internally and on integration as well as a focus on stability and control, it is found that the current organisational culture is not fully aligned with that of Lean. It is found that actions should be taken in order to ensure a cultural focus internally and on integration and on flexibility and discretion.

No matter if the level of Lean success within the different departments' elements points towards the cultural differences only being part of the obstacles endured, all departments, with different levels, indicate the higher management is part of the problem when it comes to the effective use

of Lean. This correlates with the findings of Laureani, who found that management commitment is the number one cause for Lean failure within organisations(Laureani, et al., 2012).

9. Implementation plan

Accepting that Lean implementation is perhaps not suitable for all departments within the organisation, a specification of the overall Lean strategy should be presented by the Danish Defence Command. In so doing, it would easier for the rest of the organisation to understand whether or not they are expected to implement Lean as a philosophy or if they can settle for using some of the Lean tools if they find them suitable.
Alternatively, the Lean strategy could be presented as a supplement for the departments which they can use if they see it suitable, and, if so, the Lean Competence Centre can provide guidance.

Selecting the departments in which Lean is seen as suitable, the Lean Competence Centre should assist in conducting an initial cultural analysis prior to the implementation. Through this cultural analysis the current culture should be established in order to be able to take the necessary steps towards a Lean-compatible culture, defined in the Danish Armed Forces' context as being dominated by the Clan and Adhocracy cultures.

Selecting the departments to continue the work with Lean, an overall assurance of the organisational acceptance of this strategy within the departments has to be stated. This is performed in an effort to ensure that the management both within the departments and above are willing and able to support the lasting Lean implementation. Some elements in the analysis pointed towards the lack of management commitment as a cause of complication for the Lean implementation. This was both in respect to how the managers used elements from Lean and how they supported the use in their departments, but also in respect to how able they were to actively launch the necessary actions and investments to sustain Lean.

10. Outlook

Some elements in the paper conclude that the ideal Lean culture for the departments in the Armed Forces is a focus on flexibility and freedom to act, being the focus areas of the Clan and

Adhocracy culture. Accordingly, the paper has given some perspective to the findings of Paro and Gerolamo, who presented an ideal Lean culture as being dominated by the Hierarchy culture (Paro, et al., 2015). The conclusion is, however, limited in its validation, primarily due to a small population size and contradicting elements in the analysis.

Not focusing on the Lean implementation, the cultural analysis revealed a desire for a more Adhocracy-focused culture within all three departments. In addition, the Market and Hierarchy cultures were seen as the cultures which had the highest differences between perceived and desired. This might lead one to argue that, in order to increase the employee satisfaction in the department, the managerial approach should support a more flexible and free culture within the departments.

Additional research should be performed into whether or not Lean as a philosophy has been successfully implemented in the TRR department. If this is the case, the conclusion of this paper is supported. However, if the implementation is limited to Lean tools, it could be argued that an ideal Lean culture in a Danish Army context cannot be present. Instead, the ideal Lean culture presented by Paro and Gerolamo, dominated by the Hierarchy culture, could then be presented as the reason for the unsuccessful implementation, namely unsuccessful due to cultural differences.

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12. Appendix

12.1. Description of the four cultures within the CVF

(Paro, et al., 2017).

Clan Culture	Adhocracy Culture
This working environment is a friendly one. People have a lot in common, and it's similar to a large family. The leaders or the executives are seen as mentors or maybe even as father figures. The organization is held together by loyalty and tradition. There is great involvement. The organization emphasizes long-term Human Resource development and bonds colleagues by morals. Success is defined within the framework of addressing the needs of the clients and caring for the people. The organization promotes teamwork, participation, and consensus. **Leader Type:** facilitator, mentor, team builder **Value Drivers:** Commitment, communication, development **Theory of Effectiveness:** Human Resource development and participation are effective **Quality Improvement Strategy:** Empowerment, team building, employee involvement, Human Resource development, open communication	This is a dynamic and creative working environment. Employees take risks. Leaders are seen as innovators and risk takers. Experiments and innovation are the bonding materials within the organization. Prominence is emphasized. The long-term goal is to grow and create new resources. The availability of new products or services is seen as success. The organization promotes individual initiative and freedom. **Leader Type:** Innovator, entrepreneur, visionary **Value Drivers:** Innovative outputs, transformation, agility **Theory of Effectiveness:** Innovativeness, vision and new resources are effective **Quality Improvement Strategy:** Surprise and delight, creating new standards, anticipating needs, continuous improvement, finding creative solutions
Hierarchy Culture	Market Culture
This is a formalized and structured work environment. Procedures decide what people do. Leaders are proud of their efficiency-based coordination and organization. Keeping the organization functioning smoothly is most crucial. Formal rules and policy keep the organization together. The long-term goals are stability and results, paired with efficient and smooth execution of tasks. Trustful delivery, smooth planning, and low costs define success. The personnel management has to guarantee work and predictability. **Leader Type: Coordinator, monitor, organizer** **Value Drivers:** Efficiency, timeliness, consistency, and uniformity **Theory of Effectiveness:** Control and efficiency with capable processes are effective **Quality Improvement Strategy:** Error detection, measurement, process control, systematic problem solving, quality tools	This is a results-based organization that emphasizes finishing work and getting things done. People are competitive and focused on goals. Leaders are hard drivers, producers, and rivals at the same time. They are tough and have high expectations. The emphasis on winning keeps the organization together. Reputation and success are the most important. Long-term focus is on rival activities and reaching goals. Market penetration and stock are the definitions of success. Competitive prices and market leadership are important. The organizational style is based on competition. **Leader Type: Hard driver, competitor, producer** **Value Drivers:** Market share, goal achievement, profitability **Theory of Effectiveness:** Aggressively competing and customer focus are effective **Quality Improvement Strategy:** Measuring client preferences, improving productivity, creating external partnerships, enhancing competiteness, involving customers and suppliers

12.2. OCAI for the Armed Forces' Mission. Vision and Strategy

Question 1: Dominant Characteristics		
The organization is a very personal place. It is like an extended family. People seem to share a lot of themselves.	**Forsvarets Strategi** • "Forsvaret vil fremme en intern fri og uformel debatkultur og ønsker at drage nytte af medarbejdernes viden, erfaring og oplevelser." (s. 14) **Forsvarets Ledelsesgrundlag** • "Såvel ledere som medarbejdere medvirker til at forme de værdier og den etik, som Forsvaret skal samles om" (s. 5) Forsvarets Mission Vision og Strategi	25
The organization is a very dynamic entrepreneurial place. People are willing to stick out their necks and take risks.	Forsvarets Strategi Forsvarets Ledelsesgrundlag **Forsvarets Mission Vision og Strategi** • "Forsvaret skal være en åben og innovativ virksomhed i stadig udvikling" (s. 10)	10

The organization is very results-oriented. A major concern is with getting the job done. People are very competitive and achieve-ment-oriented.	Forsvarets Strategi Forsvarets Ledelsesgrundlag • "Ledelsesmæssigt er opgaven i centrum" (s. 5) • "mobilisere tilstrækkelig viljestyrke, energi og vedholdenhed med henblik på at opnå gode resultater." (s. 15) Forsvarets Mission Vision og Strategi	25
The organization is a very controlled and structured place. Formal procedures generally govern what people do.	Forsvarets Strategi • "Forsvaret vil sikre, at anvendelse af ressourcer, herunder enhver anskaffelse, drift og udfasning af kapaciteter, sker med udgangspunkt i totalomkostningsbetragtning. Forsvaret vil have fokus på gennemsigtighed i ressourceforbruget." (s. 13) • "Forsvaret vil sikre kontinuitet og kvalitet i opgaveløsningen ved at prioritere opsamling og anvendelse af viden og erfaring i organisationen." (s. 15) • "Forsvaret vil prioritere videndeling." (s. 15) Forsvarets Ledelsesgrundlag Forsvarets Mission Vision og Strategi	40

Question 2: Organizational Leadership		
The leadership in the organization is generally considered to exemplify mentoring, facilitating, or nurturing.	Forsvarets Strategi Forsvarets Ledelsesgrundlag • "Den bedste opgaveløsning opnås kun, hvis lederen er bevidst om sine medarbejderes kompetencer og i størst muligt omfang bringer disse i anvendelse..." (s. 5) • "Ledelse er (…) en proces, hvor meninger forhandles, fælles overbevisninger dannes, og hvor en person eller en ledelsesgruppe igangsætter, støtter og styrer opgaveløsningen i overensstemmelse med ledelsens hensigt." (s. 7) • "Ledelse bør ... bygge på et fælles velovervejet og gennemskueligt grundlag..." (s. 7) "Det er ikke en eksklusiv topledelses- funktion at varetage styring. " (s. 12) • "Ud fra sin formelt tildelte organisatoriske rolle står ledelsesudøveren i spidsen for denne proces ved at omsætte medarbejdernes antagelser, værdier, etik, viden og færdigheder til kompetent og målrettet adfærd. " (s. 15) • "... ledelse udøves med henblik på at skabe vilkår for, at en gruppe af mennesker kan formulere og arbejde for opfyldesen af bestemte mål." (s. 15) • "... ledelsesudøvere er åbne for konstruktiv kritik og ideer fra alle sider og niveauer." (s. 15) • "Ledelse skal håndtere og støtte menneskelige relationer internt såvel som eksternt med henblik på at skabe gode livs- og arbejdsvilkår." (s. 15)	40

	Forsvarets Mission Vision og Strategi • "… lederen har fokus på at klarlægge, hvordan medarbejderen bidrager til helheden, og hvilke opgaver vedkommende har." (s. 17)	
The leadership in the organization is generally considered to exemplify entrepreneurship, innovation, or risk taking.	Forsvarets Strategi Forsvarets Ledelsesgrundlag • "… ledelsen … skal håndtere komplekse operative opgaver, der kræver militær risikoledelse… " (s. 11) • "Kravene til virksomhedsledelse er karakteriseret ved at … kunne udvise fleksibilitet og nytænkning i forhold til nye krav og behov." (s. 12) • "… ledelsesudøveren må give frihed til, at andre kan udvise initiativ og påtage sig et selvstændigt ansvar i og omkring opgaveløsningen." (s. 15) • "Ledelse skal tilpasse og forny organisationens praksis med henblik på at møde forandrede krav og forventninger udefra." (s. 16) Forsvarets Mission Vision og Strategi • "Enhver med ledelsesansvar skal i særlig grad udvise fornøden dristighed, gå forrest i forandringer, kommunikere og skabe løsninger." (s. 10)	20

The leadership in the organization is generally considered to exemplify a no-nonsense, aggressive, results-oriented focus.	Forsvarets Strategi Forsvarets Ledelsesgrundlag • "God ledelse er i samspil med andre relevante aktører, at skabe vilkår der fremmer god og effektiv opgaveløsning med henblik på at nå nuværende og fremtidige mål." (s. 7) • "Ledelse skal mobilisere tilstrækkelig viljestyrke, energi og vedholdenhed med henblik på at opnå gode resultater." (s. 15) Forsvarets Mission Vision og Strategi • "Formålet med Forsvarets mission, vision og strategier er at sikre fokus på kerneopgaverne og sætte alle i stand til at se Forsvaret som et hele." (s. 6)	10
The leadership in the organization is generally considered to exemplify coordinating, organizing, or smooth-running efficiency.	Forsvarets Strategi • "Strategierne skal være med til at sikre, at alle går i den fælles retning, som er hovedformålet med Forsvarets mission, vision og strategier"(s. 8) • "Hovedstrategierne sætter sammen med mission og vision rammerne for, hvordan Forsvaret fremover skal udvikles og hvilke områder, Forsvarets ledelse lægger særlig vægt på." (s. 9) Forsvarets Ledelsesgrundlag	30

	• ”… målrettet Forsvarets ledere, der har ansvaret for at sikre effektivitet og god etik i den fælles opgaveløsning. ” (s. 7) • ”... ledelsen ... skal kunne håndtere optimering af de forvaltningsmæssige opgaver... ” (s. 11) • ”Kravene til virksomhedsledelse er ... en standardiseret opgaveløsning, der fremmer effektivitet og ensartethed i arbejdsprocesser og resultater... ” (s. 12) • ”Ledelse skal fastholde professionalisme, kontinuitet og optimale strukturer med henblik på at bevare og nyttiggøre de erfaringer og den kvalitet der allerede er i organisationen.” (s. 16) • ”... ledelsesadfærd ... sikrer velstrukturerede rammer for samarbejdet i opgaveløsningen.” (s. 12) Forsvarets Mission Vision og Strategi	
Question 3: Management of Employees		
The management style in the organization is characterized by teamwork, consensus, and participation.	Forsvarets Strategi • ”Forsvaret skal ses som en samlet virksomhed med respekt for mangfoldigheden og med et fælles mål.” (s. 5) • ”Alle Forsvarets ansatte skal bidrage til Forsvarets kerneopgaver...” (s. 10) • ”Alle skal bidrage og kende deres bidrag til slutproduktet.” (s. 12) • ”Forsvaret vil prioritere videndeling.” (s. 13)	20

	Forsvarets Ledelsesgrundlag Forsvarets Mission Vision og Strategi • "Derfor er det vigtigt, at alle forstår, hvordan netop de bidrager til Forsvarets kerneopgaver." (s. 14)	
The management style in the organization is characterized by individual risk taking, innovation, freedom, and uniqueness.	Forsvarets Strategi Forsvarets Ledelsesgrundlag Forsvarets Mission Vision og Strategi • "Forsvarets medarbejdere skal udvise initiativ, tage ansvar og handle i rammen af helheden." (s. 10) • "Alle med ledelsesansvar skal udvise mod, ved at handle og tage de kalkulerede, nødvendige risici, som deres job kræver." (s. 17)	10
The management style in the organization is characterized by hard-driving competitiveness, high demands,	Forsvarets Strategi • "Enhver med ledelsesansvar skal i særlig grad udvise fornøden dristighed, gå forrest i forandringer, kommunikere og skabe løsninger." (s. 7)	35

and achieve-ment.	**Forsvarets Ledelsesgrundlag** • "I yderste fald kan opgavens løsning nødvendiggøre, at den enkelte må sætte sit eget eller andres liv på spil og tage andres liv …" (s. 11) • "Ledelsesudøverens undergivne udfører beslutningen med en disciplin, der sikrer, at opgaven løses i den hensigt den er givet." (s. 12) **Forsvarets Mission Vision og Strategi** • "Alle med ledelsesansvar… skal holde fokus på opgaven og skabe hele løsninger, som ikke kun tilgodeser de kortsigtede resultater." (s. 17)	
The management style in the organization is characterized by security of employment, conformity, predictability, and stability in relationships.	**Forsvarets Strategi** • "Forsvaret vil i videst muligt omfang indsætte organisatoriske enheder, der er opstillet, udrustet og samarbejdet. Enheder skal være robuste og dimensioneret efter opgaven." (s. 10) • "Forsvaret vil skabe de sikrest og bedst mulige arbejdsvilkår for den enkelte med fokus på den personlige sikkerhed, på anvendelse af moderne materiel og på de bedst mulige arbejdsmetoder." (s. 12) **Forsvarets Ledelsesgrundlag** • "Samtidig stiller det krav om, at der holdes fokus på medarbejdernes vilkår, uanset hvor stort det ydre pres er. " (s. 11)	35

	Forsvarets Mission Vision og Strategi	
Question 4: Organization Glue		
The glue that holds the organization together is loyalty and mutual trust. Commitment to the organization runs high.	Forsvarets Strategi • "Forsvaret vil sikre kontinuitet og kvalitet i opgaveløsningen ved at prioritere opsamling og anvendelse af viden og erfaring i organisationen." (s. 15) Forsvarets Ledelsesgrundlag • "Disciplinen skaber en nødvendig sammenhængskraft i kritiske situationer. Den baserer sig på opbygget tillid til ledelsesudøveren og dennes virke. " (s. 12) Forsvarets Mission Vision og Strategi	25
The glue that holds the organization together is commitment to innovation and development. There is an emphasis on being	Forsvarets Strategi • "Forsvaret vil skabe incitamenter til, at alle bidrager til at evaluere og udvikle arbejdspladsen. " (s. 12) Forsvarets Ledelsesgrundlag	25

on the cutting edge.	Forsvarets Mission Vision og Strategi • "Forsvarets vision er Forsvarets mål for fremtiden. Det er sådan vi gerne vil være og opfattes af andre." (s. 6)	
The glue that holds the organization together is an emphasis on achievement and goal accomplishment.	Forsvarets Strategi Forsvarets Ledelsesgrundlag • "... løsningen af opgaver er rettet mod Forsvarets overordnede mission." (s. 16) Forsvarets Mission Vision og Strategi • "Forsvaret skal ses som en samlet virksomhed .... med et fælles mål." (s. 6)	25
The glue that holds the organization together is formal rules and policies. Maintaining a smooth-running organization is important.	Forsvarets Strategi • "Forsvaret skal være i stadig udvikling og fastholde handlefrihed ved aktivt at styre og effektivisere virksomheden." (s. 13) • "Opgaverne er dimensionerende for organisationen, og organisationen justeres løbende i takt med ændringer i opgaverne. Forsvaret vil løse opgaverne med de nødvendige ressourcer i en forståelse for det samlede opgavekompleks og Forsvarets rolle i samfundet." (s. 15)	25

	Forsvarets Ledelsesgrundlag Forsvarets Mission Vision og Strategi	
Question 5: Strategic Emphases		
The organization emphasizes human development. High trust, openness, and participation persist.	Forsvarets Strategi • "Forsvaret vil prioritere kompetenceudvikling, som er vital for Forsvarets evne til at løse nuværende og fremtidige opgaver og er et centralt element i Forsvarets bestræbelser på at være en attraktiv arbejdsplads." (s. 12) • "Forsvaret vil fremme en intern fri og uformel debatkultur og ønsker at drage nytte af medarbejdernes viden, erfaring og oplevelser. " (s. 12) • "Forsvaret vil prioritere videndeling." (s. 15) Forsvarets Ledelsesgrundlag • "Ledelse skal håndtere og støtte menneskelige relationer internt såvel som eksternt med henblik på at skabe gode livs- og arbejdsvilkår." (s. 15) Forsvarets Mission Vision og Strategi • "Forsvarets medarbejdere skal udvise initiativ, tage ansvar og handle i rammen af helheden." (s. 10)	40

	• ”... det er vigtigt, at alle forstår, hvordan netop de bidrager til Forsvarets kerneopgaver.” (s. 14) • ”Målet er, at Forsvaret er en arbejdsplads, hvor medarbejdere ... har mulighed for hele tiden at udvikle sig. Kompetenceudvikling skal prioriteres.” (s. 17)	
The organization emphasizes acquiring new resources and creating new challenges. Trying new things and prospecting for opportunities are valued.	Forsvarets Strategi Forsvarets Ledelsesgrundlag Forsvarets Mission Vision og Strategi • ”Forsvaret skal være en udfordrende ... arbejdsplads, der tiltrækker, inspirerer og udvikler dygtige medarbejdere.” (s. 10)	10
The organization emphasizes competitive actions and achievement. Hitting stretch targets and winning in the marketplace are dominant.	Forsvarets Strategi • ”Forsvaret vil koncentrere sine indsættelser for at opnå stor synlighed og effekt.” (s. 12) • ”Forsvaret vil styrke opgaveløsningen ved at udvikle tætte, formelle samarbejdsrelationer og interoperabilitet med udvalgte lande og enheder.” (s. 12)	25

	Forsvarets Ledelsesgrundlag Forsvarets Mission Vision og Strategi • "Forsvaret skal være blandt de førende i udviklingen af den offentlige sektor." (s. 10) • "Vi skal med andre ord kunne måle os med og i forhold til vores samarbejdspartnere." (s. 13)	
The organization emphasizes permanence and stability. Efficiency, control and smooth operations are important.	Forsvarets Strategi • "Forsvaret skal være en moderne arbejdsplads, der kontinuerligt arbejder for at effektivisere arbejdsprocesser og minimere bureaukrati." (s. 14) • "Forsvaret skal være i stadig udvikling og fastholde handlefrihed ved aktivt at styre og effektivisere virksomheden." (s. 15) • "Forsvaret vil løbende optimere opgaveløsningen ..." (s. 15) • "Forsvaret vil sikre kontinuitet og kvalitet i opgaveløsningen ved at prioritere opsamling og anvendelse af viden og erfaring i organisationen." (s. 15) Forsvarets Ledelsesgrundlag Forsvarets Mission Vision og Strategi	25

Question 6: Criteria of Success		
The organization defines success on the basis of development of human resources, teamwork, employee commitment, and concern for people.	Forsvarets Strategi • "Forsvaret vil prioritere kompetenceudvikling, som er vital for Forsvarets evne til at løse nuværende og fremtidige opgaver og er et centralt element i Forsvarets bestræbelser på at være en attraktiv arbejdsplads." (s. 12) • "Forsvaret vil tage hånd om sine ansatte, fremme et godt arbejdsmiljø og tage et medansvar for de ansattes fysiske og psykiske sundhed." (s. 12) Forsvarets Ledelsesgrundlag Forsvarets Mission Vision og Strategi • "Forsvaret skal være en socialt ansvarlig arbejdsplads, der tager hånd om sine medarbejdere." (s. 10)	25
The organization defines success on the basis of having the most unique or newest products. It is a product leader and innovator.	Forsvarets Strategi Forsvarets Ledelsesgrundlag Forsvarets Mission Vision og Strategi	10

	• "... Forsvaret må tænke nyt og være på forkant med udviklingen." (s. 14)	
The organization defines success on the basis of winning in the marketplace and outpacing the competition. Competitive market leadership is key.	Forsvarets Strategi Forsvarets Ledelsesgrundlag • "...har vi med Ledelsesgrundlaget sikret, at Forsvaret fortsat er blandt de førende inden for ledelsesområdet." (s. 5) Forsvarets Mission Vision og Strategi • "…skal bidrage til kerneopgaven – at soldaterne kan kæmpe og vinde." (s. 9) • "Vision er forsvarets ledestjerne… der tilsammen vil give det bedste danske forsvar i fremtiden." (s. 11) • "Forsvaret skal være blandt de førende i udviklingen af den offentlige sektor."(s. 14) • "Vi skal være blandt de førende inden for ledelse, personale, pædagogik, Informations- og Kommunikationsteknologi (IKT) og økonomi.". (s. 14) • "Forsvaret skal være en efterspurgt samarbejdspartner for de prioriterede alliance- og koalitionspartnere". (s. 13) • "De ting vi gør, vil vi prioritere at gøre og derfor være rigtigt gode til. Det betyder også, at andre ting vil blive nedprioriteret eller helt fravalgt." (s. 13)	45

	• "For at Forsvaret kan være et relevant militært redskab for Danmark, skal vi kunne tilbyde de kapaciteter, der er efterspørgsel på. Men efterspørgsel ændrer sig over tid, og blandt andet derfor må vores kapaciteter være fleksible." (s. 13)	
The organization defines success on the basis of efficiency. Dependable delivery, smooth scheduling and low-cost production are critical.	Forsvarets Strategi • "Forsvaret vil videreudvikle den fælles virksomhedsforståelse som grundlag for effektiv udnyttelse af Forsvarets ressourcer. Forsvaret vil videreudvikle redskaber til at understøtte styring og beslutningsprocesser..." (s. 13) Forsvarets Ledelsesgrundlag • "…er især målrettet Forsvarets ledere, der har ansvaret for at sikre effektivitet og god etik i den fælles opgaveløsning." (s. 7) Forsvarets Mission Vision og Strategi	20

12.3. CVF of The Armed Forces' Mission, Vision and Strategy

CVF score - The Danish Armed Forces strategic focus in Mission, Vision and Strategy

Dominant Characteristics

Organization Glue

Management of Employees

Organizational Leadership

Strategic Emphases

Criteria of Success
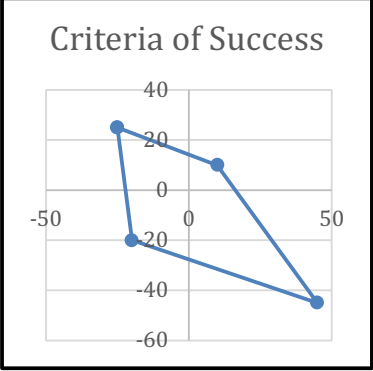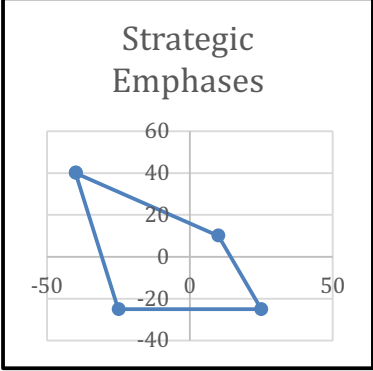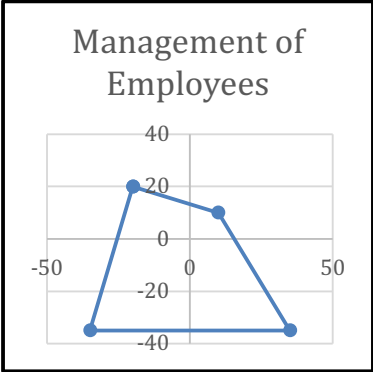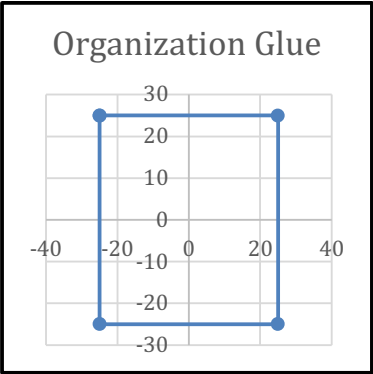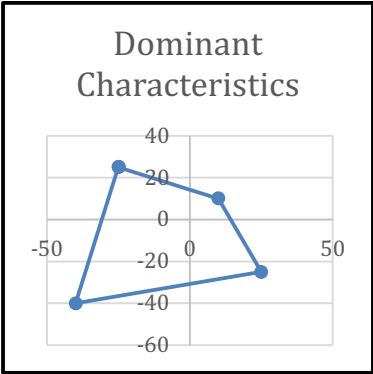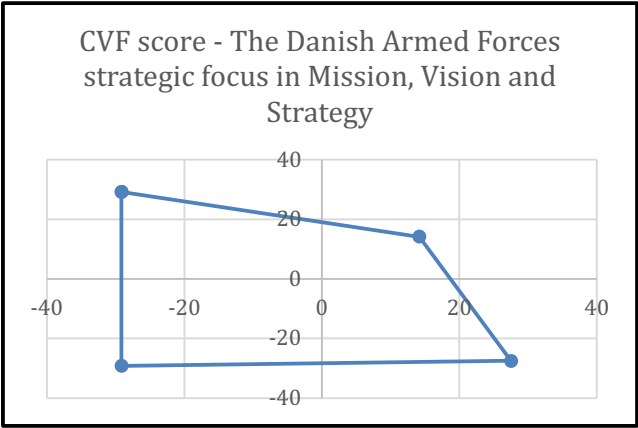
12.4. Questionnaire for the departments

Goddag

Som aftalt i telefonen følger her en nærmere beskrivelse af studiet der ønskes foretaget.

Formålet er at undersøge sammenhænge mellem afdelingers organisationskultur og en succesfuld implementering af Lean filosofien.

Gennem undersøgelsen ønskes det belyst, hvorvidt der i forsvaret kan drages en direkte parallel mellem afdelingers kultur og mulighederne for at implementere Lean.

Undersøgelsen tager udgangspunkt i de afdelinger og enheder i forsvaret, der aktivt anvender Lean i deres daglige virke.

Undersøgelsen tager udgangspunkt i et spørgeskema, hvorudfra der laves en kulturanalyse samt en vurdering at hvor succesfuldt Lean af medarbejderne ses værende implementeret.

Besvarede spørgeskemaer vil blive behandlet som anonyme, og vil kun blive kontakte som en del af den videre undersøgelse, hvis de i spørgeskemaet har givet udtryk for, at dette er i orden.

Spørgeskemaet er bygget op over tre dele:
- Del 1) Generelle oplysning; egne primære arbejdsområder samt holdning til implementeringen samt anvendelse af Lean i egen afdeling.
- Del 2) Kulturanalyse; 24 karaktertræk ift., hvorledes man opfatter kulturen i egen afdeling.
- Del 3) Kulturanalyse; 24 karaktertræk ift., hvilken kultur man gerne ville have i afdelingen.

Del 1: Generelle oplysninger

Hvad består dit arbejde i hovedsagen af: (Sæt kryds)	
Administration	

Lagerarbejde	
Ledelse	
Projektplanlægning og styring	
Værkstedsarbejde	

Sæt kryds ift. hvor enig du er i nedenstående udsagn, hvor 5 er "helt enig". (Sæt kryds)					
	1	2	3	4	5
Ledelsen anvender Lean elementer aktivt i deres udøvelse af ledelse i dagligdagen.					
Ledelsen anvender Lean ift. langsigtede planlægning i afdelingen.					
Ledelsen gennemfører de nødvendige investeringer, både langsigtet og kortsigtet, til understøttelse af Lean i afdelingen.					
Som medarbejder bliver jeg hørt af ledelsen, hvis jeg har forslag til optimeringer ift. afdelingens arbejde.					
Som medarbejder anvender, jeg dagligt værktøjer introduceret gennem Lean.					
Som medarbejder anvender jeg Lean som en måde at agere på ift. at gennemføre løbende optimeringer.					

Hvilken af nedenstående sætninger anser du for mest rammende for anvendelsen af Lean i din afdeling?	
Lean blev forsøgt implementeret, men det passede ikke ind i vores afdeling.	
Lean er implementeret i afdelingen, men det anvendes ikke aktivt.	
Lean er implementeret og anvendes aktivt, men foresatte anvender det ikke.	
Lean er implementeret og det har givet os en række nye praktiske værktøjer til at reducere spild.	

Lean er implementeret og har givet både afdelingen og foresatte nye værktøjer der dagligt anvendes.	
Lean er implementeret og har givet både leder og medarbejdere en helt ny måde at tænke på ift. hele tiden at søge nye optimeringsmuligheder i afdelingen.	

Del 2: Kulturanalyse – Hvordan oplever du kulturen i afdelingen?

Nedenstående beskrivende karaktertræk relaterer sig til, hvorledes du selv opfatter kulturen i din afdeling.

Der er seks emner, med hver fire beskrivende karaktertræk.

De fire spørgsmål prioriteres med totalt 100 point, hvor den mest sigende er den der får flest point.

Ex:

- Karaktertræk C, er med 40 point, den mest beskrivende, mens karaktertræk A er den mindst beskrivende for min afdeling.

1. Dominerende karakteristika		
Fordel 100 point på nedenstående udsagn. Flest point til det mest korrekte udsagn.		
	Point	
A	10	
B	30	Total = 100
C	40	
D	20	

1. Dominerende karakteristika	
Fordel 100 point på nedenstående udsagn. Flest point til det mest korrekte udsagn.	
	Point

A	Organisationen fremmer et fælles bidrag til opgaveløsningen hvor alles indsats værdsættes. Opgaven kan ikke løses af den enkelte alene, men alle deles om løsningen.		
B	Opgaver er interessante fordi de giver nye udfordringer og skaber dynamik. Variation i opgaver er ønskelig, da det fremmer innovation. Medarbejderne bliver grebet af opgaver selvom de er nye og risikofyldte.		
C	Opgaverne søges løst med de bedst mulige resultater for at give størst mulig profit eller opnå fastlagte markedsmål. Blandt medarbejderne er der konkurrence om opgaveløsningen.		
D	Opgaver løses på en struktureret måde og under stram kontrol. Kontrol af medarbejderne udøves i forhold til afdelingens procedurer og regler ift., hvorledes opgaver skal løses.		Total = 100

2. Ledelse i organisationen			
Fordel 100 point på nedenstående udsagn. Flest point til det mest korrekte udsagn.			
		Point	
A	Ledelsens rolle i opgaveløsning er at skabe de nødvendige rammer for medarbejdere ved at vejlede dem igennem arbejdsprocesser.		
B	Under opgaveløsning er ledelsen selv meget engageret i arbejdet og udviser meget innovation. Der opfindes nye og enestående måder at løse opgaver på.		
C	Ledelsen er optaget at opnå gode resultater med opgaveløsning og udviser aggressivt, krævende adfærd for at nå i mål.		
D	Ledelsen organiserer opgaveløsning på en koordineret måde i forhold til regler, direktiver og procedurer. Jævn arbejdsbelastning under opgaveløsningen er en forudsætning for god effektivitet.		Total = 100

3. Administrering af ansatte	
Fordel 100 point på nedenstående udsagn. Flest point til det mest korrekte udsagn.	
	Point

A	Opgaveløsningen er kendetegnet af at arbejde i grupper, hvor der fremmes medinddragelse i fællesskaber og opnås konsensus for opgaveløsninger.		
B	Opgaveløsningen er kendetegnet ved individuel risikotagen, innovation, frihed samt unikhed.		
C	Opgaveløsningen foregår i et konkurrerende miljø, høje krav samt krav om opnåelse af mål.		Total = 100
D	Opgaveløsningen er kendetegnet af stabilitet og anvendelse af afprøvede metoder. Medarbejder sikkerhed prioriteres højt.		

4. Sammenhængskræfter i organisationen			
Fordel 100 point på nedenstående udsagn. Flest point til det mest korrekte udsagn.			
		Point	
A	Limen der holder afdelingen sammen er stor loyalitet og gensidig tillid. Der er en stor grad af forpligtelse overfor afdelingen.		
B	Limen der holder afdelingen sammen er en fælles fokusering på innovation samt udvikling og fornyelse. Vi stræber efter at værende førende inden for vores felt.		
C	Limen der holder afdelingen sammen er en understregelse af opgaveløsning samt opnåelse af målsætninger. Opgaven er i fokus.		Total = 100
D	Limen der holder afdelingen sammen er formelle regler og politiker. Det at fastholde en smidig opgaveløsning i afdelingen er i fokus.		

5. Strategiske antagelser			
Fordel 100 point på nedenstående udsagn. Flest point til det mest korrekte udsagn.			
		Point	
A	Afdelingen understøtter medarbejdernes udvikling. En stor del tillid, åbenhed samt medinddragelse i opgaveløsningen kendertegner afdelingen.		
B	Afdelingen går efter at tilegne sig ny viden og nye ressourcer og herigennem skabe nye udfordringer der kan overvindes. Det at prøve nye ting af og målrettet gå efter nye muligheder er værdsat i afdelingen.		Total = 100

C	Afdelingen fokuserer på konkurrence og målopfyldelse i opgaveløsningen. Det at opnå opstillede målsætninger samt vinde nye markedsdele er i fokus.		
D	Afdelingen fokuserer på stabilitet og langsigtede mål. Effektivitet, kontrol og strømlinede processer er vigtige.		

6. Succeskriterier			
Fordel 100 point på nedenstående udsagn. Flest point til det mest korrekte udsagn.		Point	
A	Succes opnås i forhold til opgaven ved, at de menneskelige ressourcer udvikles. Opgaven løses af, at grupper og ansatte føler en forpligtelse overfor opgaven.		
B	Succes opnås bedst ved at opgaven løses på en ny måde, under anvendelse af de nyeste ressourcer, som ingen har gjort det før.		
C	Succes opnås såfremt, man ved at løse opgaven formår at udkonkurrere rivalerne og opnå større markedsandele eller indtage føringspositionen blandt konkurrenter.		
D	Succes opnås i forhold til effektiv opgaveløsning. Der anvendes minimalt af ressourcer til opgaven, minimale omkostninger, god planlægning og jævn arbejdsbelastning.		Total = 100

Del 3: Kulturanalyse – Hvordan vil du beskrive din fortrukne kultur i afdelingen?

Nedenstående beskrivende karaktertræk relaterer sig til, hvorledes du ser kulturen burde være i din afdeling.

Spørgsmålene er de sammen som ovenfor, og udfyldelsen sker på sammen vis, ved at fordele 100 point.

1. Dominerende karakteristika	
Fordel 100 point på nedenstående udsagn. Flest point til det mest korrekte udsagn.	
	Point

A	Organisationen fremmer et fælles bidrag til opgaveløsningen hvor alles indsats værdsættes. Opgaven kan ikke løses af den enkelte alene, men alle deles om løsningen.		
B	Opgaver er interessante fordi de giver nye udfordringer og skaber dynamik. Variation i opgaver er ønskelig, da det fremmer innovation. Medarbejderne bliver grebet af opgaver selvom de er nye og risikofyldte.		
C	Opgaverne søges løst med de bedst mulige resultater for at give størst mulig profit eller opnå fastlagte markedsmål. Blandt medarbejderne er der konkurrence om opgaveløsningen.		
D	Opgaver løses på en struktureret måde og under stram kontrol. Kontrol af medarbejderne udøves i forhold til afdelingens procedurer og regler ift., hvorledes opgaver skal løses.		Total = 100

2. Ledelse i organisationen			
Fordel 100 point på nedenstående udsagn. Flest point til det mest korrekte udsagn.			
		Point	
A	Ledelsens rolle i opgaveløsning er at skabe de nødvendige rammer for medarbejdere ved at vejlede dem igennem arbejdsprocesser.		
B	Under opgaveløsning er ledelsen selv meget engageret i arbejdet og udviser meget innovation. Der opfindes nye og enestående måder at løse opgaver på.		
C	Ledelsen er optaget at opnå gode resultater med opgaveløsning og udviser aggressivt, krævende adfærd for at nå i mål.		
D	Ledelsen organiserer opgaveløsning på en koordineret måde i forhold til regler, direktiver og procedurer. Jævn arbejdsbelastning under opgaveløsningen er en forudsætning for god effektivitet.		Total = 100

3. Administrering af ansatte	
Fordel 100 point på nedenstående udsagn. Flest point til det mest korrekte udsagn.	
	Point

A	Opgaveløsningen er kendetegnet af at arbejde i grupper, hvor der fremmes medinddragelse i fællesskaber og opnås konsensus for opgaveløsninger.		
B	Opgaveløsningen er kendetegnet ved individuel risikotagen, innovation, frihed samt unikhed.		
C	Opgaveløsningen foregår i et konkurrerende miljø, høje krav samt krav om opnåelse af mål.		Total = 100
D	Opgaveløsningen er kendetegnet af stabilitet og anvendelse af afprøvede metoder. Medarbejder sikkerhed prioriteres højt.		

4. Sammenhængskræfter i organisationen			
Fordel 100 point på nedenstående udsagn. Flest point til det mest korrekte udsagn.			
		Point	
A	Limen der holder afdelingen sammen er stor loyalitet og gensidig tillid. Der er en stor grad af forpligtelse overfor afdelingen.		
B	Limen der holder afdelingen sammen er en fælles fokusering på innovation samt udvikling og fornyelse. Vi stræber efter at værende førende inden for vores felt.		
C	Limen der holder afdelingen sammen er en understregelse af opgaveløsning samt opnåelse af målsætninger. Opgaven er i fokus.		Total = 100
D	Limen der holder afdelingen sammen er formelle regler og politiker. Det at fastholde en smidig opgaveløsning i afdelingen er i fokus.		

5. Strategiske antagelser			
Fordel 100 point på nedenstående udsagn. Flest point til det mest korrekte udsagn.			
		Point	
A	Afdelingen understøtter medarbejdernes udvikling. En stor del tillid, åbenhed samt medinddragelse i opgaveløsningen kendertegner afdelingen.		
B	Afdelingen går efter at tilegne sig ny viden og nye ressourcer og herigennem skabe nye udfordringer der kan overvindes. Det at prøve nye ting af og målrettet gå efter nye muligheder er værdsat i afdelingen.		Total = 100

C	Afdelingen fokuserer på konkurrence og målopfyldelse i opgaveløsningen. Det at opnå opstillede målsætninger samt vinde nye markedsdele er i fokus.		
D	Afdelingen fokuserer på stabilitet og langsigtede mål. Effektivitet, kontrol og strømlinede processer er vigtige.		

6. Succeskriterier			
Fordel 100 point på nedenstående udsagn. Flest point til det mest korrekte udsagn.			
		Point	
A	Succes opnås i forhold til opgaven ved, at de menneskelige ressourcer udvikles. Opgaven løses af, at grupper og ansatte føler en forpligtelse overfor opgaven.		
B	Succes opnås bedst ved at opgaven løses på en ny måde, under anvendelse af de nyeste ressourcer, som ingen har gjort det før.		
C	Succes opnås såfremt, man ved at løse opgaven formår at udkonkurrere riva-lerne og opnå større markedsandele eller indtage føringspositionen blandt kon-kurrenter.		Total = 100
D	Succes opnås i forhold til effektiv opgaveløsning. Der anvendes minimalt af ressourcer til opgaven, minimale omkostninger, god planlægning og jævn ar-bejdsbelastning.		

	Ja	Nej
Må der efterfølgende tages kontakt til dig pr. mail eller tlf. ift. den gennemførte undersøgelse?		

12.5. Data from the questionnaires

General		Org	TRR	TRR	TRR	TRR	TRR	TRR	TRR	TRR	FMI-PK	FMI-PK	FMI-PK	FMI-PK	FMI-PK	FMI-PK	FMI-PK	FMI-PK	FMI-LA	FMI-LA	FMI-LA	FMI-LA	FMI-LA	FMI-LA	FMI-LA	FMI-LA	FMI-LA
		Navn	████	████	████	████	████	████	████	████	████	████	████	████	████	████	████	████	████	████	████	████	████	████	████	████	████
		Arbejde	Ledelse	Ledelse	Administration	Ledelse	Ledelse	Ledelse	Administration	Administration	Administration	Projektplanlægning og styring	Administration	Administration	Administration	Projektplanlægning og styring	Administration	Administration	Projektplanlægning og styring	Projektplanlægning og styring	Projektplanlægning og styring	Administration	Projektplanlægning og styring	Projektplanlægning og styring	Projektplanlægning og styring	Administration	
Lean in the department	Management uses elements from Lean actively in their daily managerial approach.		5	3	4	4	3	5	4	3	2	2	3	1	2	2	2	3	2	2	3	1	1	2	2	3	1
	Management uses Lean for their longterm planning in the department.		4	2	3	3	3	4	5	3	2	1	2	1	1	2	1	3	1	3	2	1	2	3	2	2	1
	Management implements the nessesary investments, both long and short term, in order to support the Lean implementation in the department.		3	3	2	3	4	3	4	3	1	3	5	1	2	3	2	3	3	3	2	4	1	3	2	2	2
	As a employee management is willing to listen to my suggestions regarding optimization of processes in the department.		5	3	3	4	5	3	5	4	3	4	4	3	4	2	4	3	2	2	4	5	3	4	4	2	4
	As employee I uses tools introduces by Lean on a daily basis.		5	3	4	3	3	3	4	5	2	2	3	2	4	2	2	1	1	3	1	1	2	4	5	1	
	As employee I use Lean as a way to act in regards to contiuniously seeking optimizations.		5	3	4	4	5	3	4	5	2	4	3	3	3	4	3	4	2	3	3	2	3	3	2	4	2
The use of Lean	Lean was introduced to the department, but it did not fit in.										x	x				x				x							
	Lean is implemented in the department, but is not actively used.			x		x	x						x	x		x	x	x			x				x	x	x
	Lean is implemented and is used actively, but not by higher management.				x			x		x							x							x			
	Lean is implemented and it has given us a number of new effective and practical tools to reduce waste.				x								x						x	x		x		x	x	x	
	Lean is implemented and has given both the department and higher management a new tools which is used daily.																	x									
	Lean is implemented and has given both managers and employees a hole new way of thinking in order to contiuniously seeking ways of optimize our processes.		x		x		x		x																		
1: Dominant Characteristics - current	1A-The organization is a very personal place. It is like an extended family. People seem to share a lot of themselves.		40	30	30	40	40	23	40	30	20	35	30	0	30	20	40	30	40	10	5	30	30	15	40	30	30
	1B-The organization is a very dynamic entrepreneurial place. People are willing to stick out their necks and take risks.		30	20	30	20	10	24	35	50	30	35	60	0	20	30	35	20	40	20	5	30	30	25	40	30	35
	1C-The organization is very results-oriented. A major concern is with getting the job done. People are very competitive and achievement-oriented.		20	40	10	30	30	36	10	10	10	20	0	0	0	10	40	10	40	10	0	20	0	35	10	20	20
	1D-The organization is a very controlled and structured place. Formal procedures generally govern what people do.		10	10	30	10	20	17	15	10	40	10	10	100	50	40	15	10	10	30	90	20	40	25	10	20	10
2: Organizational Leadership - current	2A-The leadership in the organization is generally considered to exemplify mentoring, facilitating, or nurturing.		20	30	30	40	30	16	40	40	30	50	60	0	0	30	40	30	40	25	25	50	60	40	25	50	
	2B-The leadership in the organization is generally considered to exemplify entrepreneurship, innovation, or risk taking.		40	20	20	20	10	8	20	40	40	0	0	20	40	40	20	30	10	25	25	10	10	30	25	20	
	2C-The leadership in the organization is generally considered to exemplify a no-nonsense, aggressive, results-oriented focus.		10	10	20	10	20	0	10	10	20	10	0	50	30	20	10	10	0	40	25	25	0	15	0	25	10
	2D-The leadership in the organization is generally considered to exemplify coordinating, organizing, or smooth-running efficiency.		30	40	30	30	40	76	30	10	10	20	40	50	50	10	30	40	30	30	25	25	40	15	30	25	20
3: Management of Employees - current	3A-The management style in the organization is characterized by teamwork, consensus, and participation.		40	30	10	30	10	3	40	40	40	30	20	0	50	40	40	30	80	10	30	35	10	25	80	35	30
	3B-The management style in the organization is characterized by individual risk taking, innovation, freedom, and uniqueness.		20	20	30	20	20	1	25	20	10	40	20	50	30	10	25	20	20	20	30	5	20	20	20	5	40
	3C-The management style in the organization is characterized by hard-driving competitiveness, high demands, and achievement.		10	10	10	10	40	1	5	10	20	10	0	0	0	20	5	10	0	40	10	5	10	15	0	5	10
	3D-The management style in the organization is characterized by security of employment, conformity, predictability, and stability in relationships.		30	40	50	40	30	95	30	30	30	20	60	50	20	30	30	40	0	30	30	35	60	40	0	35	10
4: Organization Glue - current	4A-The glue that holds the organization together is loyalty and mutual trust. Commitment to this organization runs high.		40	40	40	30	10	30	25	40	30	30	50	0	50	30	25	40	10	20	20	40	40	60	10	40	30
	4B-The glue that holds the organization together is commitment to innovation and development. There is an emphasis on being on the cutting edge.		30	30	10	20	20	10	25	20	10	50	20	0	0	10	25	30	30	10	0	10	20	10	30	10	50
	4C-The glue that holds the organization together is an emphasis on achievement and goal accomplishment.		20	20	30	40	40	30	25	30	40	10	20	0	30	40	25	20	30	40	40	35	10	20	30	35	10
	4D-The glue that holds the organization together is formal rules and policies. Maintaining a smooth-running organization is important.		10	10	20	10	30	30	25	10	20	10	10	100	20	20	25	10	30	30	40	15	30	10	30	15	10

Category	Item																									
5: Strategic Emphases - current	5A-The organization emphasizes human development. High trust, openness, and participation persist.	40	30	50	40	20	30	40	40	30	30	60	0	20	30	40	30	40	20	20	35	40	50	40	35	30
	5B-The organization emphasizes acquiring new resources and creating new challenges. Trying new things and prospecting for opportunities are valued.	30	20	30	30	10	30	35	30	40	30	5	0	30	40	35	20	30	10	20	25	10	15	30	25	30
	5C-The organization emphasizes competitive actions and achievement. Hitting stretch targets and winning in the marketplace are dominant.	10	10	10	10	40	10	10	10	10	20	5		0	10	10	10	0	40	0	15	0	10	0	15	20
	5D-The organization emphasizes permanence and stability. Efficiency, control and smooth operations are important.	20	40	10	20	30	30	15	20	20	20	30	100	50	20	15	40	30	30	60	25	50	25	30	25	20
6: Criteria of Success - current	6A-The organization defines success on the basis of development of human resources, teamwork, employee commitment, and concern for people.	40	40	40	30	40	30	35	40	20	60	70		50	20	35	40	50	30	20	50	60	40	50	50	60
	6B-The organization defines success on the basis of having the most unique or newest products. It is a product leader and innovator.	20	20	30	20	30	10	25	25	10	20	5		20	10	25	20	0	10	0	5	10	10	0	5	20
	6C-The organization defines success on the basis of winning in the marketplace and outpacing the competition. Competitive market leadership is key.	10	10	0	10	10	10	10	10	30	5	0		0	30	10	10	0	20	0	0	0	10	0	0	5
	6D-The organization defines success on the basis of efficiency. Dependable delivery, smooth scheduling and low-cost production are critical.	30	30	30	40	20	50	30	25	40	15	25	100	30	40	30	30	50	40	80	45	30	40	50	45	15
1: Dominant Characteristics - current	1A-The organization is a very personal place. It is like an extended family. People seem to share a lot of themselves.	40	40	35	30	30	50	40	40	30	50	40		30	30	40	40	50	40	50	40	60	40	50	40	50
	1B-The organization is a very dynamic entrepreneurial place. People are willing to stick out their necks and take risks.	30	30	35	40	40	50	35	40	40	30	30	100	50	40	35	30	50	30	50	20	40	50	40	20	30
	1C-The organization is very results-oriented. A major concern is with getting the job done. People are very competitive and achievement-oriented.	10	10	5	20	20	0	10	10	10	10	10		0	10	10	10	0	10	0	10	0	10	0	10	10
	1D-The organization is a very controlled and structured place. Formal procedures generally govern what people do.	20	20	25	10	10	0	15	10	20	10	20		20	20	15	20	0	20	0	30	20	10	0	30	10
2: Organizational Leadership - current	2A-The leadership in the organization is generally considered to exemplify mentoring, facilitating, or nurturing.	40	40	40	30	40	30	40	40	30	60	40	100	30	30	40	40	40	40	55	30	60	50	40	30	60
	2B-The leadership in the organization is generally considered to exemplify entrepreneurship, innovation, or risk taking.	30	20	20	20	30	20	20	40	40	20	20		20	40	20	20	30	30	15	10	10	20	30	10	20
	2C-The leadership in the organization is generally considered to exemplify a no-nonsense, aggressive, results-oriented focus.	10	10	10	10	10	0	10	5	10	10	10		0	10	10	10	0	10	15	20	0	10	0	20	10
	2D-The leadership in the organization is generally considered to exemplify coordinating, organizing, or smooth-running efficiency.	20	30	30	40	20	50	30	15	20	20	30		50	20	30	30	30	20	15	40	30	20	30	40	20
3: Management of Employees - current	3A-The management style in the organization is characterized by teamwork, consensus, and participation.	40	20	10	40	40	33	40	40	30	40	20		30	30	40	20	50	30	40	45	50	30	50	45	40
	3B-The management style in the organization is characterized by individual risk taking, innovation, freedom, and uniqueness.	30	30	30	20	30	33	25	15	40	30	30	34	20	40	25	30	40	40	20	5	30	30	40	5	30
	3C-The management style in the organization is characterized by hard-driving competitiveness, high demands, and achievement.	10	10	10	10	1	5	5	10	15	10	33		0	10	5	10	0	10	20	10	0	10	0	10	15
	3D-The management style in the organization is characterized by security of employment, conformity, predictability, and stability in relationships.	20	40	50	30	10	33	30	40	20	15	40	33	50	20	30	40	10	20	20	40	20	30	10	40	15
4: Organization Glue - current	4A-The glue that holds the organization together is loyalty and mutual trust. Commitment to this organization runs high.	40	40	40	30	30	50	25	40	30	40	40		50	30	25	40	20	30	40	40	70	50	20	40	40
	4B-The glue that holds the organization together is commitment to innovation and development. There is an emphasis on being on the cutting edge.	20	10	20	20	40	10	25	20	40	40	10		30	40	25	10	30	20	35	10	20	20	30	10	40
	4C-The glue that holds the organization together is an emphasis on achievement and goal accomplishment.	30	30	30	40	20	15	25	25	20	10	30	50	0	20	25	30	30	10	15	35	0	10	30	35	10
	4D-The glue that holds the organization together is formal rules and policies. Maintaining a smooth-running organization is important.	10	20	10	10	10	25	25	15	10	10	20	50	20	10	25	20	20	20	10	15	10	20	20	15	10
5: Strategic Emphases - current	5A-The organization emphasizes human development. High trust, openness, and participation persist.	40	40	40	40	30	50	40	40	40	35	40	50	30	40	40	40	50	40	40	25	60	30	50	25	35
	5B-The organization emphasizes acquiring new resources and creating new challenges. Trying new things and prospecting for opportunities are valued.	20	30	30	20	40	20	35	40	30	25	30	50	20	30	35	30	0	30	40	25	20	20	0	25	25
	5C-The organization emphasizes competitive actions and achievement. Hitting stretch targets and winning in the marketplace are dominant.	10	10	20	10	20	5	10	10	10	15	10		0	10	10	10	0	10	10	10	0	20	0	10	15
	5D-The organization emphasizes permanence and stability. Efficiency, control and smooth operations are important.	30	20	10	30	10	25	15	10	20	25	20		50	20	15	20	50	20	10	40	20	30	50	40	25
6: Criteria of Success - current	6A-The organization defines success on the basis of development of human resources, teamwork, employee commitment, and concern for people.	40	40	40	30	40	75	35	40	40	60	40		50	40	35	40	40	40	40	30	50	35	40	30	60
	6B-The organization defines success on the basis of having the most unique or newest products. It is a product leader and innovator.	20	20	20	20	30	5	25	25	30	20	20	50	20	30	25	20	10	20	40	15	10	20	10	15	20
	6C-The organization defines success on the basis of winning in the marketplace and outpacing the competition. Competitive market leadership is key.	10	10	10	10	10	5	10	5	10	5	10		0	10	10	10	0	10	0	15	0	10	0	15	5
	6D-The organization defines success on the basis of efficiency. Dependable delivery, smooth scheduling and low-cost production are critical.	30	30	30	40	20	15	30	30	20	15	30	50	30	20	30	30	50	30	20	40	40	35	50	40	15

12.6. CVF of FMI-LA

12.7. CVF – FMI-PK

CVF - FMI - PK

Perceived Culture — Desired Culture

Dominant Characteristics

Perceived Culture
Desired Culture

Organizational Leadership

Perceived Culture
Desired Culture

Management of Employees

Perceived Culture
Desired Culture

Organization Glue

Perceived Culture
Desired Culture

Strategic Emphases

Perceived Culture
Desired Culture

Criteria of Success

Perceived Culture
Desired Culture

12.8. CVF – TRR

CVF - TRR

Dominant Characteristics

Organizational Leadership

Management of Employees

Organization Glue

Strategic Emphases

Criteria of Success

12.9. Questionnaire for interviews supporting the CVF findings.

To support the findings in the CVF from the three departments semi structured interview were conducted per phone.

The focus was on the TRR department in order to establish how successful the Lean implementation had been and how their desired culture was seen in relation to the Lean philosophy.

Two interviews were made. One with the manager of the TRR department and one with a sub-manager within the same department.

The interviews were centred around the same questions as presented through the initial questionnaire, in an effort to fully understand to what extent Lean had been implemented as a set of tools or as a philosophy.

Questions which were part of the interviews:

1)	Management uses elements from Lean actively in their daily managerial approach.
2)	Management uses Lean for their long-term planning in the department.
3)	Management implements the necessary investments, both long and short term, in order to support the Lean implementation in the department.
4)	As an employee management is willing to listen to my suggestions regarding optimization of processes in the department.
5)	As employee I uses tools introduces by Lean on a daily basis.
6)	As employee I use Lean as a way to act in regard to continuously seeking optimizations.
7)	Lean was introduced to the department, but it did not fit in.
8)	Lean is implemented in the department but is not actively used.
9)	Lean is implemented and is used actively, but not by higher management.
10)	Lean is implemented and it has given us a number of new effective and practical tools to reduce waste.
11)	Lean is implemented and has given both the department and higher management a new tool which is used daily.

12)	Lean is implemented and has given both managers and employees a whole new way of thinking in order to continuously seeking ways of optimize our processes.

The interviews are attached as audio files.