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Digitalization in healthcare

A multiple case study of a change undergone in the Norwegian public health sector

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Abstract

This study looks at organizational change in a digitalization context and has the purpose of providing insight on how and why an digitalization effort might vary within departments in the same organization. This is done by conducting an exploratory study and examining the differences between implementation and use of a health care system (Mobil Omsorg) within two units in the The Agency for Residential and Home Care Services in Bergen municipality. The outcome of change processes depends on a number of elements, this study has thus chosen to primarily focus on employee and management attitudes toward change and change management.

Throughout our study we find that attitude towards the change and management action has affected the seemingly differing results between the departments. We see firstly that there exists differences between departments in the levels of resistance towards change experienced. We see how their initial experience with the change has affected each department in their post-implementation phase. Furthermore, we see that both departments had a certain lack of clarity and communication regarding how the units can capitalize and realize expected gains provided by the project. This fault in communication originated from top management and we see how the departments have dealt with this.

Despite their seemingly differing results, we find that, in the long run, the departments experience somewhat the same degree of success. The main difference being the time spent on achieving this success. We see how some of the goals of the change is less dependent on manager action to be achieved. Furthermore, both departments are being tested on anchoring the change further in the department due to malfunctioning hardware.

Keywords – Digitalization, Change Management, Organizational Change, Public Sector

Contents

List of Figures

1 Introduction

Digitalization has been identified as one of the most impactful trends affecting not only organizations short and long-term future, but also society as a whole (Parviainen et al., 2017). An increasing number of services are being offered through a digital medium as organizations change their activities to adapt to a new reality. We are therefore seeing a raising number of cases where organizations are trying to implement their digitalization effort, across both industries and sectors.

Organizational change is however not easy, and digitalization is no exception to this. In a report done by McKinsey (2012), researchers found that on average, large IT projects run 45 percent over budget, 7 percent over time, and deliver 56 percent less value than predicted (Bloch et al., 2012). Considering the amount of digitalization efforts being implemented the last decade, these failures have accumulated into heavy losses for society. Some industries do however experience a higher degree of success than others, some even achieving a degree of digital transformation.

Others however, such as the healthcare industry have experienced higher difficulty in implementing successful digitalization process. Why this is the case is interesting due to several reasons. The healthcare industry has an important role in society and therefore changes in this industry affect many people. Furthermore, in the context of Norway, the primary funding for the healthcare industry is provided by the government. Funds wasted due to failed digitalization projects are expenditure of taxpayer's money. The new national healthcare plan refers to digitalization of the Norwegian healthcare industry as a prerequisite to be able to provide good enough healthcare services (The Norwegian Directorate of e-Health, 2019). This co-aligns with the government ever increasing attention towards digitalization efforts in the healthcare industry. Yet, despite increasing efforts, digitalization of the healthcare industry has been portrayed as problematic (DIPS, 2019). These points seem to indicate that digitalization of the healthcare industry is not going to be stopped. There will therefore be much effort dedicated towards digitalization in the coming years, and it is thus important to understand how digitalization efforts can achieve a higher degree of success.

This study is written with the the purpose of increasing the understanding of the digitalization phenomena. We try to achieve this by shedding a light on why the result of a digitalization process might vary between two departments with inherently similar prerequisites. The case studies were chosen with these points in mind.

Based on the mentioned moments the following research question has been derived:

Why might the result of a digitalization process vary within the same organization in the public healthcare sector

To answer this research question, we conducted a multi-case study of two departments from the Norwegian Healthcare Industry. The involved departments are from the same municipality and share many of the same characteristics. Both departments went through the same digitalization effort during roughly the same period, yet have achieved seemingly differing results. The departments possess the same prerequisites; therefore, their similarities give us the opportunity to look at which aspect of the change lead to their differing results.

In the beginning of the study we start with making a clear distinction between technological change and digitalization. We will debate on whether digitalization is a novel form of organizational change. Furthermore, we are going to present the chosen literature which we will apply to answer our research question. Attitudes role and importance in affecting organizational change will be highlighted and reviewed, followed by change management theory. After the theoretical introduction, we present the case that we will conduct our study on. We will introduce the departments and the change effort they went through. Following the description of the case we discuss our methodological choices and justifications before we move unto presenting our findings. We will present our findings from our document analysis and semi-structured interviews before analysing these findings and answering our research question. The study will conclude with a conclusion, followed by implication for management and a review of our studies limitations.

2 Literature

In the following chapter we are going to cover the literature we have chosen to review when conducting our study. We will firstly start broadly with the theme of organizational change and digitalization. Furthermore, to answer our research question we are more specifically going to focus the literature review on the subject of attitude, change management and what role they play in affecting the success of organizational change. We have provided a simple model to provide an overview of our approach.

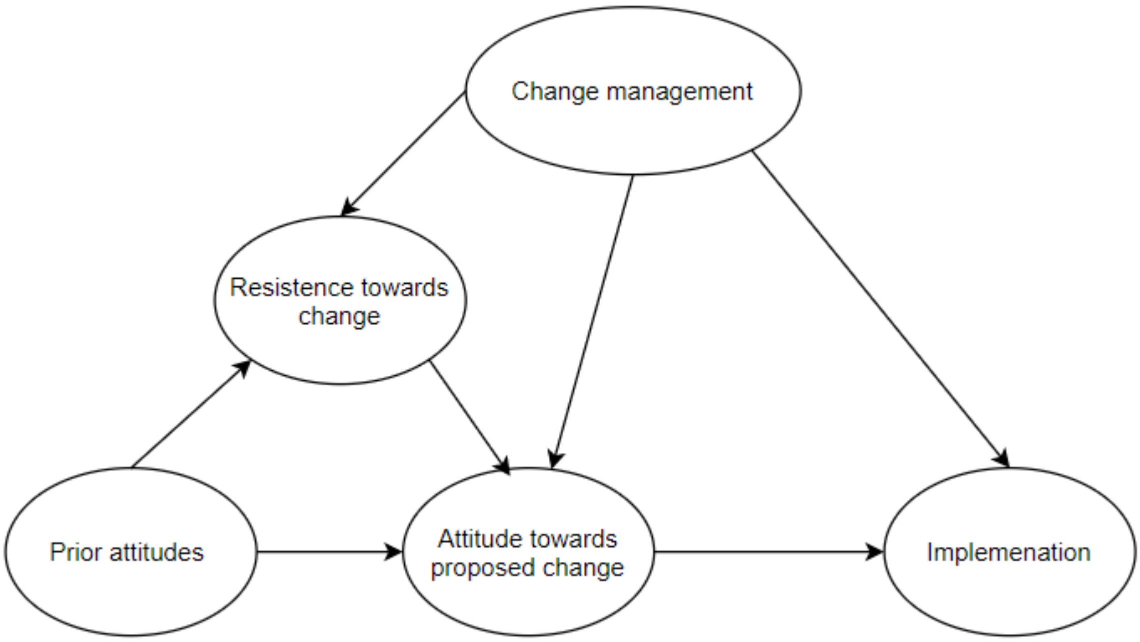

Figure 2.1: Literature overview

2.1 Organizational change

Organizational change is defined as a deliberately planned change in an organization's formal structure, systems, processes, or product-market domain intended to improve the attainment of one or more organizational objectives (Lines, 2005). Followed from this definition, organizations go through an organizational change when they aim to achieve a certain objective, the change is therefore intentional. The definition does not however shed light on the conditions that made this change happen, it focuses only on its intentions and the fact that it was deliberate. Organizational change might occur as a consequence of the organization's environment. As the environment of the organizations are changing, organizations are dependent on changing themselves to adapt to the new reality. These changes can vary from small incremental changes to large scale industrial changes that change the entire organizations daily activities. A failure to adapt might lead to a loss for the organization in the form of purely financial terms or at worst, the organization seizing to exist entirely. Organizations might also seek organizational changes themselves without much external pressure when trying to improve their daily activities or seeking new opportunities. These changes might be due to conditions and opportunities that the organizations believe they can capitalize on or be due to the organization's commitment to a new strategy.

Organizational change is not an easy endeavour and much research has been trying to understand why organizations fail with their changes and try to develop best practices to avoid such failures. Research from Hammer and Champy (2009) suggest that only around 30% of changes can be characterized as a success. The narrative of organizational change having a 30% success rate is a instance which is referenced to several times in other reports and research(Beer et al., 2000; Kotter, 2008; Senturia et al., 2008). This point has however been criticised for being inaccurate (Hughes, 2011). Hughes (2011) points to that the narrative of "only 30% of organizational changes succeeding" is not correct, as there is no empirical evidence to support it. In his research he identifies the origin of this narrative and highlights its unfounded statement. He furthermore suggests that the specific statistic and point raised by Hammer and Champy (2009) refer specifically to reengineering efforts and not to organizational change as a whole. Even though calculating the exact failure rate of organizational change might be challenging, the overarching point raised by Hammer and Champy(2009) and others still apply - organizational change is challenging, and many changes do not live up to their expectations.

As briefly touched upon earlier, within organizational change several sub-categories of different types of organizational changes can be identified. Examples of these can be changes such as re-structuring organizational units, downsizing, technological changes, cultural changes, or strategic changes. Numbers collected from Smith (2002) points to the fact that these sub-categories of organizational change have a varying degree of success. In other words, different types of organizational change have differing success rates. Data collected from Smith (2002) points to a success rate of 58% for structural changes, conversely cultural changes have a success rate of 19%. Problems with estimating the exact numbers has been addressed in the article, and must be taken into consideration. The numbers however have value because they highlight that the success rate of different types of organizational change vary. These findings endorse an approach that takes these contextual differences in mind when understanding an organizational change. We will therefore in the next section look closer at the context of digitalization and technological change. We believe it is important to understand whether one needs to make a distinction between these types of organizational change or whether one can use these terms interchangeably.

2.2 Digitalization and technological change

The term digitalization is increasingly used in different set of circumstances, varying from everyday conversations to news articles to more important and consequential discussions between politicians and top management of large corporations. Using the media search engine, Retriever/Atekst, the term digitalization was referenced in articles 747 times in 2014 before experiencing an increase to 4468 times in 2017 (Haugnes, 2018). This sudden increase of the term digitalization has led to the phenomenon not being interpreted in the same way, as there is no universal agreement as to what it is. Often when the term digitalization is being referenced it's not defined, yet many of those that do define it, use a definition provided by Yoo et al (2010). They define the term digitalization as following

> *By digitalization, we mean the transformation of socio-technical structures that were previously mediated by non-digital artifacts or relationships into ones that are mediated by digitized artifacts and relationships. Digitalization goes beyond a mere technical process of encoding diverse types of analog information in digital format (I.e., digitization) and involves organization new socio-technical structures with digitized artifacts as well as the changes in artifacts themselves.* (Yoo et al., 2010, p. 6)

The first important distinction to make is between digitalization and digitization. Digitization unlike digitalization is purely a technical process which consist of transforming analogue data and components into digital data and components (Osmundsen et al., 2018). An example of such a distinction is when a health institution starts converting patient information from paper and save them representing it digitally. This would be an example

of digitization, and not digitalization. Digitalization will however be the case, when the patient information is saved digitally and applied accordingly with new applications and technology that help the organization either improve on their current set of products and services or provide new opportunities. Digitalization provides the organization with new ways to work with and therefore, either changes the social constructs or creates new ones (Mihailescu et al., 2015). Digitization is however a driver and prerequisite for digitalization, and they are therefore strongly connected.
Widespread digitalization across an organization or industry could lead to digital transformation. Digital transformation is when digitalization over time is used to enable substantial changes in the way activities are done, and that leads to significant changes throughout an organization or industry (Osmundsen et al., 2018). Digitalization efforts can sometimes best be understood with digital transformation in mind. The Norwegian Government's plan for digitalization effort is part of a plan to digitalize the entire health care industry in Norway (Norwegian Ministry of Local Government and Modernisation, 2016). A single digitalization effort is thus best understood as a part of the whole project to achieve digital transformation in the long run. We therefore see that these terms are inter-connected and by understanding the contextual relationship between them, we can better understand them individually.

This understanding of digitalization conjures a larger image of what a digitalization process would entail and asses it as a form of organizational change. Digitalization would imply changes to the formal structures like for example routines and other formalized structures but also introduce new technical solutions as either tools to use or as assistance. These aspects do raise a question with regard to whether digitalization is a novel form of organizational change or rather a rebranding of technological change. Technological change refers to process of introducing and using new technologies in order to alter the organization. New technologies do not have any exclusivity however, technological change might include any type of technology. This is unlike digitalization where the involved technology is exclusively of the digital type or another form of information technology. This would imply that a digitalization project could be referred to as a technological change in respect to the technology used. Even though the word digitalization is relatively new, a retrospective view on technological changes would easily find several changes that would satisfy the digitalization definition. The opposite cannot be said however, a technological change is not given to be digitalization. Therefore, digitalization in that regard is not a novel form of organizational change. However, as earlier mentioned digitalization is best understood in a broader context. The digitalization phenomenon is therefore more about scale and depth, rather than just the individual change process. Digitalization as a phenomenon is happening across almost every industry, including the public sector. Often with the intention of achieving digital transformation in the long run. Whether digitalization is another form of technological change is difficult to determine, as the change process is not novel. Yet, the contextual circumstances around the process gives it a degree of novelty due to its scale, depth, and consequence. Therefore, when trying to understand a digitalization process one can derive from knowledge based on technological change, and change process to a certain degree. It is important to remember that due to the contextual differences some key aspects might differ when looking at a digitalization process rather than a general technological change. In the following sections we are going to view some key aspects to understand a digitalization process. Firstly, the importance of attitude towards change is reviewed, followed by change management.

2.3 Attitudes towards change

Attitude is the first important phenomenon we are going to review to understand a digitalization effort. It was chosen due to its prominent role in organizational change literature as it has been identified as an important factor to understand change in previous research(Vakola and Nikolaou, 2005). In the following section we are firstly going to look at how an attitude is structured. To understand the origins of an attitude towards an attitude object we believe it is useful to understand what dimensions an attitude consists of and which subparts an attitude towards an object can be broken into. With the knowledge of the attitude structure in mind, we are secondly, going to delve into how attitudes are formed and highlight several prominent factors that affect the formed attitude. Lastly, we are going to touch upon the subject of attitude perseverance.

2.3.1 The attitudes structure

Determining the structure of an attitudes towards an object can be done using Thompson and Hunts (1996) model. Using their model, we can assume that an attitude is hierarchically structured and thus enable us to make an overall evaluation of the attitude towards the attitude object (Thompson and Hunt, 1996). The model consists of three levels, superordinate, basic and a subordinate level. At the superordinate level, attitude can be thought of as a summary of the overall evaluation of the attitude object, either positive or negative. At the basic level we find beliefs which are the characteristics attributed to an object or the perceived relationship between two objects. Beliefs can be either evaluative (good or bad) or nonevaluative (true or false) and often there exists a relationship between the two as evaluative beliefs are based on nonevaluative beliefs(Thompson and Hunt, 1996). Lastly, at the subordinate level there are values. Values serve as the criteria by which objects, actions or events are evaluated (Bar-Tal, 1990, p.51), values provide the comparison standard for beliefs (Thompson and Hunt, 1996). The aforementioned lower levels of the model have a dual purpose. Emotions, beliefs, and values are the sources of the attitude, yet they can also be seen as part of the attitude itself. This is due to that the lower levels can be retrieved or activated again when the individual has reoccurring encounters with the attitude object.

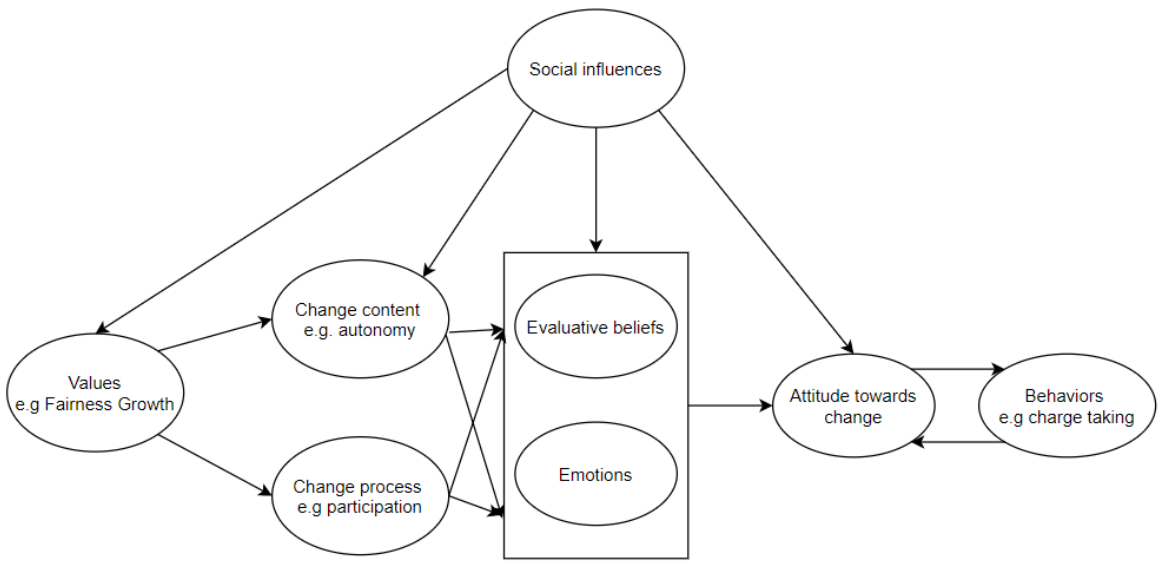

Figure 2.2: Thompson Hunts attitude model (1996)

An attitude has two dimensions associated with it, attitude strength and valence(Lines, 2005). Valence is a dualist dimension consisting of it being either positive or negative. Its poles are straightforward, as a positive valence refers to positive attitudes towards an attitude object. Conversely, negative valence would refer to negative attitude towards an attitude object. An attitudes valence has an important functional use for the individual. When an individual has a given valence, it spares them the effort of constantly revaluating and recreating an attitude towards an attitude object on new encounters. Therefore, once an attitude has been formed, the valence functions as an evaluator for the individual when exposed to the attitude object in subsequent encounters.

The other dimension of an attitude is the attitudes strength. Unlike valence, the strength dimension has a range which varies from low to high. Attitude strength can be thought of as the degree to which an attitude towards an object is perceived as important to the individual (Lines, 2005). Therefore, a low attitude strength would mean that the attitude is not very important, while high attitude strength would indicate that it is important. Attitude strength is important for three reasons. Firstly, the strength is an important factor to highlight the relationship between the attitude object and the attitude. While strong attitude nearly always activates a response to the attitude object from the individual, low strength may imply that the attitude is not necessarily activated when the individual encounters the attitude object. Secondly, the consistency of the response from the individual when encountered with the attitude object is determined by the attitude strength. Thirdly, the influences created by an attitude is driven by the attitude strength. Attitude strength influences the tensions produced by an attitude object and is therefore important when assessing what actions need to be taken to reduce such consequences. In the following section we are going to discuss the elements that contribute to how the strength and valence of the attitude is determined.

2.3.2 Attitude formation

Formation of attitude towards a change starts when the organizational members are exposed to information about a pending change, the attitude object. Attitude theory entails that attitude formation is based upon the individual's consideration of a subset of characteristics drawn from the attitude object (Lines, 2005). Therefore, not all the attitude objects characteristics are being drawn in when forming an attitude, neither is every characteristic equally important. Which subset that will be considered are based on beliefs about the change. These beliefs are themselves based upon how they perceive the changes will affect their job characteristics, or whether the change is compatible with their values. The perception of the organizations ability to handle change in such a way that the important objectives are met, is also a component in affecting employees attitude towards change. Besides evaluative beliefs, individuals can also react emotionally towards the change. Information about the change can trigger emotions such as frustration, relief, joy, or anger. The belief and emotions towards the change are formed therein into an attitude towards the change that influences later reoccurring emotions about the change, the processing of change-relevant information and behaviour towards the change. This view of attitude formation entails that the individuals do not have an attitude towards the attitude object before the introduction. Research concerning organizational change cynicism (OCC) however, indicate that an individual might possess an antecedent attitude towards change, even before hearing about the attitude object for the first time(Bakari et al., 2017). OCC is generally characterized by pessimism and scepticism regarding the organizations' ability to change and loss of faith in leaders of change in response to a history of change attempts that have not entirely been successful (Wanous et al., 2000). The individuals past change experiences have made an effect on the individual's attitude towards changes in general, this attitude has thus consequences for new suggested changes that the individual evaluates. Recognizing that the individual might be affected by previous change experiences does not however mean rejecting the elements of attitude formation that was previously mentioned. It stresses however that attitude formation towards an object might occur from a non-empty base and the formed attitude must therefore be evaluated with this in consideration.

As previously mentioned, individuals judge an attitude object according to their values. One such value is work value. Work values are desired states that a person thinks he or she should be to realize through working, and they guide a person's belief concerning specific job and work activities (Nord et al., 1990). Work value can be further specified in two parts, intrinsic and extrinsic work values. Intrinsic work values refer to end states that can be reached through the work itself, while extrinsic work values are end states that can be reached as a consequence of the work (Georgel and Jones, 1997). Examples of intrinsic work values might be a sense of fulfilment from doing the work, while an extrinsic example is the salary one receives from said work. The research done by Hackman and Oldham (1975) helps further identify which change characteristics might underlie the formation of an attitude towards change. Their research identified current job characteristics and linked these both to work values and attitudes toward work. By identifying the following job characteristics like skill variety, task identity, significance, autonomy, and feedback we can map the individual's attitude towards their job. Because of this perspective, attitude formation towards a change can be evaluated based on the individual's belief on how the change will affect the previously mentioned job characteristics. The strength and valence of the formed attitude will then be based on how the individual perceives their initials job dimension states and how they believe this change will affect it. For example, an individual that experiences an optimal level of task variety will likely react negatively to a change that will increase task variety (Lines, 2005). In term of job characteristics, in digitalization efforts, digital devices that alter aspects of the work are introduced. These digital devices vary largely regarding their novelty, complexity and of what consequence they are for the employee's daily activities. These digital devices might alter either all or just a few of the job characteristics. Introduction of new digital devices is often done with the intention of improving an aspect of the organizations activates yet it might also bring negative consequences for the employees in the form of technostress. Technostress refers to the negative psychological effects of using digital devices (Weil and Rosen, 1997). Technostress theory is rooted in the cognitive paradigm where stress emerges as phenomenological process reflected in the relationship between the individual and the demands placed by the environment (Ayyagari et al., 2011). Therefore, technostress is created not only as a product of the environment placing objectively higher demands that the individual cannot meet, but also from subjectively perceived beliefs about these demands. We see then how perceptions about the digital devices might lead to affect the attitude as the technostress proceeds to become a threat to the individuals well-being at work. The transaction theory of stress consists of four major components: stressors, situational factors, strain and outcomes (Cooper et al., 2001). Stressors refer to the conditions, states, demands that stimulate an environment with a potential to create stress. Situational factors are the organizational mechanism that can reduce the impact of the stressors. In recent IS research, stressors have been termed technostress creators, while situational factors are referred to as technostress inhibitors (Ragu-Nathan et al., 2008). Therefore, these terms will be used to highlight the contextual factor of the stressors and situational factors. Technostress creators can be referred to as the digital device related circumstances and factors that have the potential to create strain for the employees in an organization. Tarafdar et al.(2007) conceptualized technostress creators as consisting of five main categories or components:

- Techno-overload refers to digital devices potential to drive an employee to work faster.
- Techno-invasion refers to digital devices potential to invade an employee's personal life with possibilities to, for example, perform job tasks.
- Techno-complexity refers to an inherent quality of digital devices that makes employees feel incompetent.
- Techno-insecurity refers to the premise that the digital devices nature is to change regularly, and that this may threaten employee job security.
- Techno-uncertainty refers to the constant changes and upgrades of software and hardware that may impose stress on employees.

Technostress inhibitors refer to the organizational mechanism that can potentially reduce the impact of the strain caused by the digital devices. Ragu-Nathan et al. (2008) conceptualized technostress inhibitors as consisting of three main categories or components:

- Technical support provision refers to support mechanisms in the sense of institutionalized support (e.g. providing a helpdesk).
- Literacy facilitation refers to mechanisms that increase employee levels of digital literacy (e.g. encouragement of digital devices knowledge sharing among co-workers).
- Involvement facilitation refers to mechanisms that strengthen employee engagement in new technology (e.g. incentive systems connected to usage and participation in process changes).

Strain refers to the psychological and behavioural responses to technostress that is experienced by the employees of the organization when using digital devices in question. These reactions might vary from exhaustion, employee dissatisfaction with the digital devices or high levels of discomfort (Salanova et al., 2013). The outcome component refers to the potential outcomes of the strain that the employees experience. These can be absenteeism, turnover or an employee's intention to extend the use of digital devices and willingness to use potential new digital devices in the future. Research by Fuglseth and Sørebø(2014) support that the employees perceptions of the existence of technostress creators in their organizational environment are negatively associated with their level of satisfaction with digital device use. Furthermore, employee satisfaction with the use of digital devices, in connection with their job tasks is positively associated with their intentions to extend their use of available and new digital devices(Fuglseth and Sørebø, 2014). Employees that are satisfied with their digital devices are more positively aligned to extend the use of a digital devices and potential new ones. Fuglseth and Sørebø(2014) also found that variables such as age, ICT-courses and daily digital devices-use is a significant antecedent of how employees perceive the presence of technostress inhibitors and creators. Furthermore, they found no significant relationship between the perception of the existence of technostress inhibitors in their organizational environment and positive association with extending the use of digital devices(Fuglseth and Sørebø, 2014). There were also no relationship found between perception of the existence of technostress inhibitors and moderation of the relationship between technostress creators and satisfaction with the use of digital devices. This suggests that technostress inhibitors do not raise the positive attitude towards extension of digital device usage directly. The presence of technostress inhibitors is therefore of less value to the employees if the inhibitors do not help reduce the stress they experience. Therefore, technostress inhibitors do not function as a factor that can simply remove the dissatisfaction created by technostress creators.

2.3.3 Emotions and attitude formation

Up until this point we have focused primarily on how evaluative beliefs contribute to attitude formation, yet attitude theory recognizes that emotions might also act as drivers of attitude formation. One of the most identified primitive means of attitude formation is to pair the attitude object with a stimulus associated with a highly activated and pleasant emotion. This classical conditioning mechanising is valid and distinct from the cognitive mechanism mediated by evaluative belief (Cacioppo et al., 1992). Conceptualization of work-based affect reveal that emotional reactions can be described by two orthogonal dimensions: degree of pleasantness and activation. Pleasantness or affectivity is a bipolar dimension, where positive and negative are its poles. The positive pole has emotions associated with it that conjure good feelings while the negative pole is a state characterized by negative feelings towards the attitude object. The other orthogonal dimension activation is described by the intensity of the affective reaction. What conjures these emotional reactions are however still poorly understood, yet it is understood that emotional reactions towards an attitude object is affected by whether the event favours or obstructs the possibility of the individual to achieve important goals. Therefore, it seems reasonable to look at emotional reactions to understand the attitude towards an attitude object as the important goals of the individual stem from other factors such as values and job characteristics.

The consequential relationship between emotions and attitude towards the attitude object are more straightforward. Positive emotions contribute to positive attitudes, while conversely negative emotions contribute to a negative attitude towards the attitude object. Low emotional activation, either positive or negative, is likely linked to low attitude strength or no attitude towards the attitude object at all. Emotion towards the attitude object influences behaviour as it controls which information the individual will attend to. Furthermore, emotions strongly influence the motivation for the individual to search for information in support of one's emotional reactions(Lines, 2005). Therefore, the emotional reaction of the individual, be it positive or negative, has consequences on the attitude towards the attitude object as it will affect the information the individual will be looking for.

2.3.4 Environments effect on attitude

Attitude theory acknowledges that individuals are influenced by the people and groups in their environments (Fishbein and Ajzen, 1977; Ajzen, 2001; Wood, 2000). Organizations are social systems and force interaction between individuals. Therefore, when introduced to an attitude object the individual must consider this attitude object not only on its own, but also in the context of the group or external environment. The external environments perceptions, norms and evaluations are likely to influence the individuals attitude formation (Salancik and Pfeffer, 1978). Organizational changes are characterized by high levels of complexity and ambiguity, with regard to their causes, content, and consequences (Isabella, 1990). The nature of organizational changes will therefore create a reality where no single interpretation of the attitude object will be able to impose itself as objectively more valid than other interpretations. The individual's ambiguity towards the attitude object opens their attitude towards the attitude object to be influenced by their social environment (Rice and Aydin, 1991). The social environment might also influence the salience of a particular attitude object characteristic making a certain part of the change more important than other characteristics. Depending on the social environment some characteristics that are important to the focal person will have the strongest influences towards the change since most change-related discourse is centring around one or few aspects of the change.

Within an organization, behaviour is often the due to structural mechanism such as standard operating procedures and formal job requirements rather then a planned action in the theoretical attitude sense. Therefore, an attitude-behaviour inconsistency might occur when the organization process apply mechanisms that force a certain type of behaviour. This attitude-behaviour inconsistency creates a tension and discomfort which motivates the individual to correct the balance between the two (Tyler, 1999). In such a situation the behaviour component is locked due to the structural mechanisms that the organization has put in place. Therefore, the individual is left with the option of changing one's attitude to restore the balance and remove the inconsistency between attitude and behaviour.

2.3.5 Attitude ambivalence

So far, we have viewed an individual's attitude as something unique, a useful viewpoint to understand how attitude formation might occur. Yet, this is not necessarily an accurate representation of an individual's attitude due to that an individual can possess more than one attitude, towards the same attitude object. The phenomenon of having more than one attitude towards an attitude object is known as attitude ambivalence. Attitude ambivalence is the state when an individual possesses two or more attitudes towards an attitude object with different valences and strengths (Lines, 2005). In such a situation the individual will have several attitudes with differing attitude structures which leads to the individual not having a precise sentiment towards the attitude object. The individual can experience that the attitude object can be viewed as positive from a personal perspective, while negative from a organizational perspective creating a complex interpretation of reality. Attitude ambivalence is an important dimension due to its consequences on behaviour and information processing (Ajzen, 2001). Ambivalent attitudes are less resistant to persuasive communication than non-ambivalent attitudes (Armitage and Conner, 2000). Furthermore, attitude ambivalence is seen to increase the amount of systematic processing of information about the attitude object (Maio et al., 1996). This infers that individuals with ambivalent attitudes are therefore more susceptible to both being convinced and information presented to them.

2.3.6 Attitude perseverance

Attitude perseverance refers to the continued effort of maintaining a given prior attitude. A high degree of attitude perseverance will therefore mean that an individual attitude towards an object will be difficult to alter. This concept is important as when an attitude towards a change is formed, the attitude may be extremely difficult to alter (Lines, 2005). In the context of change, attitude perseverance might be an essential point if the attitude of the individuals presents a threat to the proposed organizational change. Attitude perseverance occurs mainly due to three main reasons. Firstly, individuals tend to produce selective exposure to information. This is manifested in active search for attitude-consistent information and active avoidance of information that contradict their strongly held attitudes (Festinger, 1957). Secondly, individuals tend to have biased memory for encoded information. Studies done about whether prior attitudes affect retention of new information have presented a general finding that people remember attitude-consistent information better (Hymes, 1986). Thirdly, attitude perseverance is affected by the relationship between attitudes and the processing of counter attitudinal information. Individuals exposed to information inconsistent with held attitudes tend to produce counterarguments that result in strengthening of the original attitudes. Sometimes this leads to an attitude that is even more extreme than the original held attitude. Therefore, to change the employees' attitude towards a change, managers must address these issues that reinforce the attitude perseverance in their employees. Addressing and trying to change the employee's attitudes to coincide with the organizational change is not enough, however. To maximise the chances of an organizational change being a success the manager must take planned action before attitude formation has begun. In the next section we are going to cover change management and some of the approaches that managers can take to increase their chance of success when implementing organizational change.

2.4 Organizational change management

Change management is a topic which generates much interest from both academics, business management and consultancy firms. This varying source of interest has led to the phenomenon having different definitions. In their IT-report Rambøll Management Consulting (2017) defines change management as *"a management processes to implement business changes that are necessary to enable the organization and its employees to achieve planned and unplanned gains"* (Rambøll Management Consulting, 2017). Change management can also be defined as a *"structured approach to transitioning individuals, teams and organizations from a current state to a desired future state"* (Sacheva, 2009, p. 109). Nograšek (2011) divides change management into a hard side and a soft side. The hard side describes the process, systems, strategies, tactics, and technology that enables implementation of change. The soft side refers to behavioural and attitudinal changes which enables hard change to be successful. The differing definitions have varying focuses on the different elements regarding organizational change. Yet, what they all have in common is that they describe some actions that must be taken to bring the organization from their initial state to a new state.

2.4.1 Established models for organizational change

A well-known model for change management is the three-step model which is created based on Kurt Lewin's(1951) work. The three steps the model consist of are unfreeze, change, refreeze (Lewin, 1951). According to Lewin's model, an organization undergoing change will traverse through these three phases. The initial phase, unfreeze, consists of making the organization ready for the change. This will consist of for example communicating to the employees what needs to change and providing the necessary training to handle the coming change. The unfreeze phase represent a breaking of the status quo within the organization. Lewin (1951) highlights that the change managers must dedicate effort to examine the current situation and reduce the forces that might resist the coming change. The second phase, change, is when the change is implemented, it is in this phase that the change will merge into the organization and a new status quo will be established. The second phase might be marked by unexpected events and changes along the way that leads to the change not continuing as planned. Lewin (1951) highlights the importance of factors such as such as good communication and good leadership, as well as a high degree of employee involvement to be able to handle these unexpected events. The last phase, refreeze, is characterized by the change being accepted and implemented by the employees. The organization will then enter a stable phase with the change implemented as a part of the daily routines, the organizational will have entered a new status quo that includes the change. Kotter (1995) further developed Lewin's three-step model into a more detailed eight-step model. He based his model on the same basic idea about the change processes but described in more detail how the changes should take place. This work resulted in Kotter's (1995) eight-step model. The first step in the model points out the importance of creating an understanding that there is a need for change in the organization (sense of urgency). In step 2, a coalition is established consisting of people with the authority to implement the change. Then the organization must create a vision and strategy for the objectives of the change process, which must be communicated throughout the organization (steps 3 and 4). Furthermore, action must be taken to implement the changes (step 5). Highlighting short-term, positive results to maintain the motivation for change is considered important (step 6)(Kotter, 1995). Further in the process, it is important to secure gains and create further change (step 7). The last step in Kotter's (1995) model consists of implementing and anchoring the changes in the organization. The model's eight steps are illustrated in Figure 4 below. According to Kotter (1995), leaders who follow the eight steps in the correct order are more likely to be able to achieve successful changes in the organisation and are thus considered critical success factors in a change process.

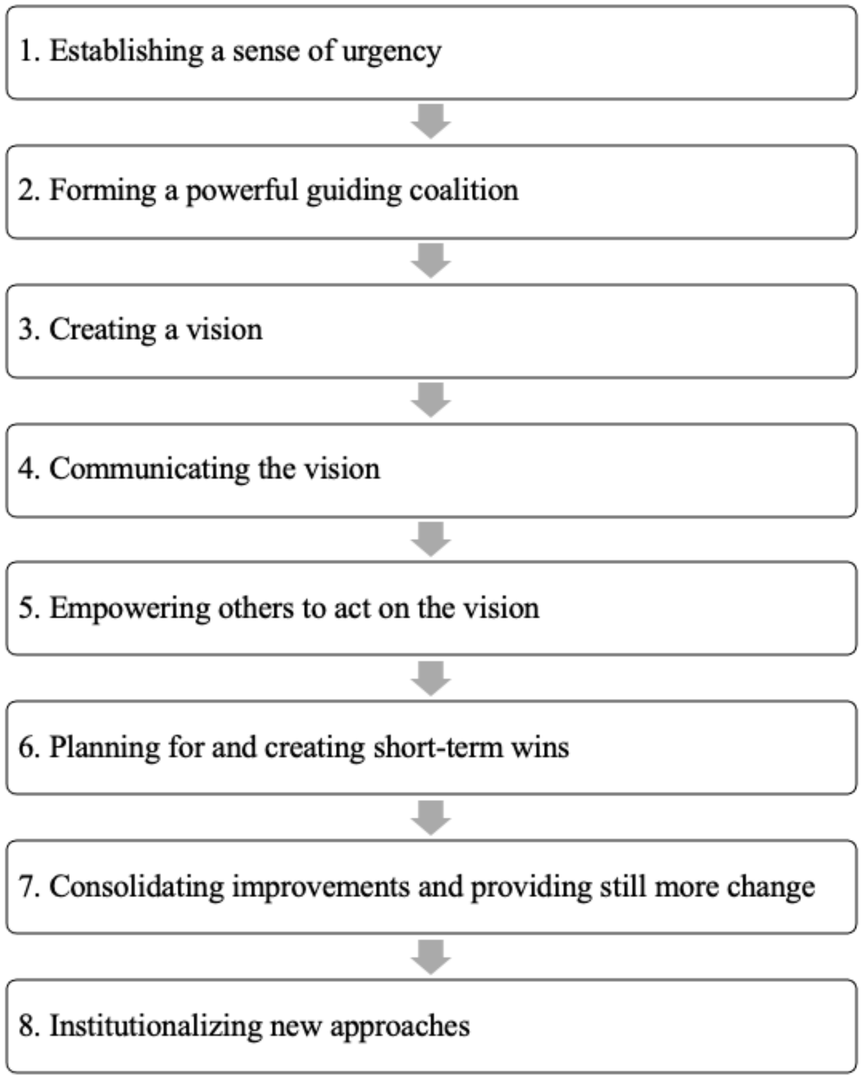

Figure 2.3: Kotter's eight-step model (1995)

Both Lewin and Kotter's model have been subject of criticism. Lewin's model has been criticized for being to linear (Palmer and Dunford, 1996), while Kotter's eight-step model has been criticized for having a top-down view(Drew and Wallis, 2014). Mintzberg (1998) argues that a change process can benefit from a bottom-up perspective in certain contexts. Despite the well-documented existence of unintended and counteracting outcomes in change situations, top-down change has remained the norm in many organizations (Balogun, 2006). Both models do however provide value to understanding what the role of managers are when implementing organizational change.

2.4.2 Digitalization in change management

Westermann et al (2014) find that companies that succeed with digitalization succeed because of their skills when it comes to managing and implementing the digital change. Among the leadership skills Westermann et al (2014) highlights is the ability to create a digital vision, focus on digital leadership and build technological leadership. The latter two are mainly about steering the company in a more technological direction and activating and uniting IT managers with the way the company is run. Similarly to Lewin and Kotter, Westermann suggest a phase approach during a digitalization effort. Westermann's approach has four phases. The first phase is about embracing the digital challenge. It is important here to map the starting point, and to put together a team that will implement the change. Phase two is about focusing on the change. This means turning the vision into action and securing resources to implement the change. In phase three, which deals with mobilizing the organization, it is important to develop the culture and express the ambitions associated with the change. The last phase is about maintaining the change. This involves continuous measurement and focus on the skills needed to make the change permanent (Westerman et al., 2014). There are many similarities between Lewin, Kotter and Westermann's approaches to phase implementation when dealing with change. For example, both Kotter and Westermann highlight that communicating vision and showcasing where the change is supposed to be headed. Fernandez and Rainey (2006) highlight that goals and visions also function as internal drivers, managers must therefore connect that the solutions that are presented contribute to achieving these goals. Kotter (1995) further stresses that the vision must be clear, managers must focus on specificity and cohesion so that the directives do not become unrelated and fragmented. Therefore, it is important for managers to know what constitutes a success when they implement their organizational change. What these criteria are however is something that the organization and the involved managers must agree upon. The aforementioned authors all highlight the importance of preparing the organization for the impending change. One such preparation, especially when introducing new tools is providing the necessary training to use the new tools. Giangreco and Peccei (2005) and Oreg (2006) have reported that individuals' reactions to change are affected by their perceptions and reactions to change. Therefore, providing the individuals affected by the change with the necessary capabilities to use the new proposed tools are important. Concern regarding having the necessary capabilities was especially highlighted when in the context of technological change by Chreim (2006). Furthermore, in the context of digitalization, digital devices tend to evolve over time and become more complicated. Therefore, it is important that the organization provides continuous training to keep the capabilities of the employees up to date. The arguments regarding using digital devices raised here are strongly connected to technostress and its effect on attitude towards change which was discussed earlier in this chapter. Furthermore, studies show that a lack of knowledge and limited understanding of benefits provided by systems and new technology is a barrier to implementation (Police et al., 2010; Shekelle et al., 2006). Ross et al (2016) found that a number of studies show that

> *high- quality, well-funded, and easily available training was reported as a facilitator to implementation, whereas it was reported as a barrier when it was non-existent or existent but inadequate.* (Ross et al., 2016, p.8)

Training is not only important to facilitate implementation, but also a strategy to overcome skill-related barriers (Gagnon et al., 2012). However, this need to provide training is not reserved for the employees only. All managers have a responsibility and a role in major change projects, and which involves management at a strategic and operational level. Middle managers are especially important as links, translators, opinion formers and chaos buffers (Stensaker and Haueng, 2016). Ensuring that managers have the capacity and competence to drive and lead the changes in the right direction over a longer period is crucial for success (Fernandez and Rainey, 2006). Therefore, providing the relevant training for middle managers when necessary is crucial for achieving successful organizational change. Furthermore, securing employee participation and good leadership seem to be a point that all authors agree is important.

2.4.3 Leaders role in change management

Having strategic and skilful individuals in a position to lead change in a coordinating capacity has been shown to be a contributing factor in change management (Bardach, 1977; O'Toole Jr, 1989). Research done by Bakari et al (2017) connected authentic leadership style with organizational change. Authentic leaders are leaders which have a pattern of behaviour that draws upon and promotes positive psychological capabilities and positive ethical climate in their employees. Furthermore, they foster greater self-awareness, an internalized moral perspective, positive self-development, and balanced processing of information in their followers. Their beliefs are consistent, and their actions are transparent and accountable (Walumbwa et al., 2008). Bakari et al. (2017) findings suggest that authentic leadership positively affects organizational change efforts by creating readiness for change and enhancing commitment to the change. This is further supported by Joo et al (2013) which inferred from their study that authentic leaders enhanced the organization ability to embrace change and produce creativity in uncertain times due to their transparent and supportive behaviour.

Lastly, Lewin, Kotter and Westermann highlight the importance of facilitating the change as a part of the organization at the end phase of the change process. Westermann provides more attention to the nature of continuous change by highlighting the fact that the change must be maintained. Both Lewin and Kotter approach this subject as a more definite state, where the change morphs into the existing status quo. We believe the distinction here between the focuses are a matter of the context of the change. It is reasonable to focus on maintaining a change when the introduced change might be easily discarded and therefore return to the old status quo. Some changes, however, make it impossible to change to the old status quo without much effort. We believe therefore it is important for managers to be able to make this distinction when managing their organizational change and adjust their actions based on this. Managers have an important responsibility when dealing with organizational change, there are often held responsible for either the success or failures (Burnes and Jackson, 2011; Bakari et al., 2017). In the aforementioned sections we have presented some of the theory developed for managers actions when implementing change, yet as mentioned earlier in this chapter, many change initiatives fail. A contributing factor for this statistic is resistance to change. In the following and last section of this chapter we are going to look into the phenomenon of resistance to change and what factors may contribute to this.

2.4.4 Resistance to change

In the following section we are going to look at some factors that might be a potential threat for managers when implementing a change. Firstly, it is important to acknowledge that there exists an individual relationship to change. There exist differences in willingness to change, some like change as it offers new opportunities, while others prefer routines, and are therefore more resilient towards change proposals. Individuals that have a predisposition to resist changes have according to Oreg (2003) an inclination to seek routines, have negative views on announcements of change, focus on a short-term perspective and have a dogmatic point-of-view. Furthermore, Judge et al (1999) connected predisposition to resistance towards change to the individuals with risk tolerance and self-concept. Risk tolerance is characterized by openness to experiences, low risk aversion and a high tolerance for ambiguity. Self-concept is comprised of positive affectivity, self-esteem, self-efficacy, and the degree to which people believe they are in control of their own lives, their internal locus of control. They found out that individuals with these characteristics tackle change better, and conversely those who lack them have a predisposition to resist changes.

Besides individual predispositions there are, however, several factors that affect the employee's willingness to change that go beyond personal preferences. As previously highlighted by Lewin(1951), proper management of change resistance is a key factor for achieving successful change. Del Val and Fuentes (2003) explained resistance to change as any phenomenon that hinders the process at its beginning or its development, aiming to keep the current situation. These hinders can be expressed in different ways. Giangreco and Peccei (2005) observed that that these inhibitors to change were often expressed in passive ways rather then active ways. For example, this could refer to behaviour that creates a negative attitude towards the change or behaving in ways that can contribute to impede the effectiveness of the rate of change. Therefore, resistance to change does not exclusively refer to active resistance, but a broader set of behaviours that can impede the proposed organizational change.

Meyer and Stensaker (2005) state that during long and relatively stable periods in an organization with limited change experience, employees may struggle to understand the need for change. Limited change experience occurs in companies that have little to no experience with general changes, or little experience with major changes (Meyer and Stensaker, 2005). Employees in organization with limited change experience may therefore end up spending a lot of energy resisting the changes and mobilizing resistance. Furthermore, employees with limited change experiences tend to focus more on the uncertainties produced by a change process (Meyer Stensaker, 2005). This in turn will contribute to loss in productivity and remove focus from the implementation of the change process. Meyer and Stensaker (2005) also point out that middle managers in companies with low change experience can show insecurity in change situations if they feel a lack of involvement in the process, which can lead to distrust of the top managers intentions. Lack of communication between change managers and employees regarding the change can lead to stress and anxiety towards the change. These feeling are conjured as uncertainty or fear of the unknown take place when change arrives suddenly due to lack of information (Jacobsen, 1998). Jacobsen (1998) further claims that, although there are individual differences of how stress and anxiety is handled, active resistance seems to be a common response to lack of information. Further research from Wanberg and Banas (2000) argue that rich communication between managers and employees contribute positively to a successful organizational change. This argument is contested by research from Oreg (2006), he found a positive correlation between information provided and resistance to change. Therefore, it seems that just providing information about a change does not seem to guarantee a positive effect organizational change effort. From Jacobsen's (1998) arguments it seems to be important that information about the change is provided, yet this does not however seem to be enough to quell resistance to change if the employees disagree with the proposed change. Jacobsen and Thorsvik (2013) argue that resistance to change can sometimes be a positive factor in change processes. It can lead to constructive debate and feedback, especially if the imposed change is poorly planned or has clear weaknesses. It can in this sense help management improve the process and the solution and make the process more inclusive from bottom up. We can see that lack of communication can create negative reactions among the employees, yet the consequences derived from these reactions are uncertain. Depending on how the active resistance is handled and managed, it can be a force to either hinder or support the change process.

3 Methodology

In this section of the thesis, we will describe the various methodological choices we have made to best be able to answer our research question. This study will be applying theory on organizational change and attitude, in order to better understand the phenomenon of digitalization. We conduct a multiple case study and use document analysis and in-depth semi-structured interviews, to collect the data needed to perform an analysis. These methods provides the basis for discussions and conclusions that can give new insight in this field. We will in this chapter describe the various decisions we have made and present the justifications on which these decisions are based. Furthermore, the chosen case will also be presented in further detail.

3.1 Research design

The research design refers to the overall plan for how the research question is answered through a description of data collection and analysis (Saunders et al., 2009). The main distinguishment in research design is often between, qualitative- and quantitative studies. Our research question requires that we acquire in-depth knowledge of the digitalization process and what factors influences such a process. The study will also try to infer why or if the results of technology implementation between units within the same organization might vary. We have therefore chosen to conduct a qualitative study due to its ability to explore meaning and in-depth understanding in mechanisms and processes such as in processes of change and digitalization (Saunders et al., 2009). The study has an exploratory research design. In exploratory studies researchers aim to gain new insight and asses a phenomenon (Saunders et al., 2009). In this study we use this research design to gain insight on how a digitalization effort in the context of the health care sector unfold. We believe that this design is beneficial to this study and its ability to answer the research question, primarily due to its flexibility. Flexibility in the sense that research design gives opportunity to form the argumentation we see appropriate and are free to choose from a varying set of sources for information. To understand how the result of a digitalization process varies in our context, this research has a case study approach. Case studies are the preferred method for research when the research question demands comprehensive and deep understanding of a phenomenon (Yin, 2014). Following our research question, we need to make a comparison between two organizational units and have therefore chosen a comparative multi-case study. The comparative case study aims to provide an in-depth understanding of both cases and give the comprehensive understanding needed to distinguish the cases. The study has furthermore a goal of providing a better understanding of why digitalization efforts vary so that practitioners can use the developed insight to reduce the risk of an unsuccessful organizational change. We are conducting a comparative multi-case study where we look at two departments/units in the home based care service, where it is believed that one unit has experienced success and the other has not. It is essential that the departments we compare have several similarities, so that we can find out with greater certainty why the result of a digitalization process varies. This is to minimize other variables that may contribute to or alter the change process. With more similarities we stand a better chance of isolating the effect of the digitalization.

3.2 Case description

The two units in this study are within the same region, has approximately the same number of patients, employees and share similar organizational structure. We approached managers and middle managers within the organizational boundaries of the municipal health sector and more specifically the "Smart Omsorg"-program in Bergen municipality, and from there we were referred to formal channels where inquiries for data collection were handled. This contact made it possible for us to find two units where the management expressed a belief that there were discrepancies between how well the implementation of new technology had gone. To understand the context and nature of these discrepancies we needed to collect information and data from both units enabling us to make comparisons and an analysis. This was done by conducting a document analysis of the pilot report developed specifically for the digitalization project in our case study. Other publicly available reports and documents on change and digitalization in the public health sector were examinated to provide a better understanding of the case.

We will now present the implemented system in detail by introducing Mobile Omsorg and its effect on our case.

3.2.1 Mobil Omsorg

Visma Omsorg Profil (Profil) is the name of electronic health record that is used by a large section of the municipal health service in Norway. The municipal health service in Norway has used a form of electronic health record for many years. It is an embedded and well-known part of the daily routine to use such software. Every employee is provided with a user that is distinctly theirs, making it easy to see who has written which report. Within Profil there exists a large amount of sensitive data about the patients, varying from their weight, diagnoses, and their prescription list. Due to privacy requirements the patient information is given only to the employees that are in direct contact with the patient. Therefore, not every healthcare worker has access to all the patient's information in their given department if they are not meant to have direct contact with that patient.

Profil has previously only been accessible through a computer, until Mobil Omsorg was introduced. Mobil Omsorg (MO) is the mobile application version of Profil. The application is accessible through a smart phone or tablet and requires internet connection as it is a cloud-based system. MO does not function as a complete substitute to Profil as it does not have all the functions of Profil. It is considered mobile due to it being available on smart-phones and tablets which enables health-care workers to have access to patient information out in the field. MO has furthermore some registration functionalities enabling the health-care workers to write reports more flexible throughout the day. MO provides health-care workers with a digital list of patients that they need to provide services for. This list provides information regarding which tasks that need to be done at which patients, their address and approximately how much time the task should take.

3.2.2 Smart Omsorg

The MO-project is part of the Smart Omsorg program which was approved by the City Council in 2015. Smart Omsorg is a municipal business development program whose task is to implement important initiatives that make health and care services more efficient and utilize new technological solutions. The MO-project is one of 34 completed projects in this period and is in the figure categorized under the sub-program «Bo lenger hjemme».

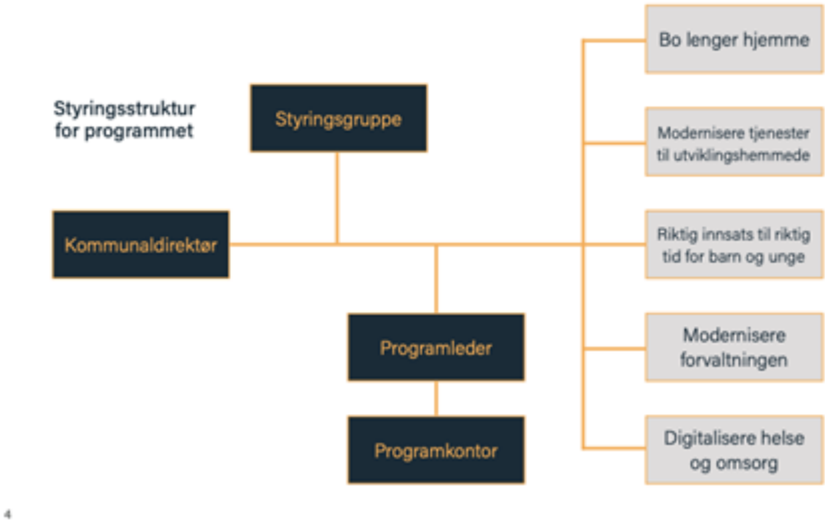

Figure 3.1: Overview of Smart Omsorg

The municipal director for BHO (Head of the Department of Elderly, Health and Voluntary Sector) has the primary responsibility the program of Smart Omsorg. The steering group is led by the municipal director and consists of the city council department's management group with section leaders, agency directors and employee representatives. The group ensures good anchoring in the organization and the employee organizations. The program manager reports directly to the municipal director. The program is divided into five sub-programs that are led by sub-program coordinators. The coordinators are made up of the employees in the program office. In each sub-program, there are several projects led by project managers. The competence in the program office is interdisciplinary with health sciences, work and organizational psychology, ICT business architecture, general ICT and service design. The project management state that learning and change must take place in the line if one is to be able to realize the gains that are expected in the program. This requires competent and dedicated line managers who know change management and the ability to take projects on the line in a systematic and targeted way.

The Agency for Residential and Home Care Services is grouped into geographical zones which in turn is divided into smaller groups. In our case study we will be looking at two of these groups. The MO-project was initiated in 2014 and gradually implemented throughout home based care services. During the project period Feb. 2014 – Des. 2016, MO was introduced to all employees and all groups in the home care service.

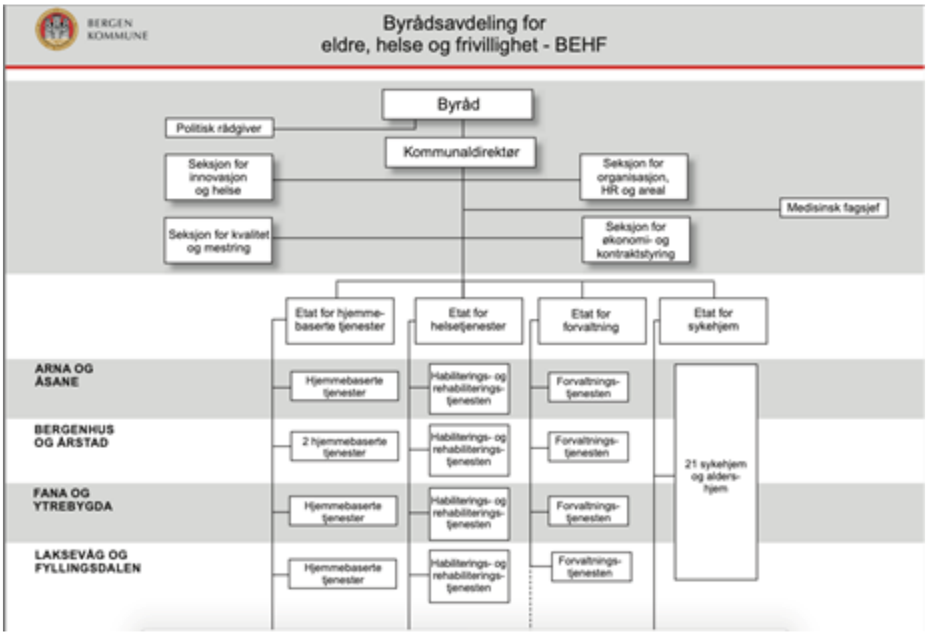

Figure 3.2: Overview of Bergen Kommune

The project aims to ensure that the mobile platform works optimally so that employees experience MO as an effective and functional tool. The goal of the project is to have access to correct information about the individual user in the situation the employees are in, to be able to document and quality assure information together with the user, as well as save time and costs by reducing the time spent on administration.

3.3 Data collection

There are several different methods for acquiring data and performing analyses when using qualitative research. In case studies it is an advantage to make use of different types of data sources, which is called triangulation. Triangulation describes the process of collection data from independent data sources or data collection methods within the same study(Saunders et al., 2009). We distinguish between primary data, which is collected specifically for our study, and secondary data which is derived for other purposes (Saunders et al., 2009). Our primary data is collected through the conduction of 14 semi-structured in-depth interviews. Through these interviews we collected data from the employees who work in the research project's participating units. Semi-structured interviews are appropriate for explorative studies as they give the foundation to be able to understand a social phenomenon and the context it occurs in. As our research is dependent on us recovering responses regarding the retrospective feelings and experiences of our interview subjects, we need to be able to probe answers and have the opportunity to ask our subjects to build upon an answer. Semi-structured interviews enables us to do these actions. The study depends on acquiring knowledge about the research question, and the research that has previously been done in this area. We had access to secondary data in the form of a detailed report of the pilot project that the digitalization process was based upon. Our contacts from the Smart Omsorg program management provided further information regarding the organization as a whole which was further supplemented by publicly available sources.

3.3.1 Document analysis

A document analysis is a method used where existing information is interpreted with the intention of establishing new insight into a topic. Document analysis as a method is particularly applicable to qualitative case studies where the intention is to produce a rich description and provide insight into a phenomenon, which coincides with the research question (Bowen et al., 2009). We have used this method to acquire knowledge about this case and to find out how digitalization has occurred in the Norwegian health care system and how plans for the digital transformation of the Norwegian health care system has developed.

One of the main documents we analyzed was the report "Mobil Omsorg – bedre bruk av ressursene? -Erfaringer med fagsystemet Profil på bærbare enheter"(SINTEF, 2014). It includes technical information of the system, a pilot study, risk assessments and the municipalities aims and goals for the project. We were especially interested in the aims and goals that Bergen municipality had for this technology. To have access to information that can say something about how the organization had envisaged the technology implementation and consequent use, is very useful for this study. It made sure we could map out and better describe how the project had been planned and its intentions. With this information we were able to describe the municipalities ideal state for the project, which also provided a benchmark we could measure and compare our other findings against. It was critical to have this data when interviewing both managers and employees, because we had a reference point to compare to, further enabling us to develop insightful questions.

To further carry out the document analysis, we gathered information and data through reports from the government and firms involved in the digitalization of the Norwegian health care system. We explored and gained an overview of previous research that had been done on this topic. We read reports and articles that have shed light on problems that the health industry encounters on a global level, and problems that are unique to the Norwegian health care system. The information collected from the document analysis is categorized as secondary data, as it is not collected specifically for this particular study (Saunders et al., 2009). It has been important for the study to have resources and data that can support and triangulate the data collected through the interviews.

3.3.2 Semi-structured interviews

In order to answer the research question in the best possible way, we have decided to conduct in-depth semi structured interviews. We consider this to be appropriate as the research project aims to create deeper insight into how, why, or if, the results of a digitalization process vary within the same organisation. Semi-structured interviews are well suited in cases where the purpose is to obtain information about how informants perceive, assess and interpret various events and actions (Christoffersen et al., 2011). This means that the informant has the opportunity to talk more freely about their own experiences and how they perceive different situations. We believe that in-depth interviews will provide the opportunity to build understanding and gain insight into how the digitalization process in the various units has taken place. It will also allow us to discuss different nuances and complex issues of a change process. This presupposes that we have good communication and a good relationship with the informants. We tried to make sure that the interviewees felt comfortable in the interview setting. We explained how the data was going to be used and how their privacy was prioritized and maintained, prior to the interview. We conducted semi-structured interviews, where we mainly had recurring questions. Furthermore, we asked relevant follow-up questions to each interviewee where we found it necessary. We developed an interview guide with general questions aiming to uncover and provide insight into how the digitalization process had taken place. We prepared one interview guide for the employees (carers and nurses) and one interview guide for the managers. We wanted to distinguish between these, due to the different information they could provide on the topic. We also made the interview guides in a way that makes it possible to compare the same concepts from different perspectives, firstly from the leader's perspective and the employee's perspective and secondly between units. The interview guide is logically created where the first questions deliberates on circumstances prior to the change which later moves forward to ask about during the implementation process and later the aftermath of the implementation. This is done so that the interview object follows a narrative, helping them tell a story and promotes them to talk freely. It is important to allow for such flexibility so that the study is being done according to explorative principles to be able to explore divergent findings (Saunders et al., 2009). The interview guide made it easier to create equal conditions for obtaining intended data from the various respondents, as well as strengthening the study's verifiability.

During the actual interview process, we decided that one interviewer had the primary responsibility for asking questions and keeping the conversation with the interviewee going. The other researcher was responsible for making notes and asking additional questions. Some changes to the employee interview guides were made during the interview period of two weeks. This was done due to the fact that there were some unexpected, interesting observations that surfaced during the first interviews. Prior to the interviews, we asked for permission to record audio and video of the interviews, as well as inform the interviewee that the restrictions related to privacy agreements would be complied with. We made it clear to the informants that the information they share remains between us and the supervisor and is only reproduced anonymously in the study. The recordings are used to reproduce the information presented by the interviewees correctly. This also made it easier to place different statements in the right context and avoid misinterpretation (Saunders et al., 2009).

3.3.3 Sample selsction

The sample of interview objects consist of fourteen informants within the two selected units. One manager from both units were interviewed, in addition to six employees from unit A and six from unit B. The interviewees are at different levels in the organizational hierarchy, but all of the employees who took part in the interview applies the technology daily and was part of the implementation of new routines entailed by the digitalization process. This somewhat limited our possible sample pool because there were only a few candidates who was part of the implementation process and still worked in the same unit. The interview objects were selected by the unit manager, to whom we explained the criteria for selection. The candidates where then selected for the purpose of this study. There are mainly female informants in our sample, due to over-representation of this gender in the organization. We do not see this as a large problem because it is representative of the work force in the case organization. The goal with this selection is not to achieve statistical representation for the population (here all employees in the case units) but to choose the respondents who are best suited to answer the research question. This approach forces us to consider typical biases related to sampling. Few and filtered informants might not portray a reliable or typical view of the situation. We have tried to limit this bias by asking questions to the informants about how they felt others had experienced the change and how they perceived other employees' attitudes. We also tried to make questions that we could compare with the leader's responses, employees' responses and the pilot report. For this study it was more important to access informants that could provide information about the time horizon of interest rather than having statistical representation or random sampling

3.3.4 Time horizon

Our study aims to be able to say something about the change process prior, during and after implementation of new technology. The study gives insight into attitudes, experiences and feelings of employees and managers during the first time period with new technology. In our case the change we study happened five years ago, and the interview objects was asked retrospective questions, we therefor need to take into consideration that the data is dependent of what the respondents can recall.

3.4 Data analysis

The thematic analysis will be performed with a deductive approach. We use existing theory to formulate our research question, and thus provide a basis for using the theory as a framework for organizing and conducting data analysis (Saunders et al., 2009). The first step in the data analysis is to get to know the data collected for the analysis and create an overall impression. We first listened through all the interviews and made notes of recurring data of interest and the quality of the interview. All interviews were then transcribed in full. The transcriptions, which is a reproduction of the interview in writing, was conducted by dividing the interviews between us. We then conferred with each other and compared the transcribed interviews. In addition to the transcripts we also had video recordings of the interviews, which helped us to document how the respondents replied, body language and other non-verbal communication. This was beneficial in terms of strengthening the knowledge of the data and ensuring that the message of the informants is reproduced correctly.

By the measures mentioned above we believe that we will have the necessary overview of the data to enable us to conduct a thematic analysis. A deductive approach is based on and driven by existing theory, and we therefor need to consider what kind of information and data will drive a theory-based analysis. We will use theory to make thematic subsections and use the data to try to explain the phenomenon of change in a digitalization setting, thus making subsections related to both the research question and the relevant theory. The collected data will be subject to analysis that intends to find similarities and dissimilarities within these thematic subsections. The search for connection and cohesion in the data is a composite of many things. Already in the stage of developing the interview guide we tried to design the data collection process in a way that ensures the collection of relevant data. During the interviews we tried to ask follow-up questions in order to collect the most data on the different phenomenon we believed was important. The result of the analysis is therefore a combination of different measures taken throughout the data collection and preparatory work.

3.5 Research quality

Through this research design we aim to collect valid and reliable data that can be used to gain insight and information that can be used to answer our research question and further enlighten the objective of this thesis.

3.5.1 Reliability

Reliability is referred to by Joppe (2000) as the extent to which results are consistent over time and an accurate representation of the total population under study. Reliability deals with the verifiability of the study. That is, whether the results from the study can be replicated using the same method by other researchers at a later occasion. If the result of the research project is replicable in later studies, the reliability can be considered high (Saunders et al., 2009). In qualitative studies, this criterion can be difficult to meet, as the data collected often is contextual. As we use semi-structured interviews in the research project, it will probably be difficult to replicate the results to a certain degree, as the situation the respondents find themselves in at the relevant units will to a certain extent be unique. Attitudes to change and the general behaviour of respondents will also potentially change, which may make the answers different. This research project will not necessarily have a high degree of verifiability as a goal, but rather that the data collection and analysis are regarded as reliable. In order for this project to achieve reliability, a detailed description of the methodology and the interview process is provided.

A potential threat to the research project's reliability is the extent to which the interviewees are honest in their statement. Reliability might suffer if respondents misunderstand, misjudge, or overthink their answers or the questions during the interview. One possible scenario is that the interviewees respond in a way that promotes their own unit in a particularly good or bad way, they can also respond to what they think the researcher wants to hear. This is known as participant bias. To avoid this, the anonymity of the respondents will be emphasized in advance of the interview, the respondents will also be encouraged to be honest through clarifying the importance of a truthful replies for the quality of the research project. Other potential threats to reliability are observer error and observer bias. Observer error can occur when the researcher misinterprets the message the respondent brings. Observer bias can occur when the researcher lets his unconscious subjective views lead to misinterpretation of the message (Saunders et al., 2009). The risk of these threats is reduced by more than one interviewer participating in the entire process, as they have the opportunity to check and follow each other's interpretations. In addition, the interviews will be video- and sound recorded, this makes it easier to resolve cases of doubt where we disagree about the correct interpretation of the respondent's message, as context, tone of voice and gestures can be evaluated in the analysis. By using more interviewers, the research project's internal reliability will therefore be strengthened (Saunders et al., 2009).

3.5.2 Validity

The quality of a study is based not only on reliability, but also validity. Internal validity is achieved when the study shows a causal relationship between variables, while external validity is about the generalisability of the results (Saunders et al., 2009). Internal validity is not normally seen as a problem in qualitative studies as qualitative methods go deep into mechanisms and processes. The theoretical connections that are presented will be well-founded and applied to the collected data. What may, however, be a threat to the internal validity of our study is that changes are made in one of the departments that we are not aware of, which makes it difficult to compare the departments (Saunders et al., 2009). This may, for example, be one or more factors that change the department's prerequisite for the implementation of technology.

External validity is about the results being generalized to other circumstances. It may be necessary to carry out the research project in other settings and groups in order for the results to be representative of other organizations. It is usually difficult to generalize the results in qualitative studies. This is because there are few samples, which limits the generalisability (Saunders et al., 2009). On the other hand, we can discuss whether it is possible to draw lines to the health sector, where there are several common features between the organizations, as they are in the same industry. To ensure lexical meaning in our interview guide and quotes one researcher translated the interview guide and quotes that is to be used in the analysis from Norwegian to English, while another translated it back to Norwegian in order to ensure lexical meaning. We made adjustments where we found minor discrepancies. We will also include a copy of the Norwegian and translated English interview guide (see appendix A1). This will allow readers proficient in both Norwegian and English to check that equivalent questions in both languages have the same meaning.

3.5.3 Research ethics

We believe that the research question we are trying to answer is not a controversial topic or a complex ethical topic. The circumstances surrounding and context of the research project may, however, present some ethical issues. The health service offers several challenges related to privacy. Throughout the entire research project, situations may arise where the interviewers get unintentional access to sensitive patient information, especially during the interviews. We have taken measures to carefully formulate our questions to avoid the problem of disclosing sensitive information. Furthermore, sensitive information may arise about other employees in the department, for example, in the situation where an employee is critical of how the manager implemented the change. Such information can be problematic for the employee if the statements are not anonymised. We have been careful to not reproduce information that can be linked to the individual employee, and we have not had any issues with this throughout the research. To ensure that the anonymity of our interview objects is maintained we have stored the recordings with coded name tags. We also made sure that all the interviewees were informed about the data collection process and how the data would be used. This information was given to all interviewees prior to the interview and after the interview was conducted in the form of a consent form stating this information in writing (see appendix A2).

4 Findings

In the following chapter we are going to present our findings made from our document analysis and interviews. Firstly, we will present the main points from the pilot study, explaining the consequence on how MO effected the daily work activities of the employees. In this section we refer from talking about experiences expressed by the employees and focus solely on the objective changes made to the work routines and identified goals. With the effects of MO on work routines in mind we are going to present our findings from our semi-structured interviews. To make sure that our interview object stays anonymous, we are going to code their identities. The employees are going to be marked by an E while the managers are going to be marked by an M followed by the interview number and group (A or B). In the beginning, we will be presenting one topic at a time for each department before presenting a summary comparing the departments for the discussed topic. We will try to present the topics in a manner connected to differing phases in the implementation process to establish an easily to follow narrative. However, we recognize that some topics do not belong to a single phase and are best described when comparing the departments and will therefore be presented at the end.

4.1 Experiences from pilot study of MO

In the period 30 October 2014 to 31 January 2015, a pilot test of MO was carried out in Bergen municipality in collaboration with SINTEF (SINTEF, 2015). In the project, the MO solution was piloted in one group in a residential and home care services zone (out of a total of 10 zones). There was approximately 50 employees who participated in the pilot study. Experiences from use were obtained through two surveys, a time study, and focus group interviews. The project's report claims that the use of MO on a portable solution has the potential to streamline the use of resources in the service, as well as improve the quality of handling patient data. The main findings from the survey of the employees' experiences through surveys indicate that the solution contributed to achieving:

- Better resource utilization; the solution provides an opportunity for a changed organization of everyday work and work methodology by e.g. easy access to patient information, simplified reporting and documentation

- Reduced stress for employees; employees have "with" necessary information out to users and can complete tasks related to documentation and reporting during work day and do not have to wait for a available PC.
- Increased patient safety; employees have access to up-to-date information instantly. Better quality of handling patient information
- Increased quality of documentation in patient records

The project highlights a number of prerequisites that must be in place to realize the benefits of the system. A key point was the anchoring of leadership, with clear information and prioritization of tasks related to changed organization of working days, a changed working methodology and the need to increase the quality of handling patient data. Furthermore, the choice of portable solution are presented as an important factor. According to the report, the solution must have sufficient capacity, so that employees experience that the solution works quickly and efficiently.

4.2 Effect of MO on work routines in unit A and B

Prior to the implementation of MO, the employees of case A and B started the day with a morning meeting where the most important reports were read out loud. During the morning meeting the employees would be provided a physical list of patients that they need to be provided services for. These morning meetings were a very social process and was characterized by a high degree of information sharing regarding patient information and experiences from other employees. During the day the employees would then finalize the tasks that were listed in the physical lists and return to the office to write documentation regarding what they have observed and what actions they had done. Both department A and B tended to experience queues to access the computers as there were not enough computers available for every employee at the same time. If they were out in the field and had the need to acquire information that was recorded in Profil they had to either drive back to the office or call someone that were in the office and had access to the patient. With the introduction of MO, the morning meeting was removed and replaced by “silent report”. Silent report is the practice of everyone logging on to the electronic health record and reading the reports that were written about the patients that they have been assigned for the day. MO changed the social information sharing aspect of the morning meeting into a solitary report reading routine. Silent report does not set prohibition regarding information sharing if someone has questions regarding a task or a patient. The format therefore does not restrict employees of requiring information if they need it, it does however restrict other employees from acquiring this information. Furthermore, the physical lists were entirely removed and replaced by a digital list inside of MO. To access this list the employees, need to write inn their username and password. MO's mobile nature enables the employees to access the electronic health record while out in the field removing the need to either call back to the office or driving back themselves. Furthermore, MO enables employees to write reports on the go reducing the pressure on the computers in the office and reducing the queues.

4.3 Findings from semi-structured interviews

In the following sections we are going to present our findings of the factors that affected the attitude formation. Before the implementation, during and after the implementation. Afterwards we are going to present how change management unfolded in the departments and compare them, before discussing some topics of interest. We have presented the findings in an explanatory manner, followed by representational quotes taken from our interviews to highlight the tone and setting they were given in. For the sake of transparency, we have provided both the direct quotes in Norwegian, followed by an English translation of the same quote.

4.3.1 Attitude before implementation and during introduction

Department A

Even before the introduction of the change by the manager several of the interview objects from group A had heard about the technology and the MO-program. While some had heard it from other units in Bergen that already had the system implemented, others had heard that the technology was in use in other regions in Norway. It was the general impression from the employees of department A that using physical lists was an "old fashioned" way of working. Furthermore, most of the interview objects felt that the introduction was done well in advance of the implementation and felt that they had been provided adequate information regarding the proposed change.

> *"Vi hørte det fra andre i Oslo som hadde hatt det, og fra flere andre steder hadde vi hørt om at dette med arbeidslister det er gammeldags. Det var også nettsider, Facebook og medieoppslag som skrev om mobil omsorg og denne typen teknologi"* - M-A
>
> *"We had heard it from others in Oslo who had it, and from several other places we had heard that worklists are 'old-fashioned'. Websites, Facebook and media also wrote about MO and this type of technology"* M-A

> *"Det ble jo snakket om det et par ganger før vi fikk det. Det var jo flere soner som fikk det før oss så vi hadde en liten aning"* E-8-A
>
> *"It was talked about a couple of times before we got it. There were several zones that had got it before us, so we had an inkling"* E-8-A

The interview objects were asked how they felt about MO the first time it was presented to them. All the respondents expressed positive feelings towards the change and many of them highlighted that they believed that this would benefit them. During the interview with the manager of group A, she highlighted that the employees had been waiting for this change for a period of time and that they were motivated to implement it. The change had been received as a solution to an existing problem, and this had created optimism in the employees. It was further mentioned that there were some employees close to retirement age that were somewhat "sceptical" to the change, it was communicated that this scepticism was rooted in concerns regarding their technical capabilities. It was noted however that also their feelings and attitudes grew positive towards the change after a while, when provided with the adequate training. We did not observe that any of the interview objects felt any scepticism themselves, yet they did mention that some employees had expressed scepticism. This scepticism was however being expressed by a small minority of the employees and downplayed by the interview objects. It was the general impression from the interviews that the majority of group A had a positive view of the announced implementation of MO. For some, the positive attitude was enforced by a developed and felt need for changing existing routines and the understanding and communication of possible upsides and benefits of a change in routine and work characteristics. It was apparent from the interviews that the employees of department A had an relative unclear picture of the benefits that MO would provide.

"Det ble vel egentlig bra. At det skulle bli bedre at det skulle være mer effektivt. Ja at man kunne gjøre mer ting ut hos pasienter" E-7-A

"It turned out really well. That it should be better, that it should be more efficient. The ability to do more when out in the field with the patients" E-7-A

"Personlig tenkte jeg at det var greit og at det var bra. At jeg var positiv da, positiv til at vi skulle ta det i bruk" E-6-A

"Personally I thought it was okay and that it was good. I was positive to it, positive that we were going to use it" E-6-A

"Det hørtes veldig spennende ut og veldig positivt tatt imot" E-1-A

"It sounded very exciting and it was very positively received" E-1-A

"...de hadde ventet så lenge på dette her og hørt så mye bra om det så det var litt sånn 'endelig nå kommer det'" M-A

"... they had waited so long for this and heard so much good about it so it was a bit like 'finally it's coming'" M-A

"For min egen del så tenkte jeg det kom til å gå veldig bra, for vi er så vant med alt det tekniske, men med tanke på de som er litt eldre kanskje det var litt mer tungvint for de da. Det er veldig stor aldersforskjell [i avdelingen]. Tror det gikk fortere for oss som er vant med det [teknologien]" E-1-A

"For my own sake, I thought it would go very well, because we are so used to technology, but considering those who are a little older maybe it was a little more cumbersome for them then. There is a very big age difference [in the department]. I think it went faster for us who are used to it [technology]" E-1-A

"Det var et par av de som har jobbet her i veldig mange år som var litt skeptiske. Men utover det så var det positivt og jeg tenkte det var et riktig

> *skritt i måten å jobbe på"* E-6-A

> *"There were a couple of those who have worked here for many years who were a little sceptical. But beyond that, it was positive and I thought it was the right step in the way of working"* E-6-A

The interviewees were asked if they had experienced any specific emotions or feelings regarding the pre-phase of the implementation. The general response was that they could not recollect any strong feelings or emotions from this period. One of the employees could vaguely remember that there was a feeling of "relief". It seemed from the interviews that there were no particular emotional reactions from the interview objects.

> *"Husker ikke. Litt lettelse kanskje at det skulle bli lettere"* E-1-A

> *"I don't remember. A little relief, maybe because that it would become easier"* E-1-A

The transition from introducing MO into the implementation phase was initiated by a few information meetings and subsequent viewings of an educational video which explained the functionalities of MO. An e-learning tool was also provided to the employees in advance of the implementation. This aided group A in preparing for the new technological change. All the employees felt that they had been given adequate training in advance. The employees seemed to quickly adapt and did not experience any lack of information or training on how to make use of the system. As we will see later in this chapter, the employees did experience some difficulties in the implementation phase. Yet, this was not blamed on lack of training, neither did they feel that the change came abrupt. In regard to training, the managers received the same training tools as the employees. However, the manager did not receive any training or information regarding leading a change process. The manager had received no directives regarding how the change should be implemented, only that it should be done within a given time frame. The manager said that she had previous management education that she depended on when asked about her management capabilities. The manager focused on sharing information, motivating the employees and providing them with the resources to learn the new system in the pre-implementation phase.

Department B

From the interviews we understand that the interview objects felt that the change was introduced and explained to the employees in good time before the change was implemented. When asked to describe their initial response towards the change half of the interview objects said that they expressed scepticism. When questioned regarding where this scepticism originated from, some of the employees expressed that it was part of human nature to be sceptical to changes while others had heard that the change would bring with it challenges, especially in the beginning. It was mentioned that several employees had made their scepticism heard and highlighted the potential difficulty such a digital tool would bring with it. Among these employees it seemed that the challenges of using the digital tool was the most focal point. The employees expressed that they had concerns regarding the stability of the phones and whether they would be able to access the information that they needed. The potential issues were not exclusively mentioned however, the sceptical employees recognized the potential benefits that MO could bring, yet had insecurities regarding whether they would reap these benefits.

> *"Vi var jo litt skeptisk for vi veit at en mobil ikke alltid er stabil. Vi visste heller ikke hvordan det var med sikkerhet, ville vi komme inn på det vi skulle. Du vet, alt som er nytt er fremmed, men samtidig er det litt greit å slippe de listene siden det var farlig å miste de. Så det va pluss minus med en gang"* E-1-B

> *"We were a little bit sceptical because we know that phones are not always stabile. We didn't know neither how it would be regarding security, would we be able to access what we needed. You know, everything new is foreign, yet it is nice to drop the lists since we do not have to worry about losing them anymore"* E-1-B

Conversely, the other half of the interview objects welcomed the change as the potential upside seemed favourable and some had even asked for the change beforehand. The more positively inclined employees did not put emphasis on the potential challenges of using MO, when asked about them they seemed to recognize that some adaptation had to be made but that these were inconsequential. Furthermore, several of them downplayed the scepticism expressed from the more negative employees. They inferred that these meanings were biased due to the individuals lack of digital capabilities and personalities, rather than a proper evaluation of the change.

> *"Det er alltid noen som alltid skal lage problemer om noe før det skal bli satt i bruk, men når vi kommer i gang så vil det gå greit"* E-6-B
>
> *"There are always those that will create a stir even before starting to use it, when we start using it, it will work itself out"* E-6-B

> *"Med en gang det ble nevnt så ble litt panikk blant de som har jobbet her lenge"* E-2-B
>
> *"When the change was mentioned, the senior workers panicked a little"* E-2-B

It seemed that the interview objects that were more sceptical to the change were more affected by the introduction of the change. Most feelings triggered from the employees in this group were connected to insecurities regarding how the MO application would be working. Even though they felt scepticism they did however not have any strong feelings evoked by the change. The more positive inclined employees were also not very emotionally invested in the change, from the responses the employees approached the change quite casually. They saw the change as positive and had some hopes on how the change would improve their daily workdays, yet it was not something that triggered any particular emotion in them. None of the interview objects seemed to view the change as something they could prohibit from happening. There was therefore no active resistance which had the intention of preventing MO being implemented.

> *"Jeg hadde ingen sterke følelser til mobil omsorg. Jeg reagerte med 'åja, nå er det påen ja'"* E-3-B
>
> *"I didn't have any strong reactions to MO. I reacted with 'okey, here we go again'"* E-3-B

> *"Det var aldri noe konflikt på grunn av Mobil Omsorg"* E-2-B
>
> *"There was never any conflict between the employees, due to MO"* E-2-B

As earlier mentioned, the change was introduced quite early before the implementation, yet some interview objects say they experienced no follow up from this initial introduction.

They said that they did not receive any proper training in using the MO application. Therefore, when the day of the hard deadline came, they could not use the MO application, and were not allowed to use the physical lists as substitutes. This lack of training made the implementation of the change felt quite abrupt for most interview objects. They felt that large routine changes had happened overnight and that they were not prepared for it. This feeling of abruptness did however vary between the employees. The employees who already had a high digital competence did adapt quickly to MO and did therefore not feel very bothered by the lack of training, while those with lower digital competence had more problems in the initial phases. Also, the lack of training communicated did vary between the employees. The department had provided some training resources, and it seemed some employees had used these, while others had not. A couple of employees mentioned that they had e-learning courses that they were supposed to do, in addition to a user manual for MO. The e-learning consisted of user manual videos that were provided by Bergen Municipality, while the user manual was in book form. It was reported however that these user manuals were not observed to be frequently used, neither were they mentioned in most of the interviews when we asked about training. Furthermore, the manager had the impression that the employees capabilities were raised to such a level that all of them had the necessary capabilities to log into MO and use those features that they had to use. From the interview we can infer that this was not always the case.

> *"For min egen del så kom jeg veldig fort inn i det, det var rett og slett bare å logge på også fant man ut litt etter hvert. Noen hadde gjerne andre større problemer. Men det var ikke noe opplæring, vi fikk det bare forklart på forhånd"* E-4-B

> *"I for one adjusted to it quite early, I just had to log into it and found out about it after a while. Some experienced some larger issues. There was no training beforehand, we just got it explained"* E-4-B

> *"Jeg tenker at den dagen de fikk mobilene så var det egentlig slik at alle sammen i stand til å logge seg på mobilen og i stand til å bruke den til å bruke arbeidslisten sin og skrive rapport på den"* M-B

> *"I think that the day MO was introduced the employees were capable to log into*

the phones, to find their work lists and write reports on their phones" M-B

Summary

From the interview we see that both departments were introduced to MO in a very similar manner. Both departments had the intention of communicating the change to the employees in good time beforehand. While we saw that the interview objects from department A had all of them heard about the pending change in good time, the responses from department B differed. The reason for this is unclear and did not become apparent during our interviews. It seems however that department A was more successful than department B in providing information about the impending change, and what these changes would entail. There was much less scepticism expressed from department A in contrast to department B. Where the scepticism was downplayed as something inconsequential in department A, it became a major discussion point with several interview objects from department B. While optimism regarding the introduction of the change was originating from some employees in department B, it seemed that the majority of department A experienced optimism and welcomed the change as a solution to an existing problem. Furthermore, the training provided was very similar between both departments, yet here the reactions also differed. While the responses from department A communicated that they felt they had adequate training, this was not the case in department B where the responses varied. Several employees from department B felt that the implementation came quite abrupt and that they did not have the necessary capabilities.

4.3.2 Attitude during implementation

Department A

The initial phases of the implementation was described by the manager of department A as problematic. The main issue highlighted was regarding the mobile phone coverage, as the MO application is reliant on internet connection to work. This issue was however due to lack of modems and not something that the employees or the manager could affect directly in the short term. The issue resolved itself when the manager reached out to the department that provides these types of hardware in Bergen Municipality and had the modems installed.

"Ja da det gjorde det og det var masse ting som kom, vi hadde ikke god nok dekning inne på hovedområdet, vi hadde ikke god nok dekning ute i noen områder" M-A

"Yes it did and there were lots of things that arose, we did not have good enough coverage inside the main base, we did not have good enough coverage outside in some areas" M-A

The lack of mobile phone coverage made it difficult to register data in the system, because the system needs to be connected to the internet to store data. When the phone is not connected, the system goes into "offline mode" and the data the employees record will not be saved and might be lost. This led to some frustration and stress among some employees. The interview objects highlighted the coverage issue as the main hurdle in the initial phases of the implementation. Even though the issue was resolved not long after the initial phase started, the connectivity is still at times a problem. The issue is however not perceived to be of the type that hinders the employees of doing their work, rather it is an issue that is annoying and adds to their daily work stress.

"Selve appen går i frakoblet modus veldig ofte. Da logger den deg helt ut og så må du logge deg på på nytt. Det er det egentlig ganske stressende" E-8-A

"The app itself goes in offline mode very often. Then it logs you out completely and then you have to log in again. It's really quite stressful" E-8-A

"Vi har jo noen områder der telefonnettet er dårlig, så når vi kjører der så detter vi ut og kan få problem å bli avlogget og går da i frakoblet modus. Det skjer jo daglig, men vi blir ikke så hemmet av det. Vi må jo bare passe på at vi er i tilkoblet modus og så ellers får vi ikke lagret rapportene våre" E-6-A

"We have some areas where the connectivity is bad, so when we drive in these areas we are disconnected and can experience the problem of being logged off and then go offline. It happens daily, but we are not so inhibited by it. We just have to make sure that we are in connected mode, otherwise we will not be able to save our reports" E-6-A

The interview objects communicated a problem regarding the process of logging in. Due to safety reasons the users of the system are frequently logged out of the app after short periods of inactivity. The employees must therefore constantly log in with their username and password in order to regain access to the system. In the beginning and during implementation the employees had to learn ways to adapt to this, and the problem is perceived as less prominent today compared to the earlier phase of the implementation. The software has over time also changed making it easier for the employees to log in. This has relieved some of the frustration associated with this issue but is still mentioned as a problem today.

During a period in the earlier phase of the implementation, the unit had to use the old system with printed work lists and the new system simultaneously in order enable employees who experienced problems with the system to do their job. This created uncertainty and frustration among the employees and in the management team. Many of the employees used handwritten notes in the beginning in order to ensure that they had the correct information available and to relieve some of the uncertainty of the functionality of the new system. Some also noted down information to deal with the problem of constantly having to log in to the system. The respondents felt however that they got used to the new technology quite fast, and learned by using it, and asking colleagues for help. They were also able to seek help from the established «mobile expert» in the group. Of those interviewed in group A there seemed to be no major difficulties with regards to learning to use the system during the implementation phase. This can be due to the expressed satisfaction with regards to training in the previous section.

> *"det var et parallelt løp slik at vi måtte skrive ut lister parallelt med mobil omsorg og masse frustrasjon, det var det. Men det har gått seg til så nå går det greit"* M-A

> *"it was a parallel run, so we had to print lists in parallel with MO and lots of frustration. But it has been worked out so now it is going well"* M-A

> *"I starten var det veldig mange som noterte seg pasienter og hva som skulle gjøres på papir slik at man slipper å logge seg på"* E-7-A

> *"In the beginning, there were many who took note of patient lists and what was to be done on paper in order to avoid having to log in"* E-7-A

> *"Det er en sånn ting som fins enda, når du er midt i rapport for eksempel så kan du plutselig bare bli logget ut av systemet. Også må du logge deg inn igjen og skrive"* E-8-A

> *"There is such a thing that still exists, when you are in the middle of a report for example, you can suddenly just be logged out of the system, then you have to log in again and write"* E-8-A

Department B

The first period of the implementation was experienced as quite problematic. There were several problems, yet the ones highlighted most were problems with logging into MO and coverage issues. The logging problem consisted of the employees not being able to access the list of patients that they had to visit, and therefore could not start their workday before this problem was solved. The coverage issues were such that some areas of where they worked did not have mobile phone coverage and they could therefore not use the phones when they were in these areas. The interview objects expressed that this period of the implementation was quite stressful for the involved parties, yet they had expected it. They had heard from other departments that implemented MO that the change would entail difficulties in the beginning but that these problems would solve themselves after a while.

The interview objects expressed frustration and highlighted that these problems were a major challenge in the workday during the initial period. It was however eased by that the more proficient MO users helped the employees who did not have the same proficiency. Furthermore, they could refer themselves to the department manager for help as well. This was however a time-consuming process. As they expected, these issues persisted during the first months of the implementation process but gradually faded out. The more positively inclined employees expressed that they had expected that this period was going to be even more troublesome then it was due to the scepticism that was expressed beforehand.

> *"Veldig ofte. I begynnelsen var det mye klikk. Jeg vil si at cirka 80 prosent av de ansatte hadde problem om morgenen. Vi fikk feil feil feil, og måtte snakke*

med lederen og hun måtte snakke med de som hadde ansvar for mobil omsorg" E-2-B

"Very often. In the beginning, there was a lot of trouble. I would guess that approximately 80 percent of the employees had issues during the morning. We got several error messages and had to talk to the manager, and she had to contact those that have the primary responsibility for MO" E-2-B

"Oppstartsfasen gikk egentlig smertefritt i forhold til hva man tenkte" E-5-B

"The implementation phase went much more painless then expected" E-5-B

The interview objects told us that they became more adapted to using the MO application which made the logging issue resolve itself partly over time. They communicated that the logging issue is still a problem today, yet it does not affect them in the same way as it did in the beginning. This was due to a couple of factors. Firstly, in the beginning the logging issues were due to lack of knowledge on how to log into the application. Now, the problems are mostly due to problems with the phones themselves, and not knowledge about how to use MO. When the logging issue occurs today the employees rely on informal developed routines. The routines were such that they never solved the problem but were designed to avoid them. When a logging issue occurred, the interview objects tried their luck with finding another mobile phone and tried logging on there. If they still were not able to log inn, they had to resort to use the old method of printing out their worklist and use that. Nothing would happen to the phone and in such a situation a deviation report should have been fulfilled. This was however not always done.

"I dag går det stort sett bra, ikke helt perfekt men det går fint. Spesielt vi eldre er ikke like flinke med teknologi som dere unge, men det går fint" E-2-B

"It is going mostly fine these days, not perfect but fine. We seniors are not as adapted to technology as you young people but it's going fine" E-2-B

The issue regarding coverage was solved by the employees filling out deviation reports which led to the installation of modems around the problematic areas solving the coverage issues. Even though the most affected areas where the coverage issue happened have been resolved this problem still occurs from time to time. The interview objects shared with us that the coverage issues occur due to a combination of certain mobile phones and specific areas that are problematic. The interview objects seemed to downplay the frustration which the problem created, because they had already expected it. They described the issues as “childhood diseases” a Norwegian saying which refers to problems that occur in the beginning but sort themselves out after a while.

Summary

Both departments experienced the same two primary problems. Logging in and the coverage issues. It seemed also that they both fixed these issues in quite similar ways. Yet, the scale and time horizon of the issues differed, especially the logging issue. Where the coverage issue is a hardware issue where modems had to be installed for the phones to get the needed coverage, the logging issue was mostly a capability issue in the beginning. From the interview it seems that the problems of the logging issue persisted for a matter of weeks at department A, while for some employees it persisted for a couple months at department B. The difference here seems to have made it such that those employees of department B remember the first phase of the implementation as more problematic. Furthermore, it follows from the interviews that there was more knowledge sharing between the employees at department A then department B. Department A had also appointed an employee in an unofficial “phone-expert” role in addition to the manager, something that department B did not have as the manager had the sole primary responsibilities.

4.3.3 Attitudes post implementation

Department A

As the unit progressed through the implementation phase and the employees developed routines and knowledge of the system the problems and frustration lessened. Employees felt safer and more confident with the use of MO and could better handle the technical problems they had experienced before. The employees felt that the system had made their work easier. One of the main benefits of MO that we observed in all the responses was that employees felt that it was safer and less stressful to have sensitive information in a mobile application rather than on physical paper. Another benefit they expressed was the availability of information stored in the application. They could now access phone numbers to close relatives, medicine lists, diagnoses and report history when they were treating patients. They previously had to call the main office to retrieve such information. It was apparent that the employees saw the value that MO wanted to add to their work. Furthermore, they expressed optimism when speaking about new features being added to MO and wanted these added so they could merge it into their daily work activities.

> *"Vi har tilgang til flere opplysninger, vi har medisinliste, vi har fastlege, pårørende, telefonnummer slik at det er lettere og vi slipper å ringe inn på kontoret for å få ut den informasjonen når vi er ute"* E-6-A

> *"We have access to more information, we have the medicine list, we have access to patients doctors, relatives, and other telephone numbers making it easier and we do not have to call the office to get that information when we are out working in the field"* E-6-A

An annoyance that still exists is that some reports cannot be filled out using MO. Some report types must be filled out using a computer and Profil. Among these are reminder messages/-lists that are not meant for official reports in the system. This is a functionality all the respondents expressed a desire to have added to MO. Employees and managers have tried to get this function added for many years without success. Yet it was communicated from the employees that they expected this function to arrive at some point in the future. We observed that some of the employees we interviewed preferred to use a computer instead of MO to write reports. The computers are in the centralised main building, so employees must return to base to write reports. Employees have been encouraged to write reports continuously during the day on MO, but some still choose to use computers, this is observed both from interview objects own practice and perceived practice of others. Reasons for this are observed to be both that some are less competent in writing on mobile devices, thus increasing the time it takes to fill out a report, and the lack of functionalities on MO compared to the computer based system. One observation suggested that employees skip writing reports because the computers are busy, or they do not feel equally comfortable writing in MO.

> *"Skal jeg skrive en lengre rapport så skriver jeg på PC. Hvis det er noe kjapt og du akkurat har tatt av frakoblet modus og er klar til å skrive så går det greit. Det er nok lettere å gå på PC og bare få det gjort og ikke bli kastet ut"* E-1-A

"If I am writing a longer report, I tend to write on a PC. If it is something quick and you have just switched off offline mode and are ready to type, it is fine. It is probably easier to go on PC and just get it done and avoid being thrown out" E-1-A

"Når man er på mobil så blir det litt mindre oversiktlig. Også synes jeg det er knotete å sitte og skrive på mobilen. Det bruker jeg enda lenger tid på enn om jeg hadde tastatur og kunne sitte og skrive rapport. Jeg syns egentlig det er litt knotete" E-7-A

"When you are on a mobile phone, it becomes a little less ordered and clear. I also find it awkward to sit and write on my mobile. I spend more time on it than if I had a keyboard and could sit and write the report. I really think it's a bit awkward" E-7-A

"Ja, huskelapp savner vi, da må vi inn på PC. Det å få gjøre mer på den fylle ut IPLOS for eksempel for det er sånn man egentlig skal gjøre sammen med pasienten, men det har vi ikke kunne gjort i det hele tatt, men hvis det hadde vært mulig på mobil så kan man da lettere gjøre det hjemme hos de" E-7-A

"Yes, we miss the reminder notes, we must enter these on the PC. Getting to do more on it, filling out IPLOS, for example, because that is supposed to be done with the patient. We have not been able to do that at all, but if it had been possible on a mobile phone, you could then more easily do it at home with them" E-7-A

"Vi merket litt at det ikke er alle som skriver rapporter lengre, fordi at PCene er opptatt også er de ikke trygg på å skrive på mobil omsorg. Jeg vet ikke om det er opplæringen eller noe annet. Men litt mindre rapporter føler jeg det er" E-1-A

"We notice a bit that not everyone writes reports anymore because the PCs are busy, some are also not confident in writing in MO. I do not know if it is

> *the training or something else. But I feel there are a few fewer reports"* E-1-A

Issues with the hardware has become an increasing problem throughout the years. We observed that the majority of the respondents experienced poor battery time and issues with charging the mobile phones. This caused problems both for the employees and management. The employees had to bring chargers with them or return to the base to charge the mobile devices. MO has become an application which the employees have become reliant on, not being able to use the phones optimally is a prominent issue for them. The battery issue is worsened with the introduction of Beekey, a software which replaces keys. As more types of software is being installed on the phone and it is being used more, the pressure on the phones increase. The management said that many of the mobile phones and chargers were in quite poor condition. Furthermore, there exists several models of different phones and sometimes it is hard to know which cable fits which phone. There have been incidents where several mobile phones have been out of order or there are not enough charged phones with the consequence the management is unable to provide all workers with replacements.

> *".... det er jo en del ting som ikke fungerer og vi hadde veldig mange gamle telefoner og så har de gått ut av produksjon også har vi ikke nye avtaler. Dette er jo arbeidsverktøyet vårt og nå har vi fått Beekey på telefonene og mobilene går tom for strøm før arbeidsdagen er ferdig, da står de der uten arbeidsverktøy. Så vi sliter litt med at vi har mange gamle telefoner"* M-A

> *".... there are several things that do not work, we had a lot of old phones which have gone out of production and we do not have new agreements for new ones. The phones are our work tool and now we have a Beekey on the phones and the mobiles run out of power before the working day is over, then they are there without work tools. We also struggle a bit with the fact that we have a lot of old phones"* M-A

> *"Vi har veldig mange [telefoner] som er defekt akkurat nå. Det er litt i forhold til batteriet eller at Beekey ikke fungerer på enkelte telefoner. også er det gjerne at en at mobile omsorg hopper ut igjen spesielt ofte på noen telefoner. Vi vet ikke om det er på grunn av telefonene eller hva det er"* E-1-A

"We have several [phones] that are defective right now. It is a bit in relation to the battery or that Beekey does not work on some phones. Also, often on some phones the sessions are being abrupted when on the MO application. We do not know if it is because of the phones or what it is" E-1-A

"Tenker litt på batteriet, det går fort ned. Det er jo litt stressende" E-8-A

"I am thinking of the battery, it goes down fast. It's a little stressful" E-8-A

All the respondents view the MO-system as an improvement compared to the old system. There seems to be general consensus that the system has provided greater benefits than downsides. Many of the current issues are considered minor and do not impact the overall attitude toward MO negatively. Of these experienced issues it was quite clear that the battery issues was the one which the employees were most affected by.

Department B

After the initial implementation of MO and the particular troubles that occurred, the interview objects do not refer to any major problems that would directly prohibit them from doing their work. It was a consistent factor between all interview objects that the usage of MO became much better as time progressed and the interview objects became more used to the application. The interview objects became increasingly proficient with the existing features of MO and the new ones that were added later. They saw the adding of new features as a very positive point and they experienced the MO as a project that would steadily become better over time. The features that were added are features that already exist on the profile system on the computer but not available on the mobile platform in the beginning. During the interview process there was especially one desired feature that came up in almost every single interview, reminder lists. The computer version has the ability to create reminders on a given patients profile. Previously these reminders were written on their physical lists but since that were replaced by the mobile, they had no natural place to write them. The request for this feature was a well-known issue between the employees and the leadership, as it had been discussed and communicated to the developers. The response the employees had received from VISMA was that this feature was hard to create for the mobile platform. When asked about it, the majority of interview objects expressed understanding and belief that this feature will come in due time. They expressed understanding that such things take time to implement. This understanding originated from that the employees had seen that features had been added over time and expected that reminder lists and other features were going to be added. The interview objects seemed to view MO positively as they saw the value of using MO in the workday and almost all of them could not see themselves stop using it.

> *"Ja, jeg tror det kommer, men når det kommer er det å vanskeligere å vite"* E-3-B

> *"I believe they will be coming, but when that will be is hard to know"* E-3-B

The lack of major problems did not mean however that there were not frustrations about MO. The interview objects expressed that there existed several annoyances with using the MO application in their daily routines. The logging and coverage issue sometimes occurred, yet it was not in any large scale that the employees would describe them as problematic. The majority of these annoyances were however connected to the hardware they were using, the mobile phones. As MO has been in place for a couple of years the mobile phones that had been introduced in the beginning were wore down quite a lot. The interview objects expressed much frustration with the state of the mobile phones, highlighting poor performance and battery time as the biggest issues. They did however express understanding regarding the state of the mobile phones. They placed the blame on the state of mobile phones on their age and that the employees themselves do not take good enough care of them. Furthermore, the annoyances that were experienced seemed to be normalised and would therefore not create any large reactions. They were treated as intermediary annoyances that were part of the daily frustrations one faces at work.

> *"Noen ganger når vi leser så er plutselig økten utløpt og da blir vi kastet ut av det, og da må vi logge inn igjen. Så det er veldig sånne småting"* E-3-B

> *"Sometimes when we are reading, the session will have ended, and we get thrown out of the application and have to log in again. It's those kind of minor things"* E-3-B

> *"Noen ganger blir man irritert på teknologien når det ikke fungerer*

med en gang. Det er en mobiltelofon, det kan gå treigt, du må logge inn og ut. Det skjer ikke oftere enn forventet. Det er som et verktøy som noen ganger må slås av og på" E-4-B

"Sometimes one gets annoyed with the technology when it does not work. It is the phones, sometimes it can go slow, you must log in so many times. But it does not happen more times than expected. It is like any other tool, sometimes you just must turn it off and on again" E-4-B

"Skulle gjerne hatt nyere mobiler oftere, for det blir mer og mer teknologi på mobilene og det er ikke alle mobilene som takler det. Flere av mobilene har problemer med Beekey" E-4-B

"Would like to have newer phones, the phones have to tackle more and more technology and not all the phones tackle it. Several of the phones have issues with Beekey" E-4-B

The attitude towards MO was therefore not entirely driven by the MO application alone. The employees did interchangeably talk about the hardware and software as if they were the same thing. This is further supplied by the introduction of another mobile application, which the departments have had introduced later on. Beekey is a replacement for keys and one can open the doors by using the app and the phones Bluetooth. When asked questions about MO, the employees started sometimes to talk about Beekey and the hardware, even though they are aware that these applications are made by different suppliers. Yet, MO for them seemed to represent the usage of mobile phones on the work.

"Beekey er problematisk, av og til fungerer den bare ikke på en telefon og jeg må kjøre inn igjen for å plukke opp en ny telefon, noe som senest skjedde med meg i dag. Jeg brukte en halvtime bare på det" E-3-B

"Beeky is problematic, sometimes it just does not work on a certain phones and one has to drive back to office to pick up a new phone. That happened to me today and I spent half an hour on it" E-3-B

"Vi sparer tid med å finne fram nøkler og styre med det når vi kan

> *bruke Beekey"* E-4-B
>
> *"Beekey saves us time and effort so due to the fact that we don't need to manage keys"* E-4-B

Due to the implementation of MO, the morning routines had changed quite a bit. Now that everyone had their own lists on their phones, they did not need to read out the patients reports out loud during the morning meeting. This change of routine was quite split between the interview objects. Some interview objects felt that this was a negative change since it did not allow them to have an overview of how the patients on the other lists were doing. They felt that having this information is a security in case changes happened and they had to visit patients outside their own lists. The MO application has some restrictions regarding who's information you can access and how far back you can get information, therefore, they felt that MO was not a good substitute for this change. The blame for this routine change was placed on MO, yet they did not want to cease using MO, but rather return to their old routines and continue using MO while out in the field. Other employees did however appreciate the change in morning routine. The felt that they did not need to hear about what the other patients on other lists were doing since they had enough with their own. They recognized that MO's search features were not optimal, but one could find the needed information on a computer if it was crucial. This change in routine happened when MO was implemented four years ago yet talk of this routine change is still mentioned. The employees do however explain that this has not led to any conflicts regarding MO but leads to at worst comments from disgruntled employees.

> *"MO er greit, men vi mistet jo alt rapport også. Nå har vi kun huskeliste. På grunn av det mister vi den røde tråden. For før visste vi litt om alle, siden vi går til alle. Nå kan det gå uker før man hører rapport om noen"* E-3-B
>
> *"MO is fine, but we lose our report as well. We only read our reminder list. We have lost our red thread due to this. We used to know a little bit about everyone. Now it can go several weeks before you hear a report about someone"* E-3-B

> *"Vi har såpass mange pasienter og det blir tidskrevende om jeg skal*

> *høre om alle pasientene. Det er ikke alt jeg har nytte av å vite. Så da kan jeg bare lese på de som jeg har"* E-5-B

> *"I have so many patients and it would be quite time excessive if I heard about all the patients. I do not need to know everything about them. I can now exclusively read the information that is meant for me"* E-5-B

Summary

Post implementation, many of the issues that the departments experienced during the implementation solved itself in much the same way. Both departments had adapted to MO and were actively using it in their daily work schedules. They experienced some similar problems as well, while department A highlighted the battery issue as most prominent, department B mentioned the routine changes most often. However, the opinions regarding this was split between the employees of department B. Conversely to the previous results, department B seemed to be more forgiving towards the state of the phones as department A expressed quite strongly that they were not satisfied with their mobile phones. Another similarity between the departments was that their attitude towards MO, was also not solely focused on the software MO. They saw the hardware, the MO application and the Beekey application as all part of MO.

While all the interview objects from department A expressed that MO was a very positive addition to their work, this sentiment was not expressed to the same degree at department B. While the level of excitement and optimism regarding MO was equal between the positive members of department A and department B, there was more differing opinions regarding MO at department B. Furthermore, interview objects from department B had expressed that they missed the morning report which had been removed due to MO. This sentiment seemed to be much more widespread at department B in contrast to department A. While there were several members that expressed this strongly at department B, there were very few that expressed this at department A.

4.3.4 Attitude towards digitalization

Department A

All the interview objects felt that they were confident using technology at work.

Furthermore, they saw these digital tools as being valuable and helping them perform better at their jobs. They expressed a positive opinion of using further digital tools at work. They also viewed MO as part of the increasing trend of digitalization and technology implementation in the health sector. When asked about their general view of this trend, some interview objects felt indifferent while others were optimistic. However, the majority felt that it was a positive trend for the healthcare sector and that it would be beneficial for the industry. There was however one respondent who was positive but had reservations because she felt that a lot of technology implementations had inadequate organizing and unclearly defined roles. Furthermore, they were also all in agreement that this is the direction the healthcare sector will be taking. They expected that more of these types of digitalization efforts were going to be introduced across all of the healthcare sector in Norway.

> *"Det [teknologien] er bra, men ikke alltid det er godt nok organisert med tanke på hvem som skal ha ansvaret for den nye teknologien. Om det er hjemmesykepleien eller det Respons Senteret som skal ta seg av alarmer og andre ting. Hvem skal ta det ansvaret?"* E-7-A
>
> *"It [technology] is good, but not always well organized in terms of who will be responsible for the new technology. For example, whether it is the home nursing or the Response Center that will take care of alarms and other things. Who will take that responsibility?"* E-7-A

> *"Det tenker jeg er den veien vi går. Det vil skje mange endringer og det har skjedd masse endringer, og det er bra"* E-6-A
>
> *"I think that's the way we go. There will be a lot of changes and there have been a lot of changes, and I think that's good"* E-6-A

Department B

We asked the interview object about what they thought of digitalization in the healthcare sector. The interview objects had an understanding that this subject was one of high relevance and that digitalization in the healthcare sector could not be avoided. They perceived digitalization of the healthcare sector as something that would come to pass and unavoidable. Whether this was a positive event or not was for them uncertain as it was not clear to them what digitalization of the healthcare industry would mean. There was particularly two points that kept being raised by several interview objects. The first point was that the technology would actually work and not bring with its hidden costs. The interview objects referred to MO when speaking about this point as they were primarily positive to the technology, when the technology worked. They did not express negative feelings or attitudes towards technology by default. They saw the value that MO brought with it as a tool, yet the fragility of the tool was a centre of scepticism towards it. This scepticism was further expressed when asked about their attitudes about introducing more technological tools into their workday. The next point centres around that the technology had to continue being a tool for the workers and patients, and not replace the workers. The interview objects expressed clearly that they were positive to further technological tools that improved the patients' lives and their workday. However, it was important that these tools did not try to replace the human contact that the workers provided.

> *"Det er veldig viktig at helsevesenet går framover med teknologien"* E-2-B
>
> *"It's important that the health care sector is updated with the technology"* E-2-B

> *"Dette er jo sånn det i slike tider. Så lenge teknologien fungere, og vi kan stole på den så er det helt fint det. Det er det viktigste av alt"* E-3-B
>
> *"It is like this in these days. The most important thing is that as long as technology works, and we can trust it I am positive"* E-3-B

> *"Syns det var bra at MO kom, vi trengte å bli mer digitalisert"* E-4-B
>
> *"I think it's good that MO came, we needed to become more digitalized"* E-4-B

> *"Jeg er positiv til teknologi som gjør at pasientene kan bo lengre hjemme, men ønsker ikke at det skal erstatte mellommenneskelig kontakt"* E-5-B
>
> *"I approve of technology that can help the patients stay at home longer, but I don't want it to replace human contact"* E-5-B

Summary

The department's attitudes towards digitalization seemed to be quite similar with some varied responses from both sets of employees. There was however a stronger emphasis by department B on the fact that digitalization is positive if the technology introduced does actually work as intended. Yet, both sets of employees expressed similar views regarding that they expected the healthcare industry to undergo further digitalization in the coming years.

4.3.5 Change management and leadership

Department A

The manager in group A was provided information on the MO-project well in advance of the implementation. During these information meeting there were not given enough specific instruction on how the change should be implemented, only that it should be done within a given time frame. Neither did the manager receive any training in change management or any special training regarding the MO application. Knowledge about how to lead change processes was something the manager had acquired from leadership education and courses she had undergone earlier. The manager further went on to say that the employees did not need much encouragement because they already were motivated to embrace the change, with a few exceptions. There was little need to motivate the younger employees, but the manager found that some of the older employees had reservations. This motivation was derived from the fact that the employees saw the introduction of MO as a solution to a problem they had voiced. Department A's manager did therefore not need to put much effort into motivating or rally the employees as they voluntarily embraced the change.

> *"Nei, ikke de unge, men vi har jo noen som nærmer seg pensjonsalder som jobber hos oss og gruet seg veldig til dette her [endringen], men det har gått veldig fint og de tok det fint"* M-A

> *"No, not the young ones, but we have some approaching retirement age who works with us and dreaded this [change] very much, but it has gone very well, and they took it well"* M-A

"Vi hadde jo et program med BK-læring mobil omsorg som vi gikk gjennom i plenum og hver enkelt kunne ta det hjemme. Men jeg har jo inntrykk av at dette hadde de ventet på lenge og dette hadde vi snakket om lenge. Så alle var kjempegiret når det kom og syntes det var topp" M-A

"We had a program called BK-learning MO which we went through in plenary and each individual could use this resource from home. But I had the impression that they had been waiting for this [MO] for a long time and we had talked about this for a long time. So, everyone was exited when it came and thought it was great" M-A

"Jeg har ikke fått noe opplæring i det [endringsledelse] annet enn det jeg har lært på lederskole når du har gått videreutdanning i ledelse" M-A

"I have not received any training in it [change management] other than what I have learned at leadership school when you have completed courses in management" M-A

The manager had appointed one of the employees as responsible for the mobile telephones, with the unofficial title of “mobile expert”. The appointment was made after the employee had expressed a wish to take on this responsibility. This role was created so that employees had someone they could ask questions and give feedback to directly if they experienced problems during the workday. The person responsible for the mobile telephones could then report problems and other issues directly to the unit manager. The communication between the employees, the unit manager and her consultants and leaders are expressed as good by the manager. The unit has deviation reports and other channels of communication that they can utilise to give feedback and report to. Yet, she felt that the employees did not make use of these system to a satisfactory degree. The unit manager felt that communication upwards in the leadership hierarchy worked well.

"Det [kommunikasjonen mellom deg og din nærmeste leder og ledergruppe] fungerer veldig greit. De kan kanskje ikke gjør noe mer enn meg de heller men vi skal jo gå tjenestevei" M-A

"It [the communication between you and your immediate manager and

> *management team] works very well. They may not be able to do anything more than me either since we are supposed to go through the official channels"* M-A

The overarching ambition, goals and vision for the implementation, set by the municipality, was unclear to the majority of employees and to some extent the manager. Only security of sensitive data was mentioned when asked about whether there were any goals for realization of benefits, the only answer that was given was that it was going to provide better data and privacy security for sensitive data.

Department B

The department manager was not given any instructions on how to implement the change. The manager had previously been involved in other changes, yet none which were so technical and massive in scale as this one. From the interviews it follows that the change was introduced to the department heads in due time before the implementation was introduced to the department. During these information meeting it was communicated that the change had to be introduced in the department within a certain date. There were no other demands put on the department's heads by higher ups other than that MO was being implemented and used to the extent that it replaced the physical lists. How to achieve this goal however was entirely up to the department heads. The manager went forward and set up a hard deadline on when the implementation was supposed to be rolled out. She communicated this date to the employees and explained that from this date onward the physical lists were going to be removed and replaced by MO. Prior to this introduction the manager felt that her main responsibility was to facilitate that the employees were comfortable with using MO. Especially regarding the employees that were not so comfortable with digital tools. She experienced that there was a varying degree of digital competence within the department. Facilitation was being done by watching tutorial videos during their lunch breaks. The manager expressed that these tutorial videos were shown on a daily basis during the lunch break. The goal was that the employees were on a level where they could log onto the application and be able to access their worklist.

> *"Det var opp til den enkelte leder å legge opp opplæringen slik de ønsket. Jeg kan ikke huske at det ble stilt noe krav utenom at det skulle være på plass til en viss dato"* M-B

> *"It was up to the individual manager to set a plan for how they wanted to train the employees. I can't remember if there was any demands that we had to fulfil other then that it had to be implemented by a certain date"* M-B

In the beginning of the implementation period, the manager expressed that she would have appreciated having someone to contact. When problems regarding MO would arise, it would have been up to her to solve these issues. She had however not received any special training or given access to anything other than what employees already had been given access to. Therefore, besides inherent personal capabilities she did not have any prerequisites to be able to handle these issues. The manager expressed that the lack of training was something she missed and wished that she had been given the proper prerequisites to deal with the potential issues that were raised. Furthermore, about change management there was no training or courses involved prior to the implementation. This however did seem to be something that the manager missed as she was unsure on whether it would have been necessary as the implementation process went far better than expected.

> *"Jeg savnet gjerne at vi hadde en back-up-plan når vi rullet MO ut. Å ha noen å ringe til hvis man støtte på problemer som svarte deg enkelt og greit"* M-B

> *"I wished that we had a back-up plan when we rolled MO out. It would have been nice to have someone to call to if problems were to arise"* M-B

Summary

In many ways the managers' actions mirrored each other. Both had been part of the same management team that received the task of implementing the change within a given time frame. They had both presented the change in good time to their employees and provided the same type of training. As previously mentioned, department B's employees did not express the same amount of preparedness as department A. Yet, the managers actions did not differ in the regards to training. From the interviews it seemed that department B's manager put stronger emphasis on training then department A's manager. This might have been due to that there was a higher degree of scepticism expressed from department B. A difference in management actions present itself in that department A had an eager employee who took the role of "phone-expert", department B did not have anything like this. Department A's manager appointed therefore someone in this unofficial role, while department B did not have anyone in this position. Furthermore, department B's manager did express that she would have desired some assistance in regard to the technical aspects, something the manager of department A did not express. It did however not seem that there was any difference in the technical skills of the managers. The need for assistance might therefore be due to other reasons such as that department B's manager had more issues directed to her. Yet, both managers were overall positive towards both how the implementation phase went, and MO as a whole. They both spoke favourably of MO and expressed that MO is here to stay.

4.3.6 Resistance to change

Although there are many similarities between both departments, the degree of resistance to change was clearly different. Following from the interview it was clear that department A experienced less resistance to change then department B. A larger section of the employees of department B's initial reactions to the change was more characterized by scepticism and worries regarding the technical nature of the change. While this sentiment existed in department A as well, it was not expressed to any high degree. Conversely, most of the reactions from department A was characterized by optimism towards the change. Therefore, we can see that department B had experienced a higher degree of resistance to change then department A. Furthermore, as the resistance towards the change was never expressed directly in the form of active resistance, it was being presented more in the form of comments in the work environment. Following from the interviews this was also highlighted as something that existed much more of in department B, then in department A. While, this was something that had been almost entirely removed over time in department A, there still existed such a sentiment in department B. Primarily due to the changes that MO had brought forth in regards to the morning report.

Neither of the departments had undertaken any other digitalization efforts earlier, yet both had been undergoing some restructuring and changes in routines. They belong to the same upper unit and would therefore share all the large changes implemented. The departments change experience can therefore be characterized as the same. The communication between managers and employees from both departments seemed to be in many ways identical. There did seem however that there as a higher degree of knowledge sharing between employees in department A rather than in department B as this was more strongly emphasised during the interviews.

> *"De er alltid skeptiske til nye ting, men så prøver de det ut også går det fint"* M-B

> *"They are always sceptical to new things, yet usually when they try it out after a while it goes fine"* M-B

4.3.7 Consolidating the change

Both departments best tool to consolidate the change and try to maximise the potential gains from MO is by using the deviation reports. When defects or errors happened, the deviation reports highlights this so that the top management can apply attention and take action to solve these issues. Yet, both department managers highlight that they receive very few deviation reports compared to how many issues that are raised. All the deviation reports goes to the managers before being submitted further through the system and therefore they had a total overview of how many that were written. The managers highlight that effort to make people write deviation reports has been made, yet these have not been fruitful. Furthermore, they mention that it is not due to lack of issues that there are not written deviation reports, it is due to lack of effort by the employees to write these reports. This was due to that they primarily can write deviation reports on the computer and not phone, and it is quite a clunky system when trying to do this on the phone. The single largest point of problem with MO identified by the managers were bad hardware. It is expressed from the interviews that even though there is an understanding that MO application is a work in progress and the application will gradually become better, the phones are problematic. Conversely to the software, the hardware is getting worse with time and Bergen Municipality do not replace them often enough.

> *"De er på mobilen hele tiden så det er stor slitasje på de mobilene. Vi skulle hatt mer rullering på de, det er for dårlig verktøy for våre bruk"* M-A

> *"They [the employees] are on the phone all the time so there is a lot of wear and tear on them. We should have replaced the phones more often, it's an inadequate tool for our use"* M-A

> *"Avvik systemet blir ikke brukt godt nok, vi kan bli bedre på det. Det*

> *er lett å ikke gjøre det fordi det må gjøres på en pc og ikke noe man kan gjøre med å bruke alle mobilene. De mobilene man kan skrive uønskede hendelser på så er det et krøkkete system å bruke"* M-B

> *"The deviation system is not used well enough; we can become better at using it. It is easy to not do it because you must do it primarily on a computer and not on every phone. Those phones where you can write about deviations the system in place is clunky to use"* M-B

4.3.8 Gains from MO

Both the managers and employees from both departments were overall satisfied with the MO application. They all understood that MO was here to stay, and they would not return to working with physical lists in the future. Gains in terms of easy accessibility to information and patient information security was highlighted several times during the interviews. However, there was a difference between the departments in regard to as when were these gains achieved. In department B, initially due to the many issues that occurred, and adaptation issues the manager of department B did not clearly see that the promised gains were present. She expressed that these gains are however been more visible a couple years after the implementation. Especially the gains regarding easing the workload and MO being a good tool which improves the workday of the employees, rather than the economic gains. These claims are further strengthened by the employee's responses from the interviews as several of them have explicitly stated that they see MO as a valuable tool now when it works as intended. The employees report that they do not feel that they have saved much time in regard to the reports. Some reports must be written on the computer anyway due to missing features in MO and therefore MO does not function as a perfect substitute. Some did however mention that they felt they had less overtime due to reporting, supporting some gains in regard to the time saved. The proposed change had however also the intention of being more cost efficient, this was something that the managers could not verify was the case. They expressed that cost efficiency was one of the goals of the change yet was not clear on whether these gains were achieved. Due to some routine changes that MO had enabled, the administration had opened up some time in their day, yet the technology is reliant on expensive hardware.

"Det skal jo være mer kostnadseffektivt, men jeg kan ikke si at jeg har sett det" M-A

"It is supposed to be more cost-effective, but I can not say that I have seen it" M-A

"Vi vil aldri gå tilbake til arbeidslister. En besparelse kan ligge i administrasjonen, fordi vi som sitter i administrasjon med min fagansvarlige som ser på og fordeler arbeidslister. Har vi en syk ansatt om morgenen så går vi bare inn og så omfordeler vi på arbeidslisten før folk har kommet og logget seg på. Nå slipper vi dermed tiden det tar å skrive ut nye arbeidslister. Det er ting som er mye enklere når det blir mer digitalt. også skriver de rapportene og det er jo vi oppfordret til å gjøre det hjemme hos pasienten på mobilen" M-A

"We will never go back to worklists. A saving can be in the administration, because we who are in the administration look at and distribute worklists. If we have a sick employee in the morning, we just go in and then we redistribute the work list before people have arrived at work and logged on. We now avoid the time it takes to print new worklists. There are things that are much easier when it becomes more digital. They also write reports and we are encouraged to do so at the patient's home on the mobile" M-A

"Det har blitt lettere å jobbe" E-2-B

"The work has become easier" E-2-B

"Fordel med MO er at vi er ut i felten, vi sparer en del tid med at vi kan hente ut informasjon om pasienten ute istedenfor å henvende oss til kontoret" E-4-B

"An advantage of MO is that when we are out in the field, we can access the information about the patients without contacting the office" E-4-B

"Samme tiden går sikkert mer fordi det tar jo like lang tid å skrive i en bil enn i å skrive på datamaskinen, men du tar de fem minuttene rett etter

at du er kommet ut fra en pasient istedenfor på slutten av vakten" E-4-B

"I think we use the same amount of time since it takes the equal amount of time to write it on the phone as the computer. You just spend that time right after you visited a patient rather at the end of the shift" E-4-B

4.4 Summary

In this chapter we have seen how the findings highlight that the departments have somewhat ended up with the same conclusion in regard to their organizational change. Both departments did achieve success with regard to the majority of goals communicated from top management to middle management. Which was mainly to make sure that the department is applying the introduced digital device by a given date. This goal was attained more successfully by department A, by achieving it more quickly and with less issues experienced. We also see that there exists more unrest in department B regarding MO then in department A. Following the document analysis of the pilot report we saw that just implementing the solution was however not the only goal for the project. The intended gains which implementation was supposed to achieve was however not communicated thoroughly to the middle managers. Therefore, their only goal with the project was to make sure the department applied MO. There has not been any extensive review on whether these goals have been attained in the aftermath of the implementation. In this regard, both departments change project can either be viewed as a success or failure, depending on which metric it is based upon and the goals set. The one communicated to the middle managers or the goals presented in the pilot report.

Despite their differing experiences, both departments experience somewhat the same issues with the MO application. Both departments have issues harvesting the gains which the MO application is supposed to create due to hardware issues. In the following chapter we are going to review these findings in the light of the chosen literature to answer why these differences occurred. Furthermore, we are going to review the similar actions taken by both departments management in light of change management literature to provide insight into how the change process occurred.

5 Discussion

The purpose of this chapter is to structurize and discuss the most prominent findings from the previous chapter, findings. The highlighted findings will be reviewed through the previously discussed theoretical frameworks, The discussion chapter will be starting with discussing some focal points that differed between the departments during their implementation process. Furthermore, from the previous chapter, we have seen that there have been many aspects of the implementation process that were similar between the departments. Therefore, the following section will be analysing the similarities in process between how the departments implemented the change, and theory recommendations.

5.1 Comparing differences between departments

5.1.1 Cynicism towards the change

From the findings chapter we highlighted how the reactions to the change differed in between departments. We saw that a larger portion of the employees from department B reacted with cynicism when introduced to the change. Throughout our interviews we tried to find the source of this cynicism, whether it was originating from personal preferences, attitudes towards change in general or whether it was due to another characteristic of the change. When asked about where the cynicism originated from employees either responded with that, they are personally sceptical of anything new or that they were sceptical to the proposed digital devices. Wanous. et al (2000) describes organizational change cynicism as a product of lost faith in management due to bad past experiences when undergoing change. Therefore, a prerequisite for this being the source of cynicism, the employees must have undergone bad changes in the past.

From the interviews we observed that cynicism towards the change in both departments originated primarily from the senior employees. If length of career in an industry functions as an insight to number of changes experienced, this could highlight why there exists such a divide between the reactions of the employees by age. As the more senior employees have experienced more changes, it is more likely that more of these changes have not been successful and therefore they have become more cynical over the course of their career. A difference between the departments in this regard is that there were a larger portion of senior employees in department B, then in department A. From the interviews we learn that department A had quite few senior members, while department B had a greater balance between senior and younger members. Therefore, department A and B had differing prerequisites before the implementation was introduced. This would lead to a stronger potential for resistance to change in department B in then department A, as there were more members with the same sentiment towards the proposed change. The attitude strength of the employees with negative valence did not seem to vary much between the departments, as there was no mention of any tension in either department due to MO. There was however a larger scope of employees with negative valences towards the proposed change in department B.

Furthermore, among the more positively aligned employees, the change was received as a solution to a problem in department A, while at department B it was somewhat more unclear what value the change would bring. Even though their valence was similar, the positive members of department A expressed higher attitude strength then the employees at department B. There were not much procedural differences between how the managers presented the changes towards their employees. Therefore, it seems to be the case that it was not the actions of the managers that led to the difference in initial attitude towards the change, but that the departments had differing prerequisites.

Another source of cynicism was worries regarding the technical aspect of the proposed change. Many employees were worried by whether they would be able to live up to the expectations that the MO tool would place upon them. Individuals reaction towards a change being moderated by the perceptions of them having the necessary capabilities in the context of technological changes was especially highlighted by Chreim (2006). Employees react more negatively towards a proposed change if they have the perceptions that they do not have the necessary capabilities to master the change. Within the departments we found that there were more employees which expressed this belief in department B, then in department A. Employees, primarily the seniors, expressed concerns regarding having the necessary capabilities and expected to experience technostress due to this change. This source of cynicism was legitimate as many individuals experienced technostress, especially during the first implementation phase. The cynicism due to the technical issues was therefore a precursor and warning for what troubles that might arise and serve as a threat towards the proposed change. This concern was also shared by the positive employees at department B and their manager. There seemed to be an understanding and expectation that the change was going to be difficult to implement. It was expressed in hindsight that even though they experienced issues, they were expecting even more hardship than what they received. This scepticism might have affected the change negatively as literature on organizational change highlights that management scepticism and employee's perception on whether the organization can implement the change could be a hinder to a successful change.

5.1.2 Hardship in the first phase

Another distinction between the departments were the degree of problems experienced in the first phase of the implementation process. Both departments experienced a degree of issues, yet department B had more scale and depth to these issues. Where the issues were resolved somewhat swiftly in department A, the issues persevered for some months in department B. Since the coverage issue were somewhat due to circumstances outside either departments control, we will mainly focus on the login issues. The login issue erupted primarily due to lack of capabilities in regard to using MO. Following the previous section, the employees of department A expressed quite low resistance to change and that they had received the adequate training to use MO. However, the training provided by both departments were very similar, difference being that department A had more successfully provided it to a larger section of their employees. This indicates that the departments had a varying degree of training required before implementation. The technical proficient employees in both departments reacted quite similarly to the presented issues, yet there were more less proficient employees in department B then in department A. Therefore, department B would have required more training beforehand then department A. Neither department had done an official review of the employees' digital literacy, yet based on the initial reactions and experience, management were quite aware of their employee's digital competence. Even though department B's manager recognized that her most important job was to provide the necessary capabilities, the training provided was inadequate in providing these capabilities to the employees. On the day of implementation and the subsequent months thereafter, department B experienced more technostress than department A, mainly from techno-complexity, due to lack of capabilities. Techno-complexity refers to the digital devices inherent ability to make the employees feel incompetent. Both departments had similar technostress-inhibitors in the form of technical support provided by the manager. While at department B, the manager had been the focal point to turn to when experiencing issues, department A had also a higher degree of knowledge sharing among employees and an informal “mobile-expert”. The “mobile-expert” functioned as another technical support channel which the employees of department A could utilize. Department B’s employees were satisfied with the managers ability to help yet reported that it was a time-consuming endeavour. Therefore, the employees of department B were satisfied with the technical support provided by the manager, but they lacked other technostress inhibitors to alleviate the pressure on the manager. Department A had therefore less employees experiencing technostress and more technostress inhibitors present. These observations are coherent with the provided theory from Fugleseth and Sørebø (2014) as we see that the combination of higher degree of technostress creators and less technostress inhibitors reduced the satisfaction that department B had with MO, especially in the first phase of the implementation. Furthermore, Fugleseth and Sørebø (2014) highlight age as a prominent factor in affecting perception of technostress creators and inhibitors. As there were more senior members in department B then department A, the age configuration of the employees might influence the effectiveness of technostress inhibitors and the perception of technostress creators.

5.1.3 Reaction towards the socio-technic structure changes

Post implementation, the majority of employees from both departments recognized the value of MO and were relatively adapted to using it. Most of the employees had adequate MO capabilities to use the most necessary functionalities. However, a larger section of the employees in department B were more dissatisfied with the socio-technic structure changes that occurred due to MO. The changes made to the morning routines were described by some employees in department B as a threat to the quality of the employees’ work. This criticism was however quite split in department B, and not very apparent in department A. The criticism towards these routine changes were manifested in that the new routines provided a lack of information regarding patients. We did however uncover several methods that the employees could acquire the required information relatively easily. This would however require using either MO or its computer equivalent. The employees who expressed this criticism were also the ones which expressed the highest degree of scepticism when the change was introduced. Those more optimistic about the change did not express this sentiment and were conversely satisfied with the changes to the socio-technic structure. Therefore, there seemed to be a differing perception of reality in regard to this aspect of the change. We believe this criticism towards the change might be due to attitude perseverance and lack of digital literacy. This criticism seemed to be a manifestation of their previously held attitudes towards MO. As there exists several ways for the employees to acquire the information they need, yet they either do not use the tools or they do not find the information sufficient. Not using MO might be due to a discomfort with all the functionalities of MO or simply a lack of knowledge about them due to low digital literacy. The information that exists on MO and the computer seems to be sufficient for the employees who use them and therefore it is hard to determine why the sceptical employees do not find this sufficient. It was apparent in the interviews that this issue had existed for a while and was well known to the employees at the department, yet there was no active conflict ongoing regarding this issue. There were neither any actions taken by management to address these issues. Even though there was no active conflict ongoing regarding this issue, this criticism represents a dissatisfied sentiment towards MO. A sentiment that does not exists to any important degree at department A yet is very present at department B.

5.1.4 Summary

Following from the previous sections we have seen that the differences between department A and B were mostly due to differing prerequisites. Department B had more employees which expressed cynicism and we saw that there existed a higher degree of resistance to change than in department A. Therefore, the required effort to reduce these sources of resistance was greater for department B then in department A. This was not being represented in the change effort however, as the actions taken by management were quite similar. The effort that was put into making department B ready for the change was not adequate as the employees at department B needed another form of training then what was provided. These early problems seemed to have manifested in a somewhat divided attitude on MO in department B, while at department A it was primary homogenic positive. In the following section we are going to discuss some of the aspects that both departments shared and their affect on the change according to chosen literature.

5.2 Comparing shared characteristics

5.2.1 Lack of well communicated goals and visions

The goals and visions which MO intended to achieve were stated by Bergen municipality, primarily through mandates and documents, such as the previously mentioned pilot-project report. Top management formulated goals that encompassed both financial and non-financial gains which they hope to achieve by implementing MO. Based on the findings, we identified five main goals for the MO-project:

> **Better resource utilization**; the solution provides an opportunity for a changed organization of everyday work and work methodology. Effectively providing better efficiency and reduced cost in the departments.
>
> **Reduced stress for employees**; employees have the necessary information out to users and can complete tasks related to documentation and reporting during the working day and do not have to wait for a free PC, possibly working beyond normal working hours.
>
> **Increased patient safety**; employees have access to updated information that can be handled by employees in a secure way.
>
> **Better quality of handling patient information**; avoids loss of worklists, and only employees in need of information about the patient receive this.
>
> **Increased quality of documentation in patient records**; provide a structured and clear documentation process. It should therefore not be necessary to spend time writing (long) reports, unless there are deviations from the action plan.

From our findings we observe that there existed a disparity between which of these goals that seemed to be fulfilled. Furthermore, we observed that the interview objects in general, both managers and employees, had difficulties describing what goals and visions MO was supposed to achieve. When asked about the proposed gains of MO the employees talked about the benefits which, they themselves experienced, rather than talking about the goals stated by top management. There was no consistent response on what the supposed goal of the MO change. Their responses were affected by which gain they noticed most strongly in their daily work lives. The employees were therefore not aware if there were goals which were achieved or not, a consequence of lack of communication. The qualitative goals were better understood and implemented than financial and quantitative goals in both departments.

Employees expressed that stress caused by lack of information had been reduced because they now have the necessary information about patients more easily available. Furthermore, they can complete tasks related to documentation and reporting even when outside of their offices. Patient data security has also been improved with MO, and the majority of the employees mentioned this as the main benefit of the system. Since patient information is now saved behind a password protected device, the employees expressed that patient security is no longer a problem even if they lose their phones. Prior to this, when losing the physical work list during an assignment, it would bring forth much stress and work to find the lost list and fill deviation reports regarding the issue. Furthermore, information outflow was reduced to reach those employees that were directly in contact with the given patients rather than everyone in the department. The benefits mentioned here seem to be quite well understood by the employees of the department as its effect and measurement was easy to feel. They employees could quite easily make their minds up around these gains due to that it had quite tangible consequences on their daily work lives. We saw from our findings that neither department had dedicated much time to communicate the supposed goals for MO. Both departments did however try to focus on how the MO-change would affect the employees work lives positively when the change was initially presented. However, after the initial introduction there was little to no action taken to try to measure or check on whether these gains were achieved. Due to the nature of the MO application and how it directly affected the workday when used, some of the aforementioned goals were achieved just by directly helping the employees use MO and change the work routines. It seemed therefore that these goals were not that reliant on communication but were more reliant on providing the required training and extend the usage throughout the department. This might be due to that these goals represent fields where the interest of the employees and the organization coincide. These goals might not require motivation or attention to be fulfilled as the employees do what is in their best interest rather than taking action that is exclusively in the interest of the organization. These goals were achieved at both departments, yet at differing times, which was discussed earlier in this chapter. These achieved goals enabled the employees and managers to observe short-term goals of the project which is shown to be important in achieving success in change implementations (Kotter, 1995). We can see how that since department A achieved these goals earlier then department B, they could more easily observe the fulfilled goals.

The lack of communication originated from top management level as the middle management themselves were not communicated explicitly about these possible gains. From the employees and middle management point of view MO was therefore successful since it fulfilled the goals of which they were aware of. From the viewpoint of top management however, this seem to not be the case.

Two goals that we observed as likely less fulfilled is the first goal, better resource utilization and the last, better quality documentation. From the top management view, there seemed to be clear indication that the realization of this goal was of great importance. Achieving the fiscal goals seemed to be a priority to top management to be able to implement further similar projects in the future. Since MO was the first large such digitalization effort in these departments, the fiscal success of this project would either be a boost or barrier for implementation of future projects. The requirement for the total project portfolio of «Smart Omsorg» is to realize financial gains of NOK 140 million. While "Smart Omsorg" accounts for a larger digitalization effort in Bergen Municipality, the MO-project alone, which we covered, had a predicted potential to account for NOK 14 million (sum of all departments) of these gains per year, based on calculations from the cost–benefit analysis in the pilot report (SINTEF, 2014). Discussion on whether these set financial goals reflected realistic goals to be achieved is beyond the scope of this study. However, the goals set determines whether a change can be categorized as a success or not. If the goals set are out of proportion with reality the proposed change will more likely fail.

We find little indication in our findings that the financial goal has been clearly communicated to the middle managers in the units and further developed into concrete objectives for the employees. From theory we find that highlighting goals and visions function as internal drivers and that managers must connect that the solutions that are presented contribute to achieving these goals (Fernandez and Rainey, 2006). Vision must also be clear, and managers must focus on specificity and cohesion so that the directives do not become unrelated and fragmented. Therefore, it is important for managers to know what constitutes a success when they implement their organizational change as they must communicate the actions that will lead to this success. For the program leadership the financial gains constitute a way of measuring success and should therefore have been communicated more clearly to the middle managers and resulted in objective measures for employees. What the middle managers were presented with however were directives to implement MO and there did not seem to be any explicit action taken to achieve the financial gains. Since the financial goals were not focused on, it has not been able for the departments to confirm on whether the change has been financially successful.

From our results there seemed to be no indication that the quality of reporting had become better due to MO. The employees reported that it had become easier to write reports due to a lessening of traffic on the computers, but the quality did not improve. They blamed unstable MO software and the clunky nature of writing on a phone as the main reasons for this. Furthermore, some reports still required that they had to access a computer due to lack of functionality on MO and therefore the report could be written on there.

Based on the findings, we believe that there have been weaknesses in both departments regarding the way that the goals and visions of the MO-programme has been communicated. This has had consequences on the goals corresponding to predicted and ratified realization of cost reductions and efficiency. Neither the managers nor the employees could recollect that they had received explicit information of cost efficiency, the consequent budget cuts this could entail and that this was a goal for this project. This may have contributed to the negative deviation in the expectations for financial gains in this project. The 2018 status report for the "Smart Omsorg"-program states that *"It is per. 31.12.18 a negative deviation in several of the agencies in the City Council's Department of Health and Care, which makes it challenging to effect further financial gains at the end of the program"* (Bergen Kommune, 2018). The program management and the municipality has therefore not made further reductions in the budgets for DHC after 2017 (Bergen Kommune, 2018). The findings indicate a certain lack of understanding and actualization of the gains related to this change, which has contributed to a less successful project from a financial point of view. The gained goals however, seemed to have been achieved without much prior communication about them. As previously mentioned, the majority of the other gains would be achieved as a direct consequence of the employees using the MO application. Therefore, the management focus on using the MO application rather than focusing on these goals does not seemed to have had negative impact on achieving them. Therefore, our findings regarding the achieved goals suggest that communication goals are not an absolute prerequisite for achieving certain types of goals. The middle managers focus on making the employees use MO was however not a means to an end. It was the goal itself for them, therefore the change objectives that were not achieved by doing this were not focused on.

5.2.2 Top management involvement

The communication of goals and visions to the employees are the middle managers responsibility as they are the link between the top management and the employees. We find however that the directives and communication from the top management had been deficient and made the middle managers role as conveyor of these goals difficult. The top management must enable and prepare middle managers for the task of being change managers. From our findings we see that this task had not been done properly. We know from the literature that ensuring that managers have the capacity and competence to drive and lead the changes is crucial for success (Fernandez and Rainey, 2006). Thus, providing the relevant training and information to middle managers is instrumental for achieving a successful organizational change. In the findings we observe that the employees and managers have undergone training with the intention of enabling them to use the MO-application, but managers have not received any training or coaching on how to implement change or lead change processes.

The implementation of MO is shown to be the largest digitalization project the department managers have undertaken in their years as manager for their respective departments. The managers had therefore no prior experience in conducting these types of organizational change. This lack of experience and training which is described as a critical factor in organizational change theory, may have contributed to making the departments less prepared for the change and reduced the ability to fully reaching the potential of MO and its goals. Managers were neither given training in change management or, as pointed out earlier, given enough information and concrete guidelines on essential parts of the goals for the project. Information and communication of the characteristics of change, its goals and implications are found to be an important factor in IS implementation (Dong, 2001).

Top management commitment and the ability to advocate where the change is supposed to be headed, is highlighted in central literature on organizational change as critical factors for a successful change (Kotter, 1995; Lewin, 1951). Our findings suggest that there has been a lack of commitment from top management. We saw that the communicated goal was that the employees were using the application. Yet using the application is a means to an end as the goals for the change specified by Bergen Municipality were the ones described earlier in this chapter. This was not clearly communicated to the middle managers. Besides providing the hardware and communicating that MO was supposed to be implemented within a given date, top management have not been much involved. We believe the lack of commitment in combination with lack of skill building in managing change of managers has weakened the ability for the middle managers to communicate and lead the change optimally in their respective departments.

5.2.3 Threats to anchoring the change

Usage of MO brought with it the need for the employees to take certain additional steps to overcome its technical difficulties. This presents itself as an extra burden to the employees and management which created frustration towards MO. The findings show that the threats towards anchoring the change stronger in the department and experiencing the promised gains is connected to the difficulties experienced when using MO. Lack of functionality, lack of stability in the system and lack of quality of the mobile devices are the identified issues experienced by employees. These issues led the employees to develop different ways in which to write reports and techniques for working around the experienced issues. This has led to the employees spending more time than before on some aspects of their work, leading to frustration. Employees must use the computer and mobile systems in combination to be able to do their tasks and this complexity has in some cases lead to less reporting and different rates of reporting.

Employees and management further believed that the implementation of MO would provide them with a tool that could save time and be more efficient. In some areas like the morning sessions and time spent on acquiring information on patients this is true, but for the general workflow employees expressed no significant time saved by utilizing the new system. The findings suggest that the implementation and post-implementation phase has seen frustration and behaviours that has impeded the desired outcome of the change. We know from theory that stress and dissatisfaction related to technology change and technostress can influence attitudes and how well a change is met and executed by the employees (Ragu-Nathan et al., 2008). It is observed that the technical and functional issues with MO has become better over time. This is consistent with other studies that have suggested that employees need a lot of time to adapt to the implementation of new information systems (Sidek and Martins, 2017). Other studies in similar contexts have also found that work processes would take more time immediately post-implementation, followed by a slight decrease once proficiency with the system is achieved (Korst et al., 2005; Wong et al., 2003). We saw from the findings that the employees' attitude towards the functionality of MO grew more positive over time and they believed that the desired functionality would arrive. However, their attitudes towards the mobile devices became more negative with time. As the software of MO is developing and improving over time, they experience that the hardware is not being replaced quickly enough. Furthermore, the previously experienced gains which were discussed in the chapter are reliant on both functioning software and hardware. Therefore, if the tools stop working, the gains experienced would cease. This puts pressure on the managers to continuously work on further anchoring the change in the department and identifying threats as the experienced gains could be threatened by misfunctioning tools. This issue has been experienced by both departments and is identified by both middle managers and employees. Yet, perhaps due to the bureaucratic nature of the public sector it seems that it has been difficult to solve this issue as it has not received proper response from top management.

5.2.4 Summary

We have seen that both departments did not appropriately communicate the goals and visions of the proposed organizational change to the employees. The lack of communication originated from top management as we saw that they did not put proper effort on communicating these goals to middle management. Neither were middle management given any particular training in change management even though none of the department managers had any previous experience in implementing a digitalization effort. However, given time, we have seen that both departments have been achieving most of their non-financial goals set by top management. The goals were met as a consequence of the employees using MO in their daily lives. There does not seem to be any indication however that the financial goals that were set by top management have been met. These results provide a varied response as to how important communication goals are. As there has been a lack of communication of all the goals, some goals have been achieved, while others not. These results might indicate that some goals have characteristics that require communication to be achieved, while others are not dependent on it. Furthermore, we saw that both departments have experienced the same threats towards further anchoring the change in the department. Even though the change has led to a new somewhat stable status quo the digitalization effort has brought with it constant incremental change. This comes in the form of degradation in hardware and new software updates, which tests the managers ability to continue to anchor the change in the department and reap the gains which MO is supposed to provide.

6 Conclusion

In the introduction of our study, we highlighted how digitalization is a trend on the rise which has large variation in its success rate. In our study we have seen a digitalization effort being conducted with varying degree of success, furthermore we have seen that the employees believe more such efforts will be introduced in the future. They agree with the narrative of the industry and government that these are the type of changes which the healthcare industry will experience in the coming years. They have however also recognized that these digitalization efforts do not come without its challenges, challenges which must be addressed to ensure the future success of the coming digitalization efforts. To understand this more we conducted this study with the following question in mind:

"Why might the result of a digitalization process vary within the same organization in the public healthcare sector?"

We have seen that within the departments the degree of cynicism towards the change expressed varied greatly. The reasons for this scepticism were partly legitimate as it could be seen as a precursor for the problematic initial implementation phase which followed. The concerns regarding having the necessary capabilities were not addressed directly enough, and therefore caused problems. We saw how it is important that when introducing a tool which the employees will rely on to conduct their work activities, there must be a training scheme which provides a guarantee that they will be able to use it. We saw how differing implementation can create a lasting impression of the change which affects the attitude object after implementation. Communication of goals and visions has been discussed and from our results it seems to be inconclusive on how this has affected the change. We saw that there has been a lack of communication, yet this has not affected all the goals uniformly. Furthermore, we have seen how the digitalization effort have changed the status qoue to a new everyday which involves incremental changes at intervals due to changing software and malfunctioning hardware. The managers responsibility to continuously anchor the change to ensure that the value of MO is being provided is essential to ensure that the change stays permanent. What constitutes a successful change has been discussed. Furthermore, even though the departments have experienced several challenges, the employees see the value of MO and in some aspect, both departments have achieved the same degree of success. Both departments have achieved most of their non-financial goals. However, the time spent on achieving these goals varied between departments as department A achieved these gains more quickly than department B. Our results do not seem to indicate that either department have experienced any success in achieving their financial goals. We want to conclude with that digitalization, and change in general, is a quite complex process. From its initial phases to the post implementation and assessing its success there is many layers of complexity and contextual factors which must be reviewed to fully understand the change. We hope this study has provided you the reader with new insight on the process of digitalization and in the following section we are going to address some implications for management based on our findings in this study.

6.1 Implication for management

Based on our findings and the following discussion we have identified some key moments that management must address when implementing a likened change. In the following section we are going to address these key moments which management must address, these will be cynicism, capability preparation and goal setting.

6.1.1 Cynicism

We saw how cynicism towards change was a prominent factor that differed between the departments which affected the degree of resistance towards change the department experienced. We saw also how this cynicism was due to a natural tendency to be sceptical and the employee's insecurities regarding their ability to use the digital tool which was introduced. The employee's natural sceptical tendency was somewhat removed as they saw the value that MO added in due time. The insecurity regarding the digital tool was not properly addressed however, and therefore the fears that sources the cynicism ended up being legitimate. In future change endeavours management must identify the sources of cynicism and address these issues to their required degree. We can see how cynicism does not necessarily need to function as a negative force towards the change. In this context the cynicism towards the digital tool acted as a precursor to what issues would arise if not focused on. Therefore, management must put effort into understanding the reasons to their employee's reaction and address these concerns accordingly. We saw how management applied training yet, the training was not satisfactory in providing the necessary capabilities and quenching the source of cynicism.

6.1.2 Providing the necessary capabilities

From the study we have seen that just providing a form of capability training is not sufficient. The provided training must adhere with the amount of training required. Managers must therefore map their employee's capabilities better and implement compatible training which addresses this lack of capability. We saw also how the capabilities within the department varied greatly, and therefore the training provided must reflect this. From the interviews we saw that the provided training did a fine job of introducing the employees to what the MO application can do, yet not effective in regard to how to do it. We saw that most of the employee's issues were not lack of information regarding what the MO application could do, but how they could use the app. Therefore, it is important for managers to make sure that the training provides the intended effect. Furthermore, issues regarding the coverage could have been avoided if the management had tested the MO application on a given set of employees beforehand and identified the areas which are problematic. Such a proactive approach would have identified the problematic areas and helped provide a smoother launch. The study also finds that top management has insufficiently provided the middle managers with relevant capabilities of leading a change process. Top management has relied on the middle managers current ability and skills and underestimated the advantage of giving middle managers context relevant training. The MO project is one of the largest technology implementations the departments has seen in years, and the lack of building capacity and competence on change leadership among middle managers contradicts what theory suggest as conditions for successful organisational change.

6.1.3 Goal setting

We find that most of the goals of the project are largely met. The MO-system provides a solution that caters to the needs expressed by the employees and has created better solutions for handling patient data security, access to information and an improvement in logistical challenges. Part of the success of these goals are that they align with the expressed needs of the employees. The technology is also able to rapidly show benefits as it is customised to solve these needs, further excelling the attainment of qualitative goals. We have however indicated that there has been a lack of communication of concrete goals for how the resources should be better utilized and financial gains realized. The discussion has pointed out that top management has inadequately communicated and concretized goals to the department managers. Which in turn has led to a weakening of connection of goals and actions that is necessary to reach the goal of capitalizing on the gains estimated by Bergen Municipality and the top program management.

6.2 Weaknesses and implication for further research

Our study's strengths lie in its limitation, we have focused primarily on the individuals closest to the change and who were most affected by the proposed change. The strength to our approach is that we were able to attain deep insight into how the change process was experienced by the employees and middle-management which had the responsibility of implementing the change in the departments. It also meant that we were able to gather information and experiences for a longer time perspective. Our sample restriction does however raise potential issues in regards to the sample size. We conducted our study based on the response of two managers and twelve employees from two different departments. The sample is purposive, and thus selected based on the interviewee's ability to provide insightful information that is relevant to the case. We wanted to gain insight from individuals who had been part of the implementation process in a given unit and still worked there today. This narrowed down our sample, but we feel nonetheless that the study reached sufficient saturation and provided the necessary information to build a justified analysis and discussion.

Furthermore, there is clear limitation to what respondents can recollect and how accurate their recollected feelings and attitudes are conveyed to the researchers, this is often referred to as recall bias. We have consistently had this limitation in mind and have, to the best of our ability, taken this into consideration when conducting the interviews and analysis. Our study is limited to the experiences and viewpoints of the individuals at the lowest levels of the organization. Even though we have had a connection with upper management, the information gathered was contextual and including them in interviews would be outside the scope of this study. The selection of sample size also reflects pragmatic reasoning, mainly due to the scope and time limitations of a master's thesis.

Our study has focused on two departments, which share many of the same organizational prerequisites but with differing results. Therefore, the results of our study could be interpreted as contextual and may not contribute to understanding digitalization in settings which differ from our case. However, our study was intended to primarily focus on digitalization in healthcare, with a focus on gaining insight on implementation processes. We hope that the insights gained from this study help practitioners and researchers in understanding the phenomenon of digitalization in healthcare and the prominent factors that can lead to successful implementations of digitalization.

In future research the study could be replicated with the modification of increasing the scope of included departments. From our initial review and research for case studies the opportunity to include more departments in the study emerged, yet due to time and manpower limitations we had to limit our study to two departments. We believe that a study with a wider scope of departments which share much of the same structural prerequisites can help to identify more of the phenomenon's that affect the implementation process.

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Appendix

A1 Appendix 1, Interview guides

INTERVIEW GUIDE EMPLOYEES

Mapping of the attitude (Attitude formation)

- When did you hear about this change and how do you feel about how it was introduced to you?
    - How was your attitude to this change when it was introduced?

- When you first heard about this change, what consequences did you think this would have for your workday?

Emotions and practical consequences

- How much information did you get about what this change would entail?
    - How clear was the management in the information that was communicated?
- Was someone delegated extra responsibility by someone in the department for the implementation of MO
- Did you get the necessary information you needed to understand what the MO application entailed?
- Was the purpose of the implementation of MO clearly communicated?
- When you heard about MO, were you confident that the department would be able to implement this change?
- How did you feel about the change when you first heard about it?
- How strongly did you feel about the change that was proposed?
    - If strong feeling / weak feeling / ambivelent feeling, why did you feel that way?
- How did you feel the others in the department reacted when they heard that mobile care should be implemented?
- Did you experience that there were several different opinions regarding the change and were these opinions polarized?
- Was there any particular aspect of the change you felt the staff focused on the most?
- Can you say whether your attitudes around the project changed during or after the implementation process?

The digitalization factor

- Have you been involved in the implementation of such types of projects before?
- What expectations did you have for the technology, in terms of functionality?

    - Was there a big discrepancy between what you expected and what functionalities the technology had?

- What challenges with MO did you respond to the most?
    - Can you identify any stressors that were increased as a result of MO?
    - Were there any stressors that were reduced?

- Did you experience unforeseen benefits?

- Did you experience that you received the necessary training to use mobile care and achieve the benefits that the program intended to achieve?

- How was the follow-up of the progress of the project after the technology was implemented?
    - Did you get the necessary follow-up and from whom?

- What do you think about the amount of technology you use during the workday?
    - Do you feel that there is too much or too little technology?

- What are your thoughts on the ever-increasing technology in healthcare?
    - Do you think mobile care represents this type of development?

- Has the mobile care project made you more positive about implementing new technology in the future?

INTERVIEW GUIDE MANAGER

Pre implementation, strategy and goals

- How involved was your department with the development of MO?

- Did you get enough autonomy (responsibility and freedom) to lead as you thought was best?
    - How was this defined?

- What requirements were set in connection with this project?
    - To what extent did you feel it was necessary?

- What did you see as your main task in connection with the implementation of MO?

- What goals have you set for your department, in connection with the implementation and implementation of MO?
    - Are these goals you have received from "higher office" or have you been involved in preparing it yourself?
    - How clear do you think these are?
    - Did you have the impression that the employees understood the objectives?

- What did you do to set a direction or motivate your employees to achieve the goals of the project?

Involvement

- Was there any form of role clarification or delegation of responsibilities in connection with, or in advance of, the project?

- How are employees involved and made responsible for achieving the objectives of the project?

Implementation phase

- Can you describe the implementation phase?
  - Can you describe what the first time with the new solution was like?
  - Did you face any problems or challenges – elaborate

- What follow-up did you get from the top management?

Training

- Can you tell us about how the training worked?

- What training was given to your employees?
  - What did the employees think about this?

- Do you feel that you yourself received good enough training and/or information to be able to lead your department through the implementation and incorporation of MO?
  - Training regarding change management and the technology itself
  - Did you have previous experience with such implementation processes?

Percieved change in employees

- Can you describe how you interpret your employees' digital knowledge and competence, in general?
  - Are there major differences between employees' digital knowledge?
  - Has this been a problem?

- Can you describe the willingness to change among your employees?
  - Have conflicts and/or disagreements arisen?

Communication and feedback

- Did you report or report on how MO worked?
  - What is reported?
  - Is this still done?

- How has the communication between you and your manager been in connection with the project?

- Do you have platforms where you can help change the solution or provide feedback on how it works in practice?

- To what extent were needs, requirements or solutions changed during the project as a result of learning within the project?
    - Do you feel their feedback is heard?

- Have you received any kind of follow-up, after the implementation?

- What do you think is the biggest advantage of such a system?

- Do you feel that the project has given your department gains in any form?

- Do you think home nursing implements enough ICT solutions or do you want further solutions of this type to be introduced?

INTERVJUGUIDE ANSATTE

Kartleggelse av holdningen (Attitude formation)

- Når fikk du høre om denne endringen og hva føler du om hvordan den ble introdusert til dere?
  - Hvordan var holdningen din til denne endringen når den ble introdusert

- Når du første gang fikk høre om denne endringen. Hvilke konsekvenser tenkte du dette ville ha for din arbeidsdag?

Følelser og praktiske konsekvenser

- Hvor mye informasjon fikk dere angående hva denne endringen her vil innebære?
  - Hvor tydelig var ledelsen i informasjonen som ble meddelt
- Ble noen delegert ekstra ansvar hos noen i avdelingen for implementasjonen av mobil omsorg

- Fikk du den nødvendige informasjonen du trengte for å forstå hva mobil omsorg-programmet innebar

- Var hensikten med implementeringen av MO tydelig kommunisert?

- Når du fikk høre om MO, hvordan var tiltroen din til at avdelingen ville greie å implementere denne endringen?

- Hva følte du om endringen da du først fikk høre om den?

- Hvor sterkt følte du om endringen som ble foreslått?
  - Hvis sterk følelse / svak følelse /ambivalent følelse, hvorfor følte du det slik?

- Hvordan følte du de andre i avdelingen reagerte når de fikk høre om at mobil omsorg skulle bli implementert?

- Opplevde du at det eksisterte flere ulike meninger angående endringen og var disse meningene polariserte?

- Var det noe spesielt aspekt ved endringen du følte personalet fokuserte mest på?

- Kan du si om holdningene dine rundt prosjektet endret seg under implemetnasjonsprosessen eller i ettertid av den?

Digitaliseringsfaktoren

- Har du vært med på implementering av slike typer prosjekter tidligere?

- Hvilke forventninger hadde du til teknologien, funksjonalitetsmessig?

  - Var det stor avvik mellom hva du forventet, og hvilke funksjonaliteter teknologien hadde?

- Hvilke utfordringer med mobil omsorg var det som du reagerte mest på?
  - Kan du identifisere noen stressmomenter som ble økt som en følge av mobil omsorg?
  - Var det noen stressmomenter som ble redusert?

- Opplevde du uforutsette fordeler?

- Opplevde du at fikk den nødvendige opplæringen for å ta i bruk mobil omsorg og oppnå de gevinstene som programmet hadde intensjon om å oppnå?

- Hvordan var oppfølgingen av fremgangen i prosjektet etter at teknologien var implementert? Fikk dere den nødvendige oppfølgingen og fra hvem?

- Hva syns du om mengde teknologi dere bruker i løpet av arbeidsdagen?
  - Føler du at det er for mye eller for lite teknologi?

- Hvilket tanker har du i henhold til den stadige økningen av teknologi i helsevesenet?
  - Syns du mobil omsorg representere denne type utvikling?

- Har mobil omsorg prosjektet gjort deg mer positiv til implementering av ny teknologi i fremtiden?

INTERVJUGUIDE LEDER

Pre implementasjon, strategi og målsettinger

- Hvor involvert var din avdeling med utviklingen av produktet Mobil Omsorg?

- Fikk du nok autonomi (ansvar og frihet) til å lede slik du mente var best)?

  - Hvordan var dette definert.

- Hvilke krav ble stilt til deg i forbindelse med dette prosjektet?
  - I hvilken grad følte du det var nødvendig?

- Hva så du på som din hovedoppgave i forbindelse med implementeringen av Mobil Omsorg?

- Hvilke målsettinger har du satt til din avdeling, i forbindelse med implementering og gjennomføring av Mobil Omsorg-prosjektet?
  - Er dette målsettinger du har fått fra "høyere hold" eller har du vært med på å utarbeide det selv?
  - Hvor tydelig synes du disse er?
  - Hadde du inntrykk av at de ansatte forsto målsettingene?

- Hva gjorde du for å sette en retning eller motivere dine ansatte til å nå målene med prosjektet?

Involvering

- Var det noen form for rolleavklaring eller delegering av ansvar i forbindelse med, eller i forkant av, prosjektet?

- Hvordan blir medarbeidere involvert og ansvarliggjort for å oppnå målsettingene med prosjektet?

Implementeringsfasen

- Kan du beskrive implementeringsfasen?
  - Kan du beskrive hvordan den første tiden med den nye løsningen var?
  - Møtte dere på problemer, utfordringer -utdyp

- Hvilken oppfølging fikk dere fra ledelsen

Opplæring og trening

- Kan du fortelle litt om hvordan opplæringen fungerte?

- Hvilken opplæring ble gitt til dine ansatte?
  - Hva syntes de ansatte om denne?

- Føler du at du selv fikk god nok opplæring og/eller informasjon til å kunne lede din avdeling gjennom implementeringen og innarbeidelsen av dette?
  - Om endringsledelse og selve teknologien
  - Hadde du tidligere erfaringer med slike implementeringsprosesser?

Opplevd endring blant ansatte

- Kan du beskrive hvordan du tolker dine ansattes digitale kunnskap og kompetanse, generelt?
  - Er det store forskjeller mellom de ansatte digitale kunnskap?
  - Har dette vært et problem?

- Kan du beskrive endringsviljen blant dine ansatte?
  - Har det oppstått konflikter og/eller uenigheter?

Kommunikasjon og feedback

- Rapporterte eller rapporterer du på hvordan MO fungerte/-er?
  - Hva rapporteres?
  - Gjøres dette fortsatt?

- Hvordan har kommunikasjonen mellom deg og din leder vært i forbindelse med prosjektet?

- Har dere plattformer hvor dere kan bidra til å endre løsningen eller komme med tilbakemeldinger på hvordan den fungerer i praksis?

- I hvilken grad ble behov, krav eller løsninger endret underveis i prosjektet som et resultat av læring innad i prosjektet?
    - Føler du deres tilbakemeldinger blir hørt?

- Har dere fått noen form for oppfølging, etter implementasjonen?

- Hva mener du er den største fordelen med et slikt system?

- Opplever du at prosjektet har gitt din avdeling gevinster i noen form?

- Syns du hjemmesykepleien implementerer nok IKT-løsninger eller ønsker at det burde introduseres ytterligere løsninger av denne typen?

A2 Appendix 2, Interview consent form

Declaration of consent for research project

Master’s thesis Mobil Omsorg

Declaration of consent for an interview about Mobile Care in connection with a master's study at the Norwegian School of Economics, autumn 2020.

Researchers: Espen Tronstad, Shahez Shwana

Supervisor: Professor Rune Lines, Department of Strategy and Management, Norwegian School of Economics

It is voluntary to participate in the project. If you choose to participate, you can withdraw your consent at any time without giving any reason. All your personal information will then be deleted. It will not have any negative consequences for you if you do not want to participate or later choose to withdraw.

The information is anonymised when the project is completed / the assignment is approved, which according to the plan is December 2020. We process the information confidentially and in accordance with the privacy regulations.

We process information about you based on your consent. I hereby confirm that I have been informed about the framework surrounding the interview conducted by Espen Tronstad and Shahez Shwana. I hereby give my consent to the data collection in connection with the master's thesis at the Norwegian School of Economics in the form of:

• Audio / video recording of the interview.
• Transcript of the interview in its entirety.
• That the researchers in the study and supervisor have access to what is written down in its entirety after transcription.
• Citation in anonymised form for use in the master's thesis.
• Participation in the interview

I hereby confirm my voluntary participation in the study, and that I have been informed that I can withdraw from participation in the event of discomfort experienced during the interview.

Place and date: Signature interviewee:

....

Samtykkeerklæring for forskningsprosjektet

Masteroppgave Mobil Omsorg

Samtykkeerklæring for intervju om Mobil Omsorg i forbindelse med masterstudie ved Norges Handelshøyskole, høsten 2020.

Prosjektansvarlige: Espen Tronstad, Shahez Shwana

Veileder: Professor Rune Lines, Institutt for Strategi og Ledelse, Norges Handelshøyskole

Det er frivillig å delta i prosjektet. Hvis du velger å delta, kan du når som helst trekke samtykket tilbake uten å oppgi noen grunn. Alle dine personopplysninger vil da bli slettet. Det vil ikke ha noen negative konsekvenser for deg hvis du ikke vil delta eller senere velger å trekke deg.

Opplysningene anonymiseres når prosjektet avsluttes/oppgaven er godkjent, noe som etter planen er desember 2020. Vi behandler opplysningene konfidensielt og i samsvar med personvernregelverket.

Vi behandler opplysninger om deg basert på ditt samtykke. Jeg bekrefter herved å ha blitt informert om rammene rundt intervjuet av Espen Tronstad og Shahez Shwana. Jeg gir med dette mitt samtykke til datainnsamlingen i forbindelse med masteroppgaven ved Norges Handelshøyskole i form av:

- Lyd-/videoopptak av intervjuet.
- Transkribering av intervjuet i sin helhet.
- At forskerne i studien og veileder har tilgang til det nedskrevne i sin helhet etter transkribering.
- Sitering i anonymisert form til bruk i masteroppgaven.
- Deltakelse i intervjuet

Jeg bekrefter med dette min frivillige deltakelse i studien, og at jeg er informert om at jeg kan trekke meg fra deltakelse ved opplevd ubehag under intervjuet.

Sted og dato:	Signatur intervjuobjekt
....	....