BI Norwegian Business School - campus Oslo

GRA 19703

Master Thesis

Thesis Master of Science

A study of artificial intelligence in relation to organizational change

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Start:	15.01.2020 09.00
Finish:	01.09.2020 12.00

Acknowledgements

First, we would like to express our sincere gratitude to our thesis supervisor, Tom Rosendahl, for his support, guidance, and feedback. We are grateful that he was genuinely interested in the topic, always available and flexible. We appreciate that he provided us a learning environment where we could carry out our research interest while also feeling supported.

We would like to thank the organizations where we conducted our data collection, Claims Link, and Aibel. We are grateful to the interviewees who spent their valuable time answering our questions and providing us valuable insight and information. Moreover, we would like to thank them for being honest and sharing their perspectives and stories. We want to thank all the people we have talked with about the topic during our study, which has contributed to information and insight.

Lastly, we thank our family, friends and partners for their moral support and inspiring words. Finally, we would like to thank each other for always encouraging and being interested in each other's thoughts and ideas and for great discussions throughout the process.

Content

Abstract

The pace of change in the evolving business environment has never been higher, and as a part of the broader automation movement, artificial intelligence (AI) will have a fundamental impact on the way we do business. This thesis aims to gather knowledge of how AI is influencing change management and organizational changes. A conceptual model based on the research question and the theoretical review is developed, consisting of the following categories: goals and strategy, engagement, and impact, and reactions. The model serves as a starting point for this thesis and the data collection. Thus, this thesis aims to gather knowledge of how artificial intelligence is influencing change management and organizational changes, mainly how factors such as goals and strategy, engagement, and impact, and reactions influence the effect of change concerning digitalization within artificial intelligence.

To explore and examine our research problem, we conducted a qualitative study with explorative research design and in-depth interviews as a method. We did a pre-project to gain more information, understanding, and progress about the topic in general. The study is conducted at two different companies, Claims Link, an independent settlement company, and Aibel, a leading service company within oil, gas and offshore wind industries. We wanted to gain insight into the implementation of a digital co-worker called “Sødde” at Claims Link, and the implementation and development of a logistic based AI system called Master Material Data (MMD) at Aibel.

The findings indicate that focusing on goals and strategy and engagement might succeed in having motivated and committed employees and positive reactions and emotions, and further resulting in positive effects regarding the implementation of digitalization within artificial intelligence. Thus, this study provides insight into change management and the broader automation movement and the implementation of artificial intelligence. Theoretical and practical implications and limitations are also discussed.

1. Introduction

The pace of change in the evolving business environment has never been higher, and it is affecting all organizations (Todnem By, 2005). Globalization, robotics, and artificial intelligence are change forces that are challenging and transforming the traditional way of working (Baldwin, 2019). The interest in artificial intelligence, also known as AI, has increased tremendously in recent years (Deloitte, 2019a). AI is technology that employs capabilities such as insight, knowledge, and perception to solve defined tasks. Humans were previously the only ones capable of having these cognitive capabilities before AI was introduced (Davenport, 2018). The central focus is on adaptive processes and the introduction of entirely new, innovative ways of doing business (Daugherty & Wilson, 2018).

As a part of the broader automation movement, artificial intelligence will have a fundamental impact on the way we do business (Burgess, 2018). It will have various implications for work that leaders must prepare for (McKinsey&Company, 2017). Organizations worldwide are implementing technology with AI, and a recent study from Accenture shows that Scandinavia is in a very early stage (Kirkhaug, 2017). There are discussions about how to respond to these changes, prepare workers for the 21st century and implement and adopt it (Baldwin, 2019). For organizations to survive in an increasingly evolving and competitive environment, changes must be managed successfully (Todnem By, 2005). However, change processes are often quite challenging to operate, and few companies manage to carry out the change initiatives successfully (Beer & Nohria, 2000; Kotter & Schlesinger, 2008).

The top management usually guides a remarkable change, and a planned process is often top-down and relies thoroughly on management's role (Beer & Nohria, 2000). However, major changes might also be initiated from lower levels (Beer, 1988; Belgard, Fisher, & Rayner, 1988), and there are different strategies for managing change successfully. Moreover, researchers have developed several theories consisting of various steps of how to manage change successfully (Stouten, Rousseau, & De Cremer, 2018).

However, changes within organizations can create different reactions imposed upon the employees and the managers. A typical pattern of reactions involves the four stages denial, anger, mourning, and adaption (Yukl, 2013). Currently, a typical response to AI changes for managers is both fear and expectations concerning AI and its influence on work. Notably, Nordic managers are more skeptical compared to other countries (Kolbjørnsrud, 2017). Furthermore, population surveys show concerns about the technological changes we are facing (Bjørkeng, 2018). In order to lead change, managers need to tailor the strategies to the type of resistance they will face (Kotter & Schlesinger, 2008).

There is a lot of research on artificial intelligence in general, although there is currently a lack of research on how artificial intelligence will influence management (Kolbjørnsrud, 2017). Therefore, it is necessary to do more research on AI as this will be used more in the future, and a type of new technology that offers innovative opportunities in organizations, as well as some challenges will occur along the way. We want to do further research on whether implementation and more use of AI will provide the same challenges and opportunities as implementing the other technological implementations for leaders and organizations or new ones.
As several companies have started to implement information technology using AI, this is a particularly interesting topic for us who are now completing the MSc in Business with a major in Leadership and Change. By completing a master thesis on technology such as AI, it will be advantageous for us to enter as graduates, knowing several opportunities and challenges associated with AI. For this reason, this master thesis reflects research about how AI will influence change management and organizational change.

1.1 Research question

The purpose of our master thesis is to gather knowledge of how artificial intelligence is influencing change management and organizational changes. We have formulated a research question this thesis will seek to answer;
"How do factors such as goal and strategy, engagement, and impact and reactions influence the effect of change concerning digitalization within artificial intelligence?"

1.2 Outline of the thesis

To answer the research question, the rest of the structure of the thesis is as follows. The second part of the thesis consists of a theoretical review to get an overview of the current literature about artificial intelligence and change management, together with the purpose of the thesis and a conceptual model. The third part consists of the methodological choices made, including the selection of strategy and design, pre-project, data collection method, interview guide, organizations of investigation, participants, data collection process, data analysis, and ethical considerations. In the fourth part of the thesis, we present our analysis and findings. Finally, in the last section, we present a summary of our findings and discuss our results before highlighting limitations and directions for future research.

2. Theoretical review

An essential initial step in business research is to conduct a literature review. This process involves identifying relevant information and gives a framework for making sense of what you see based on existing literature and research on this field (Bryman & Bell, 2015). Therefore, we will review the existing knowledge about change management and artificial intelligence in general. Furthermore, we will look into the current literature on how AI influences organizations and management.

2.1 Change management

Organizational change is both a complex and nonlinear process (Coghlan, 2000; Doyle, Claydon, & Buchanan, 2000), and happens in response to significant shifts in the environment at both group level and individual level. Otherwise, organizations might also continue to change as a result of planned efforts to gain higher profitability, effectiveness, and quality (Whelan-Berry, Gordon, & Hinings, 2003). Despite the growing attention of organizational change in textbooks, other scientific, management literature, and research, many of the efforts of corporate change management fail or do not fully meet stated goals or objectives (Elving, 2005; Kotter, 2012b). Unsuccessful change efforts may result in several adverse outcomes, such as organizational ineffectiveness, customer dissatisfaction, and wasted resources. Since we face a time of unprecedented pace and magnitude of change, both managers and employees need to fully understand organizational change processes to provide an effective and efficient implementation of organizational change (Whelan-Berry et al., 2003).

For organizations to survive in an increasingly evolving and competitive environment, changes must be managed successfully (Todnem By, 2005). Moreover, managers need to act rapidly and make decisions more quickly to have a competitive advantage (Ewenstein, Smith, & Sologar, 2015). Thus, managing change is considered one of the essential skills of managers (Todnem By, 2005). According to Moran and Brightman (2000), change management involves continuously renewing the structure, capabilities, and direction of the organization, and to meet the changing

needs of customers. Although managing change is one of the most important responsibilities, it has been stated that it is one of the most difficult ones (Yukl, 2013). Change processes are often quite challenging to manage, and few companies manage to carry out the change initiatives successfully. For instance, research shows that two-thirds of change initiatives such as changing the company's culture, implementing new technology, or downsizing fails (Beer & Nohria, 2000). For managers to deal with change, they must understand the nature and process of change (Kirkhaug, 2017), and further manage and identify the need for change (Todnem By, 2005).

2.1.1 Types of Change

Organizational change has been categorized and proposed in numerous ways. Research done by Porras and Silvers (1991) suggests that an essential emerging contrast in change research is the distinction between *continuous change* and *episodic change*. Continuous change tends to be emergent, self-organizing, evolving, and cumulative, while episodic change tends to be discontinuous, intentional, and infrequent. The types of change have different approaches to Lewin's (1951) Three-step Model of Change. The episodic change follows the steps unfreeze-transition-refreeze, while continuous change follows the steps freeze-rebalance-unfreeze (Lewin, 1951; Weick & Quinn, 1999). There are different perspectives on how change agents should function concerning the two types. According to Weick and Quinn (1999), in continuous change, the agent role is to be a sense maker and redirect change, while in episodic change, the focus of the change agent is to create change and be the first mover.

According to change management literature, there is still disagreement regarding the most appropriate approach to changing organizations. However, the two main strategies to change management includes *planned change* and *emergent change*. The planned change approach is principally based on the work of Kurt Lewin (1951). It views organizational change as a process that moves from one "fixed state" to another through several structured pre-planned steps, but also referring to Lewin's Three-

Stage Model of Change. This approach perceives that any new behavior can be adopted successfully if the old one has been discarded first and builds on the episodic approach (Bamford & Forrester, 2003; Liebhart & Garcia-Lorenzo, 2010). On the contrary, the emergent approach is somewhat primarily fluid, less dependent on planning, and occurs more naturally. This approach can also be described as unpredictable, often unintentional and iterative, and appeals more to a continuous change (Bamford & Forrester, 2003; Weick & Quinn, 1999).

2.1.2 Implementing Change

There are different strategies on how to successfully manage change, and researchers have developed several theories consisting of various steps of how to manage change. A description and comparison of well-known and conventional approaches can give further insight into the existing research of the implementation process. Kotter's Eight-Steps Change Model (1996) and Lewin's Three-Stage Model of Change (1951) can help organizations prepare and manage change effectively and provide steps throughout the change implementation (Stouten et al., 2018). Stouten et al., (2018) compare these two models by integrating existing prescriptions with scientific evidence. Lewin´s initial phase "unfreezing" includes establishing a change vision and developing a change plan. The goal is to make an awareness of the current level of acceptability as the employees understand that the old ways of doing things are no longer adequate (Yukl, 2013). Further, to define if something is hindering the organization in some way to implement the change. Compared with Kotter's (2012b) model, this phase includes two steps. The first consists of establishing a sense of urgency, so the employees are informed that change is essential. The second step involves forming a powerful guiding coalition, consisting of employees from different levels of the organization with the right expertise, high credibility, and good leadership skills. According to Kotter (2012b), this step will help make the employees to be committed and cooperate.

The second phase in Lewin's change process is transitioning to a new stage where the change is putting in place and modifying existing systems in support of the change

(Stouten et al., 2018). According to Kotter (2012b), the third step is the need for creating a change vision to provide a clear comprehension of what the change is all about and developing a change strategy to achieve the vision. In the fourth step, the manager must communicate the vision to clarify the vision for change, how it will affect and benefit each employee individually, and empower others to act on the vision. It is argued that it is essential to utilize every opportunity to communicate the new vision and strategy and create a sense of urgency to get acceptance of the employees. To maintain and keep enthusiasm and optimism about the change, the fifth step involves promoting short-term wins to reinforce the change implementation (Kotter, 2012b; Stouten et al., 2018).

Moreover, Kotter (1995) argues that change takes time, which is why it is essential to keep the employee's motivation and focus by highlighting progress and short-terms gains directly linked to the change. The third and final phase in Lewin's (1951) model involves the need to institutionalize the change and the consolidation of the change to align with other organizational structures and procedures, and this is what Lewin calls "refreezing" (Stouten et al., 2018). This phase is also reflected and argued in Kotter's last two steps which correspond to the same purpose as consolidating improvements and produce more change, as well as institutionalizing new approaches (Kotter, 2012b; Stouten et al., 2018).

2.1.3 Reactions of Change

Research describes a typical pattern of reactions to changes imposed upon people and involves the four stages denial, anger, mourning, and adaptation. The first reaction is to deny that a change is necessary, where the following is to get angry and search for someone to blame. The third stage is to stop denying and acknowledge what has been lost, mourn it, and finally accept the need to change (Yukl, 2013). However, resistance is considered a common reaction to change and as a natural response to organizational change processes (Bovey & Hede, 2001; Yukl, 2013). The degree of resistance, intensity, and duration will vary from situation to situation (Jacobsen, 2018) and from person to person. The reaction of change is individually and may be

based on experience with changes or traits such as self-confidence, risk tolerance, and openness to new experiences (Erwin & Garman, 2010).

There are various theories of reasons why an individual might oppose change. For instance, resistance might be related to the lack of trust and misunderstandings between the person initiating the change and the employee. Another reason is the lack of information and understanding of the implications that come along and the assumption that the change will lead to more costs than benefits. According to Ford & Ford (2009), resistance can further be a form of feedback from the employees with deep knowledge about the organization's daily operations. Other reasons might be the fear of not having the skills required with the change, simultaneously, some organizational change might need people to change too quickly (Kegan & Lahey, 2001; Strebel, 1996). Overall, resistance to change may occur as a reaction to change for various reasons and is a natural reaction by people who want to protect their self-interest and sense of self-determination.

Kotter and Schlesinger (1979) explain that managers need to tailor the strategies to the type of resistance they will face to lead change. A way of overcoming resistance involves facilitating better education and communication, more focus on emotional support, and increased participation and involvement. Encouraging any talk about change initiatives might keep a conversation about the change alive, even though it is complaints or heated discussion. Another approach to build engagement and participation is to ask employees for ideas on how to make change work. Using the ideas might stoke the employees' sense of ownership, enthusiasm, and commitment to change (Ford & Ford, 2009). Commitment and feeling of membership can be a motivator for the employees when embedding change in organizations (Shook, 2010). However, according to Roberto and Levesque (Roberto & Levesque, 2005), the art of making change initiatives stick might depend on how thoroughly the organization can facilitate enabling conditions, so the employees aspire ownership in the organizational changes. As a last resort, the managers or the people initiating the change, force people to accept a change by explicitly or implicitly threatening them with the loss of jobs, promotion possibilities, and so forth (Kotter & Schlesinger,

1979). Furthermore, it is essential to discuss a proposed change with the people who will be affected in order to learn about their concerns, involvement, and ideas about the best way to do it (Yukl, 2013).

2.2 Artificial Intelligence

In this part, a general introduction to artificial intelligence will be presented. First, there will be a brief history and explanation of the definition and concepts. Thereafter, a framework of artificial intelligence will be presented, and finally, a description of associated technologies.

2.2.1 History of Artificial Intelligence

Alan Turing, also known as one of the most outstanding scientists of the twentieth century, is considered as the father of computing and the grandfather of artificial intelligence. Turing introduced what has become known as the Turing Test in 1950, and the purpose was to determine if the machine was capable of thinking. The test consisted of two contestants, one human, and one computer, and an interrogator tasked with deciding which of the two contestants is human and which one is a machine. If a computer is capable of convincing a human that it is a real person, it will pass the test (Russell & Norvig, 2016).

The original birth of artificial intelligence was in 1956, where John McCarthy, the American computer scientist, used specific the term “Artificial Intelligence” for the first time at the Dartmouth Conference (Russell & Norvig, 2016). The research on AI has gradually developed since 1956 and includes times of acceleration and stagnation. The adversity in the field is commonly known as AI Winters (Burgess, 2018). More specifically, the influence of authorities and investors due to expectations that are not to be met (Telle, 2017). The result of over-inflated expectations and the withdrawal of funding led to the first AI Winter and AI stagnation between 1974 and 1980. The second AI Winter lasted from 1987 and 1993 due to the failure of “expert systems” to meet their over-inflated expectations. Computers were not well-developed enough to handle the enormous magnitude of data, and the governments and corporations

started to lose faith in AI (Burgess, 2018).

However, the breakthrough of the major artificial intelligence innovation began in 2012. Some of the highlights this year are related to the AI´s role for success in the computer and video game industry. An AI system founded by IBM called Watson used natural language processing algorithms to answer questions and replied in conversational English (Frankish & Ramsey, 2014). Natural language processing (NLP) is a form of AI that obtains meaning from human language to make a decision based on the data (Russell & Norvig, 2016), while algorithms are computer programs that derive inspiration from nature's intelligence. Although algorithms are more often abstractly expressed as program codes and based on one or more fundamental principles of nature (Tørresen, 2013). One of the current drivers of activity and interest in AI is the massive amount of data available. The amount of information created, known as big data, is rapidly increasing. The role of big data is essential, considering AI feeds of data and would be useless without it. Nowadays, people are generally experiencing AI as consumers. For instance, consumers have access to sophisticated AI, such as Siri, though Apple (Burgess, 2018).

2.2.2 Definition

Understanding artificial intelligence requires familiarity with the concept of natural intelligence. There are several proposed definitions of intelligence, and two of them are *"what people usually mean - the ability to solve hard problems*" (Minsky, 1988, p. 13) and "*a general mental capability that, among other things, involves the ability to reason, plan, solve problems, think abstractly, comprehend complex ideas, learn quickly and learn from experience"* (Gottfredson, 1997, p. 13). On the other hand, artificial is described as something that is human-made or non-human (Cambridge Dictornary, 2020).

Artificial intelligence, also recognized as AI, is becoming increasingly relevant for businesses, and in recent years, the interest has increased tremendously (Deloitte, 2019b). Despite the growing popularity and usage of AI, there is no clear definition

agreed upon (Nilsson, 2009). Different companies may not even operate from the same definition of the term even though the foundation is generally the same. Instead, the focus of AI shifts depending on the entity that provides the definition (Marr, 2018).

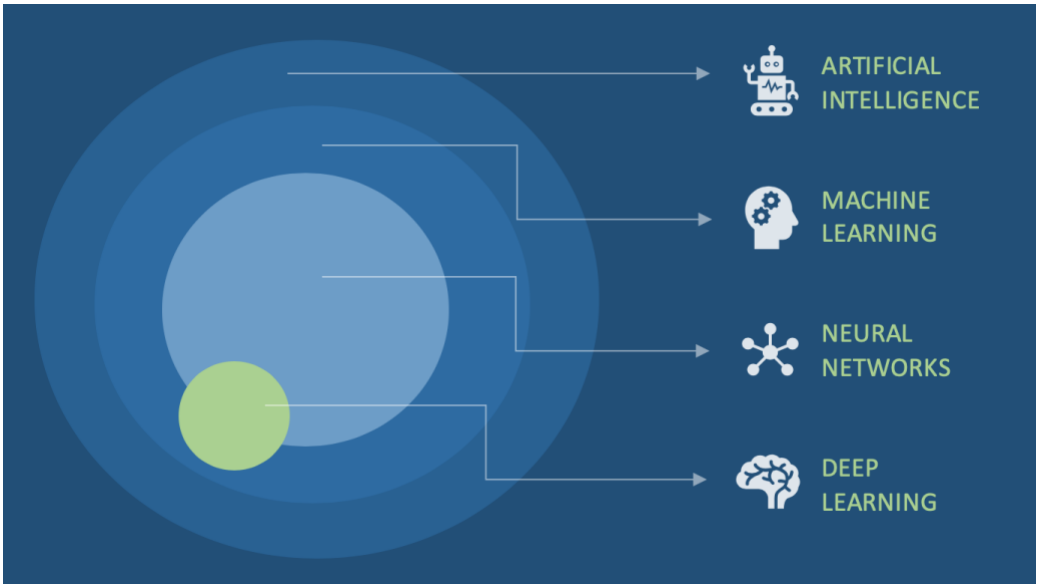
Artificial intelligence is a set of algorithms and can be defined as "the theory and development of computer systems able to perform tasks that normally require human intelligence» (Laurent, Chollet, & Herzberg, 2015), such as visual perception, decision-making, speech recognition, and translation between languages (Oxford Reference, 2020), hence a definition we have decided to use throughout our thesis. Further, algorithms can be defined as "a set of mathematical instructions or rules that, especially if given to a computer, will help to calculate an answer to a problem" (Cambridge Dictornary, 2020).

Machine learning (ML) is an essential part of the scientific discipline of artificial intelligence and has made the most significant progress in recent years (Bjørkeng, 2018; Burgess, 2018). Machine learning is about using techniques to enable the computer to gain experience from large amounts of data and make choices based on this knowledge without being told what to look for or to perform (Samuel, 1959), namely a set of algorithms that learn from and make predictions on data given structured data (Daugherty & Wilson, 2018). It involves adapting to new circumstances, identifying, and extrapolating patterns (Russell & Norvig, 2016). An example in organizations is the use of machine learning to automate the analysis of historical trends and context in large amounts of data and enables identifying patterns in the data which is more efficient and can create business value (PwC, 2020a).

A neural network can be characterized as a type of machine learning or a network of artificial neurons with the purpose of mimicking biological neurons (Frankish & Ramsey, 2014). This is a method that is mostly inspired by how we see the human brain working. Each of the artificial neurons produces a sequence of real-valued activations (Schmidhuber, 2015). Moreover, the neurons communicate together, and can both receive and send numerical values to each other. An artificial neural network

consists of three main parts; an input, one or more hidden layers, and an output layer. It is considered deep learning if there is more than one hidden layer (Datatilsynet, 2018; Russell & Norvig, 2016). Deep learning can be described as a machine learning method based on multilayered neural networks, such as image and speech recognition and machine-based translation when large amounts of data are present (Løland, Berset, & Hobæk Haff, 2017).

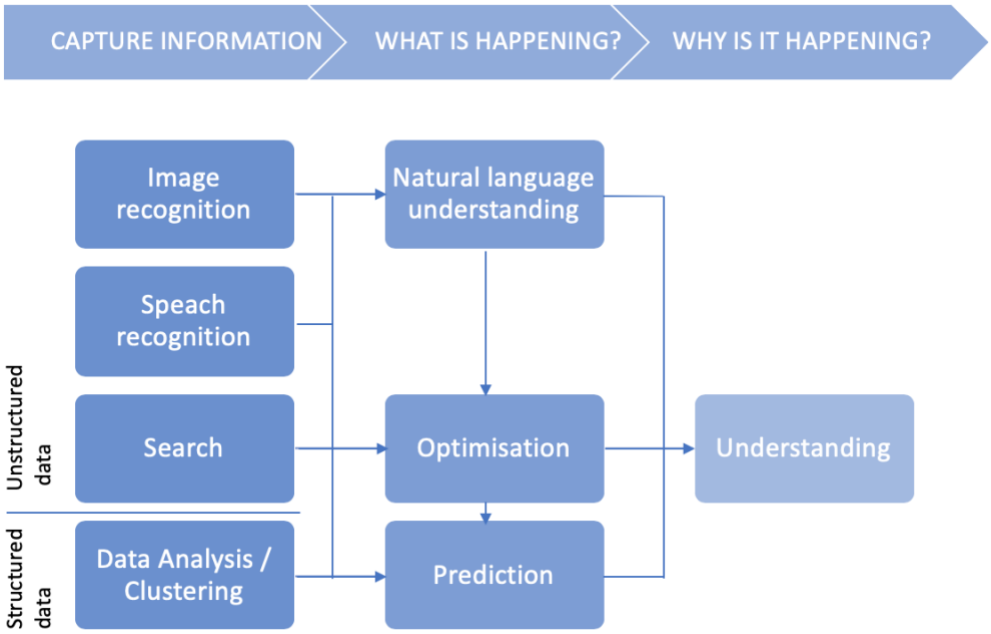
Figure 1. AI, machine learning, neural networks and deep learning.



Artificial intelligence can be categorized into three different types, which depends on the level of intelligence embedded. Firstly, Artificial Narrow Intelligence (ANI), also known as weak artificial intelligence, is a type of AI that focuses on one narrow task, which is something humans are interacting with daily (Miailhe & Hodes, 2017). Artificial General Intelligence (AGI) is a type of AI that is about as capable as a human. However, this type of AI is not fully developed and still an emerging field (Frankish & Ramsey, 2014), but looks for universal algorithms for learning and acting in different environments (Russell & Norvig, 2016). Lastly, Artificial Super Intelligence (ASI) is a way into the future where computers' capabilities will surpass humans, meaning that ASI is achieved when artificial intelligence is more capable than humans (Miailhe & Hodes, 2017).

Burgess (2018) developed a framework for artificial intelligence to easily understand what AI can do and more comfortable to apply it to real business challenges. The framework consists of three objectives 1) capturing information, 2) understanding what is happening, and 3) understanding why something is happening. Capturing information refers to collecting structured data out of unstructured data and consists of four core capabilities. The core capabilities are image recognition, speech recognition, search, and clustering. Moreover, the next objective refers to the process of using the information captured to understand what is happening, and consists of NLU, optimization, and prediction, as three core capabilities. The last objective, understanding why something is happening requires cognition. According to Burgess (2018), AI is not yet capable of understanding, and therefore only the two first objectives are relevant for us today.

Figure 2. The AI Framework (Burgess, 2018).



Natural Language Understanding (NLU) might be seen as a subfield of NLP and an important AI capability (Burgess, 2018). The concept of NLU is to get the computer to comprehend what a text means by understanding and extracting information from human written or spoken language. NLU systems can draw out relevant or important information within a text and then supply this information further to another

application program or system for purposes such as finding documents or booking flight reservations (Epstein, 2006). NLU systems uses supervised learning with machine learning to create a model of the input text (Burgess, 2018). Supervised learning is a sort of machine learning where an algorithm is presented with pre-classified and sorted data, and the goal is to learn the general rules that connect the inputs to the outputs and further use those rules to foresee future events with input data alone (Daugherty & Wilson, 2018). NLU acts as a "translator" between humans and machines where the machine is doing the hard work and might face different challenges as coping with different words that have similar or several meanings (Burgess, 2018).

2.3 Artificial Intelligence and Change Management

Throughout history, technology has influenced how organizations have changed and developed. For instance, technological innovations have changed the nature of work by transforming old organizational structures into new ones (Thach & Woodman, 1994). Artificial intelligence is a technology-driven trend that will influence businesses (Daugherty & Wilson, 2018). Researchers expect that AI and robotics may drive the workplace's most significant changes since the first industrial revolution (Brynjolfsson & McAfee, 2014). Furthermore, other researchers predict that one-third to half of the task we have now will possibly be automatized towards 2030 (Frey & Osborne, 2017). AI can be used to automate, support, and improve or solve tasks that humans have not previously been able to solve (Kolbjørnsrud, 2017). AI will not only replace jobs, but it will also create new ones and reward those who adopt AI early and effectively (Burgess, 2018). A study, by Wilson, Daugherty, and Bianzino (2017), identified new jobs that emerge in companies that are testing or using AI. New jobs involve developing, training, and following up intelligent systems (Wilson et al., 2017). It is not given that AI-powered automation will create higher unemployment in the long run, even though the adjustments are expected to be large (Autor, 2015).

The previous mindset of employing AI systems has been based on automating processes and making them more efficient. However, they are now moving towards facilitating more potential collaboration between humans and machines in a novel way. The previous business transformations consisted at the beginning of standardized processes, and later more of automated processes, thanks to the advances in informational technology. In this current era of business process transformation, the focus is on adaptive processes and the introduction of entirely new, innovative ways of doing business. Moreover, operating AI systems might amplify our skills and collaborate with us to achieve productivity gains, which has previously been impossible. Humans are needed for tasks related to developing, training, and managing different artificial intelligence applications. The machines provide them with superhuman capabilities to process and analyze enormous amounts of data from sources in real-time. In other words, the machines are augmenting human capabilities (Daugherty & Wilson, 2018).

As a part of the broader automation movement, artificial intelligence will have a fundamental impact on the way we do business (Burgess, 2018). AI will have various work implications that leaders must prepare for (McKinsey & Company, 2017). For instance, by employing AI, much of the administrative work due to the managers might be gone. In a study, Kolbjørnsrud (2017) found that AI could do tasks concerning administrative coordination and control, which managers are reporting they are spending half of their time on. More time available allows managers to focus more on tasks that require more judgment, creativity, and social intelligence (Frey & Osborne, 2017; Kolbjørnsrud, 2017), rather than the manager's routine work that includes planning, budgeting, reporting and following up routines (Kolbjørnsrud, 2017).

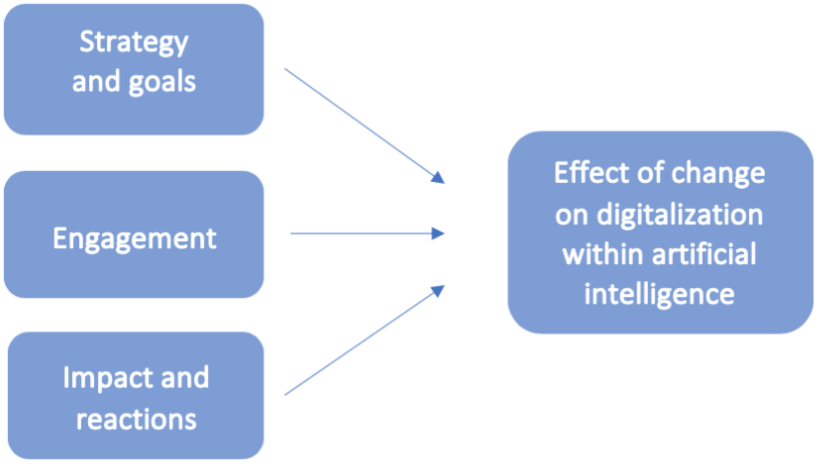
Moreover, AI will not only influence the manager's daily operations but also affect the rest of the organization. AI will most likely change the way we make decisions, make it possible to create entirely new business models, and further allow us to do entirely new things that have never been thought of before (Burgess, 2018). At the same time, the shift of new jobs emerging will put pressure on an organization's

training and development operations. As with so many technological transformations, the challenges are often more human than technical (Wilson et al., 2017).

2.4 Purpose of thesis

We have developed a conceptual model based on the research question and the theoretical review, which serves as a starting point for this thesis and the data collection (Figure 3). The conceptual model contains the independent variables: strategy and goals, engagement, and impact and reactions. We propose that these factors are influencing the effect of change concerning digitalization and artificial intelligence.

Figure 3. The conceptual model.



3. Methodology

There are numerous ways to explore and investigate a research problem adequately, and several choices need to be made during the process. This chapter will describe the research strategy and methodology conducted for investigating the scope of our thesis. First, we will discuss the choice of choosing qualitative research and explorative research design, further introduce our pre-project, and explain how the data was gathered and analyzed. Furthermore, an evaluation of this research study's quality through standard criteria for qualitative research and ethical considerations is conducted at the end of the chapter.

3.1 Business Research Strategy and Design

The purpose of our research is to investigate how implementations of artificial intelligence technology are influencing organizations. We want to study organizational changes connected to technology using AI in light of change management. In order to investigate this connection, we have formulated a research question we seek to answer: *"How do factors such as goal and strategy, engagement, and impact and reactions influence the effect of change concerning digitalization within artificial intelligence?*

It is essential to decide on a research strategy and design in order to have a general orientation to the conduct of this research. A research strategy involves the collection, measurement, and analysis of data. When considering which business research strategy and design to use, it is useful to look at the main properties and advantages of qualitative and quantitative approaches. Based on our research question, we find qualitative research most appropriate. According to Bryman and Bell (2015), qualitative research emphasizes words rather than quantification when collecting and analyzing data. A qualitative research strategy involves an inductive approach. An inductive approach consists of the generation of new theory from the data or observation done. In contrast, a deductive approach concerns the relationships between theory and research in which the theory and the hypothesis deduced come first and, subsequently, the process of gathering data.

Furthermore, the research design involves a logical and systematic plan for conducting the research process and provides a framework for collecting and analyzing the data (Bryman & Bell, 2015). We aim to get insight and understanding of how changes concerning artificial intelligence are influencing the organization concerning the organizational strategy and goals, the engagement, and the impact and reactions among the employees. Hence, it is most appropriate to conduct a qualitative research strategy through an explorative research design (Fisher, Buglear, Lowry, Mutch, & Tansley, 2010).

3.2 Pre-project

Regarding the chosen research design, a pre-project was conducted before the data collection to gain more information, understanding, and progress about the topic in general. The pre-project consisted of research about the topic on the Internet and informal conversations with people who have written about AI in general, and in relation to management. Additionally, we participated in an event about the national strategy for AI. Along with these pre-project activities, we had a face-to-face meeting with the Nordic Head at Claims Link and a virtual meeting with the Digital Manager and an Ontology Specialist at Aibel. To gain a greater insight into the implementation of AI in their company and give a brief overview of what we intend to research to figure out if we are a match.

Moreover, we talked to a Chief Commercial Officer and a business analyst in a company that offers AI services in Norway, to gain insight from different perspectives. The pre-project helped highlight the importance of implementing artificial intelligence in business, and a sense of where companies in Norway are implementing or considering implementing AI technology. It helped us get insight into some advantages and challenges that come along and more information about what kind of AI technology exists in Norway today, where we are now, and where we are going forward. In addition to see the need to apply artificial intelligence in businesses in the digital age.

3.3 Data Collection Method

This study aims to gain understanding and insight into changes concerning digitalization and artificial intelligence in business and organizations. Based on the goal, we find it most beneficial to use an exploratory research method consisting of a thorough literature review and in-depth interviews (Saunders, Lewis, & Thornhill, 2009). The use of interviews as a method for data collection involves asking questions and can be explained as a conversation between two participants, where one participant asks questions, and the other answers the questions. Using interview as a method can provide valuable information from different people in the organization (Bryman & Bell, 2015).

There are different types of interviews, and in this thesis, it is appropriate to use semi-structured interviews. Semi-structured interviews allow us to have a list of questions to be asked and also ask follow-up questions to get more in-depth detail or explanation if needed. Additionally, this type of interview might offer the opportunity to capture both rich and descriptive data about how people think and behave in different situations (Bryman & Bell, 2015; Saunders et al., 2009). Moreover, this thesis intends to get a more detailed and broader understanding of the topic of interest, and thus the best-fitted interview type is an in-depth interview. The goal of this method is to see the research topic from the perspective of the interviewee and, at the same time, understand why and how they have these perspectives (King, Horrocks, & Brooks, 2018). Further, in-depth interviews can make the atmosphere feel more relaxed and make people more comfortable (Boyce & Neale, 2006).

However, conducting semi-structured in-depth interviews is time-consuming, especially if the interviews are transcribed to be analyzed (Fisher, et al., 2010). Moreover, the participants might be biased because of their roles and involvement in the topic, and additionally, the setting can influence answers. The interviewer can also affect the information gathered by not being prepared or used to conducting interviews (Boyce & Neale, 2006).

3.3.1 Interview guide

Two different semi-structured interview guides were developed to guide the interviews and provide reliable and comparable qualitative data. We developed one guide for operational and middle management, and one for managers to give an overview or refer to the brief list of memory prompts of topics and themes to be covered. The interview guides consist of separate parts, and each is addressing the different themes in the conceptual model. The interview guides include 14 open-ended questions for operative and middle management, and 22 open-ended questions for leaders relating to the themes discussed in the theoretical review and elucidate our research question. By conducting semi-structured interviews, we got the opportunity to ask more open-ended questions, and devise follow-up questions to draw out more relevant and specific data, and a two-way communication where those being interviewed could ask questions in return (Bryman & Bell, 2015).

The guide concerning the managers focuses on the objectives and strategy of digitalization and artificial intelligence in the first part. The second part concerns the commitment associated with AI implementation, whereas the third part focuses on the impact of the application. Lastly, the fourth and final part addresses the reactions and influence of AI implementation in the organization.

The guide applied for operational, and middle management focuses first on perspectives and experiences on digitalization related to AI. Further, the second part addresses the implementation and change process, while the final section here also focuses on the reactions and influence of the implementation of AI in the organization. Moreover, a set of background variables related to the interview candidate was also asked, including age, gender, education, job duration, employment position, and leadership responsibilities.

3.3.2 Organizations of investigation - Claims Link and Aibel

In order to gain knowledge of how the implementation of artificial intelligence technology is influencing organizations concerning change management, we aim to

get insight into organizations that have recently implemented AI technology or are currently implementing it. We believe these organizations are valuable sources for information, as they have experienced or are experiencing the implementation of AI technology, and further how it is influencing the management and the rest of the organization.

Claims Link is an independent settlement company based in Norway and connected to the consultancy house Søderberg & Partners, one of the Nordic region's leading advisors and intermediaries of insurance and financial products. Claims Link's most important task is to treat damages on behalf of its clients. Furthermore, Claims Link is experiencing a change process due to the implementation of AI technology. At the beginning of 2019, Claims Link started implementing a digital co-worker called "Sødde" at their customer service department. Sødde is a software build of different modules designed to be a digital employee to automate and streamline routine tasks. Sødde is analyzing and making decisions based on combinations of rules and natural language understanding.

Aibel is a leading service company within oil, gas and offshore wind industries, and is based in Norway and with a yard in Thailand. Aibel is a total supplier of EPC services divided into two different units, Field Development and Offshore Wind and Modifications and Yard Services. Moreover, Aibel is also undergoing a change process due to the implementation of a system using artificial intelligence algorithms. Aibel started working with artificial intelligence technology in 2013, and three years later, they implemented a logistic based AI system called Master Material Data (MMD). The implementation of artificial intelligence has been a slow-going process as they are still at the trial stage and is only partially used in the organization. Currently, Aibel is still working on developing the system further. MMD is a system that is using the semantic web to help Aibel with all the information they need in specific tasks by reducing the times spent interpreting data. Further, enabling them to rapidly make decisions based on facts, save time and resources, and help them move the project forward. The process is called semantic reasoning, and it uses artificial intelligence algorithms to gather all the information.

3.3.3 Participants

To gain a holistic understanding and different perspectives on the implementation of AI in the organizations and participation across employee characteristics, we found it necessary to interview various participants with different roles in the company that has been directly affected by the implementation. In this way, we can ensure that the participants we interview are relevant to our research question. This sampling strategy is referred to as purposive sampling, where the participants are strategically chosen and is of relevance for the research question (Bryman & Bell, 2015). Hence, we informed our contact person in each of the organizations about our criteria of preference, and we expressed our wish to recruit participants who matched these criteria.

Additionally, we wanted the participants to be spread across different levels of employment, such as a CEO, a middle manager, and two diverse operational staff, representing both genders, a variety of ages, and different responsibilities. This sampling strategy can contribute to increasing our understanding regarding organizational change, perspectives on artificial intelligence, and the factors that can have an impact. A total of nine participants were recruited, and it was sufficient as well as the data saturation was achieved. In accordance with the achievement of data saturation, the data collection method would not have yielded any new or relevant information or would yield similar results and serve to confirm emerging themes and conclusions (Dworkin, 2012; Malterud, Siersma, & Guassora, 2016).

3.4 Data collection process

The data was collected through in-depth semi-structured interviews guided by two different interview guides. Initially, we planned to have all the interviews face-to-face in their offices. However, due to the Covid-19 situation, only one in-depth interview was conducted face-to-face in the office of one of the companies. The rest was done virtually through digital communication platforms. Digital interviews are more flexible, as they can be easily accommodated, rescheduled, and time and cost-saving regarding travel. Moreover, we once experienced weak internet connection and some

background noise, which can affect the quality of the recording tape or losing a bit of the content as well as it may feel less personal. Otherwise, this method allows and borne a visual element that is akin to a face-to-face interview and has excellent potential. Moreover, face-to-face interviews allow for visual cues, which can be helpful in understanding and interpret the respondents (Berg, 2009).

All interviews were recorded with the written consent of the participant, which was emailed beforehand the interviews. The interviews lasted approximately 30 minutes to 60 minutes and resulted in a total of 07:01:59 hours of recorded interviews. The interviews from both companies were divided between us and were transcribed word by word. Further, we went through the transcripts separately. We resolved any discrepancies where one of us remembered moments that could clarify the unclear words or sentences or that were significant to the meaning of the text. In accordance with the theory, we experienced that conducting recording and transcribing are significant when doing qualitative research and have several advantages. By doing this procedure, we might have ensured that the interviewees' answers are captured in their terms, compared to taking notes where it can be easy to lose essential words, the phrases, and language used (Bryman & Bell, 2015).

3.5 Data analysis

In order to analyze the interviews, the data were transcribed and coded. Coding is the foundation for analyzing qualitative data and is one of the most central processes in grounded theory. We attempted to utilize open coding as proposed in Strauss and Corbin's grounded theory approach (1990) which involves reviewing the interviews by analyzing transcripts or notes, breaking down the data into component parts, examining, comparing, conceptualizing, categorizing, and trying to assign meaning to the data (Heath & Cowley, 2004; Strauss & Corbin, 1990).

Hence, the data that concerns the same category can be stored and analyzed together, and further lay the foundation for developing theoretical assumptions (Maxwell, 2012). Our analysis's main coding categories are generated based on the literature

review and our perception of what may be influencing factors in different organizations. The first round of coding was comprehensive and involved longer sentences. During the second round, we reduced the data by splitting up or merging categories into three main categories and further managed to find several sub-categories. We decided to conduct an inductive and deductive approach in our analysis, as the overarching topics were already decided in the conceptual model. However, any other sub-categories in the analysis were captured inductively by finding the sub-categories rising from the analysis.

3.6 The quality of the research

For researchers to evaluate the quality of business and management research, several criteria can be applied, and two of the most prominent are reliability and validity. Reliability concerns if the results of a study are repeatable and involve questioning the consistency of the study's measures. While validity concerns whether a measure captures what it is supposed to measure, however, some writers suggest that qualitative studies should have other evaluation criteria than quantitative studies. Lincoln and Guba (1985 & 1994) referenced in Bryman and Bell (2015), propose two alternative criteria for assessing qualitative research. The alternative approaches highlight the trustworthiness, which parallels the validity and reliability and also the authenticity of the qualitative study. Further, trustworthiness consists of four criteria; credibility, transferability, dependability, and confirmability (Bryman & Bell, 2015).

Dependability parallels with reliability and is divided into external and internal reliability. External reliability refers to which degree research is replicable. In contrast, internal reliability refers to studies with more than one researcher questioning whether or not they agree on what they observe. It can be challenging to achieve high external reliability because essential factors in the research, such as scene and setting, might change from the original study (Bryman & Bell, 2015). However, to make this research and the findings understandable for others, we have explained the choices behind the strategy and design, and a detailed description of the method of the data was collected (Saunders et al., 2009). Moreover, we have worked

together throughout all the steps of research to ensure that we agree and gain a shared understanding during the study.

Credibility parallels with internal validity and refers to whether or not the findings are believable or credible. It tends to be a strength in qualitative research because it can allow researchers to ensure a higher level of congruence in observations and theories. Transferability parallels with external validity and refers to which degree the results can be generalized across social settings. External validity can be challenging in qualitative research because of the tendency of using case studies and small samples (Bryman & Bell, 2015). However, we sought to provide a full description of this research, making it easier for others to judge the transferability (Saunders et al., 2009). The last criteria in trustworthiness are confirmability and involve acting in good faith by not allowing personal values to influence the research (Bryman & Bell, 2015).

The second alternative criteria are authenticity, which parallels validity and concerns whether a measure captures what it is supposed to measure (Bryman & Bell, 2015). To establish quality, we have conducted a thorough literature review and in-depth interviews. According to Saunders et al., (2009), this technique is called triangulation and may help to establish quality in qualitative research.

3.7 Ethical considerations

It is essential to highlight several ethical considerations to follow when conducting data collection and in-depth interviews in qualitative research methods (Boyce & Neale, 2006) since potential ethical issues may arise (Bryman & Bell, 2015). Before starting with the data collection process, the project was registered and approved by The Norwegian Centre for Research Data (NSD), which was crucial to ensure that research held the ethical standard necessary and following GDPR guidelines (see Appendix No.3). All participants signed an informed consent form prior to the interviews, where we enlightened about the purpose of the study, information about volunteerism, ensuring confidentiality and anonymity, and the possibility to withdraw

consent without giving any reason during our research. The information provided will be stored in a closed folder through the personal cloud storage at Microsoft OneDrive. Only the project group and the supervisor will have access to the information. All data and recordings through audiotapes that can identify the interviewee will be deleted after the end of the project. The confidentiality of the thesis was also taken under consideration (see Appendix No.3).

4. Analysis

This chapter will present the empirical findings from the research. The findings/analysis are based on around 40 000 words (37 578) of transcribed interviews from nine respondents. The respondents were between 24 and 62 years old and consisted of six males and females. All the respondents worked full-time, with a variation in job duration from one to 28 years. The respondents had different roles within the companies, and five had leadership responsibilities. Out of nine respondents, seven had completed a master, one a Ph.D., and one a bachelor level of education.

The findings structure is based on the themes presented in the conceptual model. Moreover, the themes identified through the respondent's input will be presented according to the overall topic. The overarching topics are goals and strategy, engagement and impact, and reactions. The sub-categories that emerged from goals and strategy are planned strategy, concrete goals, values and vision, and anchoring in management. The topic about engagement contains categories as creating a guiding coalition, institutionalizing new approaches, highlighting short term wins and progress, communicating the vision, and creating a sense of urgency. Lastly, the sub-categories that emerge from impacts and reactions are new routines and changes in daily routines, expectations, and emotional reactions.

4.1 Strategy and goals

4.1.1 Planned strategy

We wanted to investigate if the companies have any specific strategy connected to digitalization and artificial intelligence. As such, we asked the respondents to describe their digitalization strategy regarding technology implementations such as AI. Further, we asked them to elaborate on what they want to achieve with such technology and how long they intend to spend on the implementation.

From the answers regarding a digitalization strategy, it appears that Claims Link has an overall IT strategy. Several respondents emphasized that the strategy consists of

coordinating the digital tools and digitalizing everything they can digitalize to relieve their employees and provide the employees with expertise and tools to give good advice. Moreover, one respondent stated that the implementation of Sødde is a part of the overall IT strategy.

"Sødde is part of our digitization strategy, but it is not specifically targeted at Sødde, the goals are more business economic and commercial goals (...) It is about being up-to-date and efficient, but the very goal of Sødde is to take away, release our expertise and resources to the customer, and be more efficient." (Interviewee 3)

Furthermore, the respondents elaborated on an implementation plan which consists of different steps when implementing Sødde. Several respondents talked about different phases and are now entering phase three. However, some respondents mentioned that even though the process or implementation is planned and consists of different stages, it seems that the change is continuous and that they are continuously making corrections and changes regarding the implementation. Additionally, numerous respondents highlight the importance of just "jumping into it", without preparing too much internally before the change. Most of the respondents were positive to carry it through. Thus, we found it interesting that one respondent stated that being more prepared could have improved the implementation process.
In contrast, when asking the same questions about specific strategy at Aibel, we perceived it difficult for the respondents to be specific regarding strategy and goals when it comes to digitalization in general. Several respondents from Aibel referred to being a project-based organization, and that digital strategy is part of the organizational strategy. Some respondents highlighted that since the organization is project-based, the strategy is influenced by what its customers want.

In general, the respondents explained their need for digitalization and the implementation of artificial intelligence. We perceive that the organization wants a continuous efficiency and digitalization process considering it was stated that they believe in an evolution toward a goal more than a revolution toward the goal. Moreover, several respondents stated the initiatives mostly appear from the

employees, often in dialogue with the customer and evaluated based on capacity and ability to change.

> *"In the time being, the initiatives largely come from the employees within the various projects. It is the employees working with the projects that might be those who experience the specific issues regarding digitalization and artificial intelligence and might predict opportunities to do something further (...) The premise is likely set by the superior (...)."* (Interviewee 9)

Based on the respondents' answers, we interpret that the management requires ideas from the employees to be effective. Moreover, the managers demand efficiency, and the employees have to come up with solutions, which can be all possible solutions, not necessarily a specific technology like AI. The respondents also elaborated on having a lean-type mindset where Aibel allows the employees to take more responsibility for their everyday lives and the changes they suggest. Interestingly, numerous respondents emphasized a lack of resources and knowledge about digitalizing among the organization's employees. Furthermore, several respondents express this as one of the main challenges in the organization towards a digital change. Despite the statements regarding difficulties concerning a digital strategy and initiatives, several respondents highlighted the necessity and importance of creating a new position in the organization to coordinate digitalization initiatives and involve more people as stakeholders and owners of the projects.

> *"We have a system, but we see that it did not work well enough, and thus created a new position as digitalization manager (...) The digitalization manager will coordinate, gather, and involve all stakeholders and owners for the various improvements."* (Interviewee 6)

When we asked the respondents at Aibel to elaborate on what they want to achieve with the AI technology and how long they intend to spend on the implementation, they expressed that they are facing different challenges that prevent them from moving forward. When discussing the implementation process and development, one

respondent stated that they do not know what they want to achieve with the system using AI technology and how they can use it in projects. The respondent also highlighted the current process of figuring out a roadmap and discussing what they want to achieve with the system. Moreover, multiple respondents emphasized challenges regarding a lack of understanding of the system that uses AI technology. We interpret that the system is complex and diffuse, and that they are struggling with explaining what it is and how it could benefit the company, especially gaining understanding and knowledge about the system among the leaders. One respondent highlighted that the lack of understanding among leaders is one of the obstacles in developing the system further, as it might hinder them in making decisions.

During the interviews, we got the impression that the process is slow-going due to the need for collaboration internally and externally to further develop the system. Several respondents emphasized the challenges regarding collaboration across different actors and agreeing on essential factors across the value chain.

"Everyone involved must agree on a language or description (...) The biggest challenge within this is that if we do it in a part of the value chain, we have to do it all the way (...) Today, we have not taken that step, and we have not said that this process at Aibel will be digital so that we can make use of AI (...) We have to say, this is what we want, and this is what we do, and then everyone has to take part in it. That is perhaps the biggest challenge, as I see it now." (Interviewee 6)

Furthermore, respondents elaborated on different challenges that might influence the further development of the system. Such as thoughts of how the focus on short-term results among leaders might impact investments and new construction of the system. One respondent stated that fundamental changes tend or may require at least both longer efforts and slightly larger upheavals. Additionally, challenges regarding resources were highlighted among several respondents. One respondent stated not having enough resources to have a proper operation of the system, and not enough time to further carry out new ideas. Another respondent elaborated on new

technology issues and the lack of knowledge about the technology in general, not only within the company.

4.1.2 Concrete goals

We wanted to investigate how goals might influence the effect of implementing AI technology. As such, we asked questions related to the extent to which the organizations have set any short-term or long-term goals concerning digitalization within artificial intelligence.

In general, the respondents at Claims Link gave the impression that the business cases have to be profitable. Two of the respondents expressed clear and specific goals regarding the implementation of Sødde. One goal involves achieving better customer service response times, which are achieved, while another is a financial goal of the calculation of return on investment over three years. We got the sense that the implementation is also a benefit for the employees, not only the organization.

> *"It is an investment since some of the tasks Sødde is doing are tasks you get tired of. You might get more diverse working days, more motivated employees for not having many routine tasks even though there are routines, but slightly different tasks. It is a win-win situation as well."* (Interviewee 1)

Contrarily, it appears that Aibel does not have a concrete business case or concrete goals regarding the implementation or further development of the system. The respondents at Aibel recognize implementing artificial intelligence technology as a tool to solve business problems, and it is not a goal in itself to implement AI technology. However, the respondents emphasized the lack of calculations regarding the profit of the system. One respondent expressed that the respondent is not aware of any estimates regarding the return on the system's investment. In contrast, another respondent expressed that they have made some calculations, but have not calculated the full potential due to the difficulties regarding making such calculations.

"We do not have specific goals around digitalization, but we have specific goals when it comes to our productivity and deliveries and that kind of thing. At our company, digitalization is more a tool to achieve goals (...)." (Interviewee 9)

4.1.3 Visions and values

An interesting finding is that the respondents elaborated on values, visions, and culture during the questions about goals and strategy. Especially when we asked questions about the importance of keeping up with digital development, the respondents shed light on visions, culture, and values.

During the interviews, we got the sense that despite being in a super-conservative industry, Claims Link is a first mover with AI technology and has a huge desire for digital development to be evident in their values and vision. Moreover, Claims Link has an innovation leader, highlighting their desire to invest in slightly more significant changes such as digitalization and artificial intelligence, while also giving customers a pleasant experience. We found a common belief that they want to be more innovative and change insurance, which is also part of their values and vision. Being groundbreaking is one of their core values by challenging the status quo and jumping into new things.

The respondents also emphasized on communicating the vision regarding Sødde with the employees. Hence, we found that several of the respondents point to various improvement potentials in communication during implementation. One respondent talked about improvements due to the understanding of the technology. Additionally, the company should explain about the technology behind the change process more and enhance the knowledge with, for example, images and visualization. On the other hand, another respondent pointed out that the communication given was pretty clear but would prefer the information much earlier.

"It was made very clear that Sødde should not replace us. The management made it clear that this should be something liberating our time, and that will allow us to carry on other tasks and perhaps more exciting tasks. Moreover, the employees at customer

service should not have to spend time on what is very repetitive and easy. We have also seen that there are clear limitations to what it can accomplish, so I would say that these are the two most important moments." (Interviewee 5)

In contrast, the respondents at Aibel had more emphasis on values and culture, rather than visions. We got the impression that having values with on being visionary and flexible, and organizational culture of failing and learning, is contributing amenable to change at Aibel. Moreover, having values with a focus on being visionary and flexible, and organizational culture of failing and learning, is contributing amenable to change at Aibel. One respondent stated that the vast majority of the employees are flexible and accept change.

"(...) I think we have succeeded in having common values, with a lot of focus on the way we work management systems and where values are rooted (...) We should be open, responsible, visionary - and that is something we use to be forward-leaning. We try to focus on being visionary in improving ourselves - accepting new technology that is then rooted in management." (Interviewee 6)

The respondents at Claims Link and Aibel emphasized that creating a better understanding of the employees and getting their acceptance toward the implementation of new technology through emphasizing vision, values, and culture have formed the changes regarding AI digitalization. Hence, led to a successful change and, at the same time, more comfortable making a change in general.

4.1.4 Anchoring in management

We wanted to investigate the influence and reactions in the organizations and asked questions about the companies' digital drivers. An interesting finding that occurred is the emphasis on anchoring in management when talking about digital drives, but also regarding reflections of why the implementation was successful.

At Claims Link, the respondents had a pretty clear and common perception that the leaders are the ones who are currently the driving forces of technology changes and highlighted the importance of anchoring the leadership in the change process. Moreover, we found that numerous respondents emphasized that leaders, in general, show an interest, passion, and knowledge for efficiency and digitalization. Additionally, several leaders or managers were positive and engaged in the change regarding Sødde. The respondents commented that their leader recently completed an executive program in innovation, and emphasized that the leaders, in general, are up-to-date and knowledgeable about innovation.

> *"I think the anchoring in management is incredibly important. Upwards, that you have clear support from the CEO and the board. Downward, it is incredibly important for employees to understand why they are doing it (...) So, I think the management should be open and honest, that you have to introduce this to be competitive in the market (...) That those involved in the project are everything from top management to employees who sit and handle the tasks."* (Interviewee 4)

Although the majority of answers pointed to the leaders as driving forces, some respondents highlighted that initiatives might come from the employees. Based on the respondents' answers, we believe that the employees' change initiatives are often more straightforward, and the breakthroughs come from management. One respondent talked about having a culture of being engaged about ideas and would like employees to think and make suggestions. Moreover, it seems that initiatives from the employees are easily communicated with the leaders. However, in some cases, the management must take action.

Some of the respondents at Aibel shed light on the effect of having anchoring in top management and challenges associated with having a breakthrough if the initiative comes from the employees. It seems that the involvement and engagement from the top management are significant for change in the organization. Considering the shared beliefs concerning leaders are usually good at fighting for their causes and ideas. We got the sense that if the leaders want to get something done, they typically

implement it if the interest is present. Hence, it seems that it is much easier to work with the anchorage if the interest is currently in the management.

However, some middle managers and process owners are concerned about digital developments and that most initiatives occur from them. This gives the impression that some employees are given more responsibility beyond their present position. As such, several statements highlighted the anchoring in middle management.

"I have the impression that it has not always been a management strategy-based development, but with that being said, some middle managers have been engaged and said let´s do this. So far, there have been middle management decisions that have resulted in us being where we are today, in addition to the initiatives coming from the employees working within the different projects with us." (Interviewee 8)

Several respondents shed light on the organizational and human challenges that are about the organization´s formal foundation and the company's decision-making process. Moreover, the respondents emphasize the importance of speaking the business language to create more understanding and commitment from top management. One respondent pointed out that top management must be involved in every business case. Hence, it requires anchoring in the management to develop the system further. However, they are currently experiencing challenges regarding this, and are working with making the decision-making process more manageable.

4.2 Engagement

4.2.1 Creating a guiding coalition

We wanted to study how or if engagement might influence the effect of the implementation. As such, we asked questions about routines and involvement around change initiatives in the companies. An interesting finding that emerged while answering these questions was the focus on involving employees at Claims Link, while we discovered another way of structuring change initiative at Aibel.

Most of the respondents at Claims Link stated they had been involved throughout the process, including testing, detailed work, and projects with the implementation partner. Moreover, it seems the involvement consists of creating a project group, according to project management tools, consisting of a project owner, project manager, and employees directly connected to the tasks that are changing and external support from the partner. Hence, resulting in internal and external knowledge and key employees within the group involved with the implementation. Lastly, some of the respondents perceive this involvement to influence the employees so that it becomes "their own project" and not a project that comes top-down.

"But overall, this has been initiated by the team and implemented by the team, and they largely feel that it is their project, not a project that comes top-down."
(Interviewee 3)

Despite the respondent's expressions around creating a project group and involvement of several employees in the process, most of them mentioned resources and capacity as a challenge during the implementation. Some respondents elaborated on how the implementation requires various updates and testing, which they express as being time-consuming.

On the other hand, the respondents at Aibel reported that the employees involved in the project were more responsible for driving the changes. The fact that they might identify opportunities and manage a change by themselves provides the employees access to identify opportunities, create a case, and the possibility to test and fail to make it work. It seems that the organizational structure of being project-based also influences the structure regarding a coalition. Moreover, one respondent explained that the project owner is responsible for any changes or improvements made during a project. Hence, we got the impression that they are not creating a guiding coalition with different employees, but rather using the project group to implement and drive changes.

"(...) If you can empower the employees to manage a change by themselves, then we let them do so as far as possible, such as lean-type thinking (...)." (Interviewee 7)

4.2.2 Institutionalizing new approaches

Another common finding during the questions around routines of implementing change initiatives is that the respondents at Claims Link elaborated on routine descriptions, specific requirements, and proper project management with their implementation partner. The respondents perceived these factors as beneficial for clearly showing what needs to be done and understanding it when this is entirely new to them.

"(...) When we introduce something new, we always show how this is done with detailed instructions to use - so it should be possible to understand or if someone has forgotten, how to do it." (Interviewee 2)

While at Aibel, some respondents highlighted that this was more demanding in their company. It seems that it is a challenge to gather all participants and contributors toward the improvement initiatives they come up with and the implementation. On the basis of this, we interpret that change management is complex and challenging and that they want to put the responsibility to the owner of the process or area.

"But the most complex thing is maybe to drive the change management in the company after an implementation. We try as much as possible to push or put the responsibility on the person who owns the process or owns that area so they have a responsibility to inform or make sure people use and work according to the set methods (...) The challenging one, is often when you have completed a solution or a project and to make sure it is put into use, (...), we may emphasize extra on progress." (Interviewee 9)

4.2.3 Highlighting short-term wins and progress

We wanted to investigate the understanding and acceptance of the change and asked the respondents questions about initiatives implemented to get the employees to understand and accept the implementation of new technology. An interesting finding is how the two companies highlight progress and short-term wins.

All the respondents at Claims Link highlighted the company's great and lively launch of Sødde and shed light on the communication of information given regarding the implementation. It seems that the management tried to create engagement around the implementation of Sødde by creating a relationship between the change and employees through initiating a naming contest and a great launch with cakes, balloons, and awarding. The respondents were also pretty clear on the importance of establishing knowledge, interests, and advertising of the implementation provided by the management in advance. The respondents also highlighted quick solutions and quick results as essential factors for gaining acceptance for the change and commitment. Another respondent mentioned potential for improvement such as more ongoing updates to create and give a better understanding concerning the implementation and avoid speculation or uncertainty about what is happening among the employees.

"It reflects our culture. We have tried to do this in a slightly more informal and playful way, we have had cakes and balloons, and named the digital worker, Sødde. We have a youthful culture and a low-cut age, a culture where we celebrate together, and we have tried to include the implementation of Sødde." (Interviewee 4)

Contrarily, we did not get the same response regarding communication and progress at Aibel. Only one respondent stated they are trying to communicate progress and what they have achieved, through meetings, magazines, and internal websites. However, the respondent emphasized that Aibel could make improvements regarding this and desire to be better at creating a culture for continuous change.

"(...) We try to communicate excellent achievements, what we have done, the results, and to listen to the employees who are influenced by changes and our customer, but we are not good enough. It is on my ambition list to be better at it. Creating a culture for continuous improvement, to make this happen more by itself. It is something we regularly do, but we're not the best at it, but we're pretty good at it." (Interviewee 9)

4.2.4 Communicate the vision

We wanted to investigate how the companies engage the employees and asked questions concerning getting the employees to accept changes. An interesting finding is that it seems that both companies recognize the importance of gaining acceptance. However, they have some differences in their approach, and at Claims Link, the respondents emphasized highlighting short-term wins, but at Aibel communicating the vision seems to be an essential factor.

At Aibel, the respondents emphasized communication as a critical factor in gaining acceptance. Moreover, highlighting why the company is changing by being open and transparent, showing pilots and results, coaching, and involving. It appears that communication is given to the employees through different channels and with a different vibe in contrast to Claims Link. The respondents mentioned communication through intranet, magazines, and meetings, without any special about it, only formally informing the employees about changes.

Additionally, some respondents stated that a challenge regarding communication within the company is to commit everyone and gain understanding. Also, working against opposing forces throughout the process, including leaders and employees, which requires communicating along with the change. Furthermore, one respondent elaborated on this type of challenge regarding the system.

"There has been an ongoing challenge in the understanding on how it can be used and what value it gives to the company. There has always been a struggle along with funding and resource access that has greatly influenced the development and operation of the system." (Interviewee 8)

4.3 Impacts and reactions

4.3.1 New routines and changes in daily routines

We wanted to investigate the impact of the implementation on the employees and their reactions, and asked questions concerning the effects and responses in the companies. From the answers, it seems that the application concerning AI has influenced the companies in different ways.

All the respondents at Claims Link stated that the implementation of Sødde is influencing them. Leaders to operative employees have all been affected in one way or another in terms of different, new or fewer tasks, and new responsibilities. In light of this, one respondent stated the implementation required some changes in the routines. Moreover, the respondents featured that they observe what Sødde is doing in the systems while working, highlighting the tasks Sødde is doing are viewed as a help. Also, as the change has been foreign and new, they have spent a lot of time preparing data for change. However, another respondent mentioned having a calmer work life with less pressure.

"As a result, most of us have more time to spend on other things, such as more time on the phone and the customers who approach us. Especially since it is the first time, there have also been continuous evaluations to see that it is performing tasks the way we thought it should." (Interviewee 5)

However, despite the positivity around new routines and changes in daily routines at Claims Link, some respondents also expressed the difficulty with their IT department as one of the biggest challenges in implementing a change such as Sødde. It appears that it was hard to match with the existing IT-department caused by how they operate classic IT and not the technology Sødde requires.

"*We experienced vast challenges in getting assistance from our IT department, because they operate classic IT (...)."* (Interviewee 4)

However, the employees and managers of Aibel are being affected differently. The respondents highlighted that some employees notice the changes since they are working with the project. For others, there is no direct impact on tasks, but instead on the quality of the data. Others have expressed that they are experiencing improvement in the company related to the changes. One respondent expressed that changes have been driven from below. Furthermore, the change has been attempted in the business processes in the least disruptive way possible. As a result, fewer employees need to relate to the system.

"I have the impression that the AI system project has been initiated from below. Also, it has been attempted into the business processes in a little disruptive way as possible. So very few at Aibel relate to the AI system. The engineers still use the tools they have always used, and therefore, experiencing no change, but the data that is fed into these systems has then received an increased quality." (Interviewee 8)

It appears that it is essential to have a common business language to make it easier to communicate with each other and to avoid misunderstandings. Hence, Aibel is challenged by customers to communicate in a different way to make it more understandable to their customers. Additionally, a respondent mentioned that it has been challenging for them to get new resources to be productive.

"It is demanding to get new resources to be productive in the AI system because it is so demanding to convey how the technology works. It takes time to understand what the AI system is and what it is intended to do, and thus, affect the employees. On the tool part, we have had to develop a lot ourselves, which has been difficult, because we have implemented things that are not specific to Aibel, which we had to code, because we did not find existing solutions that fit the purpose." (Interviewee 8)

4.3.2 Expectations and emotional reactions

We wanted to investigate the participant´s reactions and expectations that emerged when implementing artificial intelligence in the companies. Interesting findings concerning their expectation and emotional reactions came to light when asking

questions about expectations regarding the implementation, general acceptance of change, and challenges regarding the change.

The respondents at Claims Link expressed high expectations among both employees and managers to the change related to artificial intelligence, considering what tasks Sødde can perform and how much work it can manage. Based on the respondents, we interpret that the different departments in the company have had different expectations. The employees are mostly positive about the implementation when asked about their thoughts about Sødde and the implementation process. One respondent praises the employees who have come up with the idea, while also pointing out that the generation might welcome this change as applause, as it "removes" tedious routine tasks. Several respondents pointed out that this implementation has been fascinating, at least for those involved.

Although most of the expressions were positive, several of the respondents stated they sensed uncertainty and a little fear among the employees regarding the implementation of new technology. One respondent expressed an immediate reaction of confusion and shock and shared the pressing worries of being replaced by a robot. However, the respondent emphasized that the response quickly turned positive. Moreover, the respondents stated that skepticism was common among employees who did not work with the application. Others highlighted that lawyers, in general, might be more skeptical about such technology. The respondents also expressed the different expectations and reactions across the departments. One respondent highlighted that the IT department had difficulties adapting to the change, and therefore had another response than, for example, the customer service department.

"Immediately it was like, what, are we getting a robot that will make us unemployed? That was the immediate reaction, but most people realized that it was not the case, it was only going to do standardized and straightforward tasks. Hopefully, it will take more in the long run. The employees have been positive, and they have expected it to take the most uncomplicated and standardized tasks. It also takes a lot that we now

actually do not have to follow up on afterward, so it has fulfilled a part we have hoped for." (Interviewee 5)

The respondents at Aibel had different expressions on expectations and reactions concerning the system's implementation and further development. One respondent stated there is great potential in the system but is not sure whether the leaders are aware of it. Also, the respondent emphasized the unsureness of the leader's involvement in the project. Moreover, the employees are given responsibilities for the system but expect and prefer it to be among the leaders. Several respondents expressed some concerns and shed light on the fact that they need more resources to develop further.

Moreover, the respondents stated uncertainty concerning the impact on employees of a possible change or development in the future, such as changes in work tasks, openness to new opportunities, or change in competence requirements and needs. Several respondents expressed that the employees might experience fear when it comes to change and digitalization because they are afraid of losing their job or getting fewer work tasks to perform. However, one respondent stated that Aibel focuses on being honest and open about communicating the change and implementation.

"(...) But it is evident that people are frightened by the so-called digitalization and innovation that is coming, but I believe we have to be honest and explain what it means. Also, it is the pace of change; people say it is vast, but I think it varies in companies. In some companies, things go fast and for others, slower. So, it will be step by step then, where we manage to get everyone onboard." (Interviewee 7)

Despite the obstacles regarding the further development of the system and the different reactions, we got the impression that several respondents were positive and expressed an engagement for the further process as they have gained an insight into the development potential in the organization.

5. Discussion

In this chapter, the findings presented in the previous section are discussed. Each of the identified categories and the main results of the two companies are discussed and compared to relevant theory from our literature review. As stated in our research question and illustrated through the conceptual model, our primary goal is to examine the following question: *"How do factors such as goal and strategy, engagement, and impact and reactions influence the effect of change concerning digitalization within artificial intelligence?"*

The data analysis presented in the previous section reveals that each of the elements proposed plays a role in succeeding when implementing change regarding artificial intelligence. We will start by presenting our findings from the analysis and introduce what others have found on the same topic. Further, we will discuss and compare if our results are in line with our literature review and what they have discovered. The discussion ends with a professional explanation of the findings along with our personal opinions. Next, we will give a summarizing table of our main results, and points of discussion will be presented in addition to a revised and extended version of our conceptual model. At the end of the chapter, we will explain how our study can contribute to existing literature before elaborating on the study's limitations, and further research will be suggested.

5.1 Strategy and goals

Planned strategy

The importance of having a specific strategy was emphasized differently at Claims Link and Aibel. Our findings show that developing a particular change strategy was essential for the change before implementing the change at Claims Link. In contrast, Aibel did not produce a specific plan and is still struggling to establish a roadmap for further development.

In accordance with the change models presented in Stouten et al, (2018), the respondents support the importance of developing a plan for achieving a vision at

Claims Link as they expressed that they are satisfied with the clear plans and guidelines regarding the change. Moreover, communicating the plan and vision, especially when the change is radical (Garvin & Roberto, 2005), is considered as an essential element to prepare the Claims Link for implementing changes (Kanter, Stein, & Jick, 1992).

The importance of having a strategy through a change process is reflected at Aibel as they experience troubles and slow-going processes without having it (Garvin & Roberto, 2005; Stouten et al., 2018). Our analysis indicates not having a plan or a roadmap at Aibel, results in not knowing what to achieve with the system and how to use it, and further leads to challenges regarding further development and implementation. A need for collaboration internally and externally makes it more challenging to make a roadmap since it involves multiple stakeholders. The lack of strategy and vision to follow might result in challenges among middle and lower-level managers concerning transforming units consistently with the vision and procedure, which is a crucial part of the change process (Yukl, 2013). However, without a concrete plan or strategy, Aibel successfully implemented AI technology to a certain extent and are on their way to figure out a roadmap. Hence, not having a particular strategy or plan is not explicitly making the change unlikely to succeed but resulting in a slow-going process.

Concrete goals

Another compelling finding discussed in our analysis is the contrasting focus on goals regarding the successful implementation of artificial intelligence. The study reveals that Claims Link has clear and specific objectives regarding the application of Sødde. On the contrary, Aibel does not have a concrete business case nor concrete goals concerning the implementation or further development of the system. When focusing on goals, the employees might be motivated regarding having to work towards something or to see results. Change takes time, so it is essential to keep the motivation and focus on highlighting progress, for example, by generating short-term wins (Kotter, 1995). Also, management focusing on communication and employee

involvement through informing the employees what they want to achieve is essential towards successful change.

Moreover, involvement increases the level of commitment and confidence in the changes, making the implementation process successful (Jacobsen, 2018; Kaufmann & Kaufmann, 2015). Thus, having specific goals are an essential factor when implementing change. Our study supports the essential role of goals in change processes. Having particular goals at Claims Link makes the employees and leaders aware of what they want to achieve and are also motivated and committed by being updated on small-wins and achievements. However, our study also shows that a change concerning the implementation and further development of AI is not necessarily dependent on goals. Bearing in mind that Aibel has implemented the system and is currently working on new development. Nevertheless, our findings indicate that the process might be influenced negatively without goals. Hence, obstacles concerning not knowing what to achieve and developing a roadmap.

Visions and values

The analysis indicates that the respondents emphasized the importance of the companies´ values, vision, and culture when implementing change. At Claims Link, visions and values are presented as vital, while Aibel focuses more on visions and culture to enable change. It appears that having a focus on having the right values and a culture of change toward a change is vital and might enhance employee understanding and thus creates acceptance among the employees.

In line with Kotter's 8 step change model (2012b), the respondents at Claims Link and Aibel emphasized that their organization's values and vision are substantial and represent the foundation of the companies. Additionally, having a vision to guide the change process at the companies, seems necessary to a successful change, in order to increase employee understanding, establish knowledge of what the overall purpose is, and how to reach it (Jacobsen, 2018; Kotter, 2012b; Lewin, 1951). Thus, the visions and values have been a factor in paving the way for the successful implementation of artificial intelligence.

Moreover, the respondents at both companies expressed that building a culture of learning and failing, enables them to challenge themselves and be more responsive to changes. Hence, the companies manage to anchor the digitalization change in the culture, by focusing on being innovative and positive towards change. Thus, preventing fall toward typical pitfalls in a change process (Kotter, 1995).

Anchoring in management

The analysis reveals that the respondents at Claims Link and Aibel emphasized anchoring in management as an essential factor for successful change. However, an interesting finding was how respondents perceived the drivers for change in the companies necessary for anchoring in management. Moreover, we found that the drivers at Claims Link are mostly the leaders, and at Aibel, it is the employees or middle management.

Our findings regarding the implementation at Claims Link supports the importance of having top management who supports large-scale changes, suggests initiatives, and guides the change. Hence, when the change is anchored in the management and relies thoroughly on management's role, it is more likely to succeed (Beer & Nohria 2000; Yukl, 2013). However, some studies argue that top management should not dictate how to change, but rather provide support, necessary resources, and encouragement to facilitate change (Yukl, 2013). This is the case at Aibel, where the middle managers and employees are given more responsibility concerning initiatives and changes.

However, when the initiatives come from the employees at Aibel, they experience difficulties gaining commitment from the top management, which further leads to a slow-going process and challenges with the system's development. Consequently, the management was not involved until later in the process, which resulted in resistance or challenges concerning a lack of understanding of the need for change among the leaders and top management (Beer, 1988; Belgard et al., 1988). Thus, our study supports the importance of having the change anchored in management. Despite the challenges, they still managed to implement the change and manages to work on

further development by involving the middle managers. At Aibel, the respondents have a great belief in the potential of the system. Hence, when the employees are supportive, it can contribute and enable successful transformation (Herold, Fedor, Caldwell, & Liu, 2008; Wright, Christensen, & Isett, 2013).

5.2 Engagement

Creating a guiding coalition

We found that creating a guiding coalition was essential before implementing a change at Claims Link, though not as crucial at Aibel. At Claims Link, the managers created a project group specific to the change initiative and involved different employees. In contrast, at Aibel, the project groups are influenced by projects and the customers and are not explicitly made for change initiatives.

Our analysis supports Kotter's (1995) findings of the importance of establishing a guiding coalition, considering the responses of engaged, committed, and cooperative employees at Claims Link by involving them in a project group directly connected to the change. It increased the understanding and meaning of the implementation of Sødde and further paved the way to a successful implementation of Sødde (Beer & Nohria, 2000; Huczynski & Buchanan, 2013). Additionally, empowering skilled employees to implement and support change, might positively influence managing a successful implementation (Yukl, 2013).

However, our analysis also shows that Aibel manages to implement and drive change without creating a specific coalition by instead using existing groups. At the same time, our study indicates that Aibel is experiencing obstacles similar to existing theories regarding this structure. The respondents pointed out a weak connection between the employees and top management regarding the change. In line with theory, such coalitions are recommended to keep supportive relationships and continuous dialogue with the top management (Beer, 1980; Kanter, 1999; Kotter, 2012b). Moreover, the respondents at Aibel emphasized challenges concerning the lack of necessary knowledge, time, and resources to have an effective change process

and further development. In light of existing theory, these obstacles may be a result of the organization's structure of project groups, considering such coalitions points to more connection between management and employees, more knowledge, time, and resources by creating groups (Beer, 1980; Kanter, 1999; Kotter, 2012a).

Institutionalizing new approaches

Claims Link has routine descriptions, specific requirements, and proper project management with its implementation partner concerning the implementation of artificial intelligence. However, Aibel expressed the challenge of gathering all participants and contributors to work in line with the improvement initiatives they come up with and the implementation process. The respondents at Aibel see the importance of empowering others to drive changes, but do not manage to get the employees to make the changes.

In our analysis and through existing literature, empowering others to act according to the vision is one of the significant steps to give the change process the best chance of succeeding and avoiding common pitfalls. We find that Claims Link does not experience vital obstacles in further implementation because they have clear routines, structure, and plans. Having routine descriptions and specific requirements during the implementation process can be a critical factor in institutionalizing the new approach to organizations. Thus, ensure the organization's ability to implement future change easier (Lewin, 1951; Kotter, 1995). On the other hand, Aibel experiences difficulties as they do not have clear routines and challenges in gathering the right people and resources, which might make them unable to bring these changes for further development. Thus, these changes will be "gone" or not transferred into new projects in the organization. Therefore, our study supports that changes must be part of the organizational structure and identity, to become lasting and make the change stick (Kotter, 1995).

Highlighting short-term wins and progress

Our analysis indicates that highlighting short-term wins and progress is an essential factor in gaining understanding and accepting the change at Claims Link and Aibel.

The companies mainly communicate information through meetings and emails, yet there is a difference in the communication style. Claims Link has an informal way of communicating, for example, having celebrations and competitions. In contrast, communication at Aibel is strictly formal, with a focus on giving pure information.

In line with Kotter's theory (1995), our study supports that highlighting short-term wins and progress is an essential step of successful change. Focusing on progress by highlighting small successes, breakthroughs, and goal completions are vital in motivating and keeping the employees at Aibel and Claims Link positive when facing challenges (Amabile & Kramer, 2011). The continuous communication of progress and results by giving updates on the change process and making the achievements visible keeps the employees at Claims Link, and Aibel focused and motivated. Moreover, when the employees are aware that the change program is progressing successfully, they might be more enthusiastic and optimistic (Yukl, 2013). Thus, having motivated and focused employees improves the understanding and acceptance of change at Claims Link and Aibel.

However, the employees at Claims Link were more motivated and positive towards change than at Aibel. The difference might be a result of the combination of the announcements about Sødde, the progress, results (Amabile & Kramer, 2011), and celebrations regarding changes (Yukl, 2013) that increase awareness, motivation, and commitment. However, the companies are not in the same stage in the change processes, and Aibel experiences a more invisible change, which might be other possible reasons for a different motivation.

Communicate the vision

Based on our analysis, we found that Aibel focuses on communicating the vision to gain acceptance and commitment among employees, especially leaders. This might be a consequence of how initiatives of changes in the company occur and are implemented. Thus, it is essential since the initiatives are not developed or elaborated from the leaders, but those on the «floor».

In line with Stouten et al., (2018), internal communication within Aibel is vital during the organizational change to gain a better understanding and knowledge of the process. Moreover, communication is emphasized as an essential key to facilitate a productive change, reduce uncertainty, create readiness for change, and create conditions for commitment (Elving, 2005; Ford & Ford, 2009). The employees working in projects or the middle managers at Aibel are trying continuously to get the managers and employees to understand the vision with the initiative and get on board. The purpose of communicating the vision is to make the employees perceive the benefit of the change as attractive, and it is easier to drive and accept a change (Kotter, 1995). Moreover, the respondents at Aibel recognize the importance of being open and honest and involving all stakeholders in the change process (Stouten et al., 2018). Thus, our study supports that communication is as a vital factor during change initiatives and the success of implementation process (Kotter, 1995; Lewin 1951).

5.3 Impacts and reactions

Changes in daily routines

We found that the implementation of Sødde directly influenced the employees by creating changes in the employee's and leader's daily routines. In contrast, the implementation of the system using AI at Aibel only affected the data quality, not the employees. Our findings confirmed the notion that new routines and changes in daily routines occur after implementing Sødde (Wilson et al., 2017), by creating new routines such as following up Sødde. However, changes in routines and tasks might negatively affect employees and be reasons for resisting change if the new tasks involve causing personal losses or are not productive (Jacobsen, 2018; Yukl, 2013). While the implementation at Claims Link had almost only positive outcomes for the employees and removed standardized and easy tasks, the application at Aibel does not directly influence the employees´ daily routines or work life. Thus, the employees at Claims Link and Aibel do not experience any reasons for resistance towards the implementations (Yukl, 2013).

Expectations and emotional reactions

Our analysis discovered that the respondents in the companies expressed different expectations and reactions of the change initiatives across departments and roles. We found that the employees at Claims Link were mostly positive, though some were skeptic, and some had immediate thoughts of being replaced. Moreover, the respondents at Aibel emphasized the same reactions and fear of digitalization and losing tasks or jobs, and the uncertainty of not knowing possible outcomes. Also, a feeling among the employees that the managers are not present or taking action regarding the change and further development.

The response of change is individually (Erwin & Garman, 2010), and resistance is considered a typical response to change and a natural response to organizational change processes (Bovey & Hede, 2001; Yukl, 2013). However, this was not the case at Claims Link and Aibel. Even though some expectations and reactions were connected to being afraid and skeptical, the respondents at Claims Link and Aibel expressed generally positive attitudes and expectations among the employees towards the change and further development and implementation. Hence, we did not find typical obstacles or resistance of importance among the employee's reactions (Jacobsen, 2018).

Our study supports facilitating better education and communication, and increased participation and involvement are initiatives of overcoming resistance (Kotter & Schlesinger, 1979). The respondents at Claims Link emphasized the effect of communication and involvement in the project group when asking about gaining acceptance of the change. Additionally, communication at Aibel is emphasized as a critical factor in gaining recognition. Another approach by Kotter and Schlesinger (1979) is to build engagement and participation by asking employees for ideas on how to make change work. At Aibel, the employees are getting more responsibility to improve and make changes. Thus, our study points to a combination of communication and involvement by asking for ideas to gain acceptance and prevent resistance.

5.4 Main findings

We have developed a systematic overview to summarize the main findings of our study. The table offers a more elaborated and representative understanding of both findings and analysis. The questions have been formulated in accordance with the topics presented in our conceptual model for a comprehensive overview.

Table 1. An overview and summary of the main findings of the thesis.

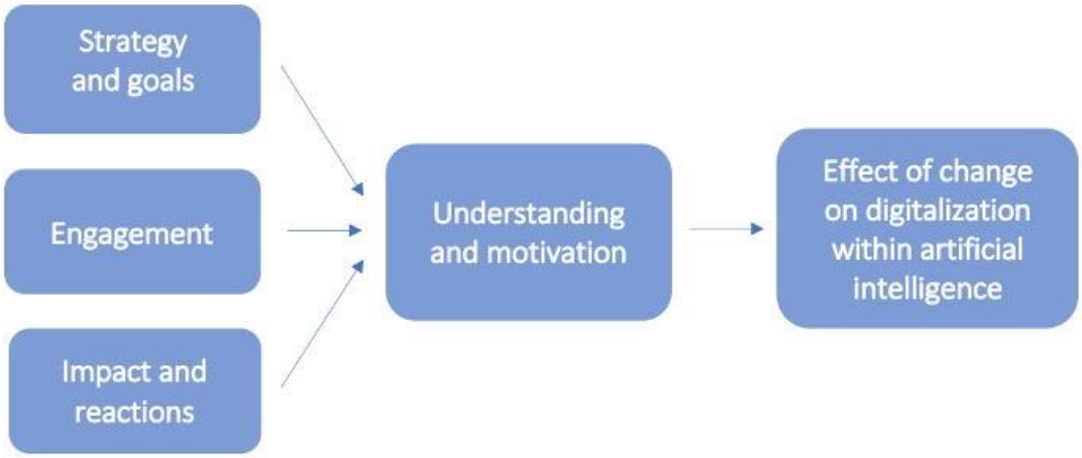
How are strategies and goals impacting the success of AI digitalization?	
Claims Link	***Aibel***
– Planned strategy is an essential factor in succeeding in the implementation, considering it provides a plan and clear guidelines that made it easier for the employees to implement the change. – Clear and specific objectives regarding change is making the employees and leaders aware of what they want to achieve and motivated and committed by being updated on small-wins and achievements. – Values and a culture of change is vital and might enhance employee understanding and represent the foundation on which the company is formed. – Anchoring in management was an interesting and essential factor concerning successful change. The respondents perceived the drivers, mostly leaders, for change in the companies necessary for anchoring in management.	– Not having a specific plan leads to confusion among employees, considering what to achieve and progress within the company and across multiple stakeholders, resulting in a slow-going process. – Not having a concrete business case or concrete goals might negatively influence the implementation concerning the obstacles of not knowing what to achieve, which affects the process of developing a roadmap. However, Aibel has implemented the system and is currently working on new development. – Values and a culture of change is vital and might enhance employee understanding and represent the foundation on which the company is formed. – Anchoring in management is perceived as an essential factor, where mostly the employees or middle management initiate change. However, they might face resistance at top management, and further difficulties gaining commitment from the top management, which further leads to a slow-going process.

In what ways are engagement influencing the effect of implementing AI?	
Claims Link	***Aibel***
– Creating a guiding coalition consisting of different employees led to cooperation, more engagement, and involvement across different roles. Resulting in an increased understanding of the implementation further paved the way for a successful implementation. – Claims Link does not experience vital obstacles in further implementation because they have clear routines, structure, and plans. They help ensure the organization's ability to implement future change easier, which further might help maintain continuous change. – Highlighting short-term wins and progress, especially the impact of communication through celebrations and competition influences the employee's motivation and focus, which are essential factors for improving the understanding and acceptance of the change.	– Using project groups instead of developing a guiding coalition resulted in challenges concerning the lack of necessary knowledge, time, and resources to have an effective change process and further development. Moreover, arising a weak connection between the employees and top management regarding the change. – Aibel expresses the challenges of gathering all participants and contributors to work in line with new initiatives and the implementation process without clear routines, structure, and plans. – Focusing on development and achievements influences the employee's motivation and focus, which are essential factors for improving the understanding and acceptance of the change. – To gain acceptance and commitment among employees, especially leaders, Aibel focuses on communicating the vision.
How do the impact and reactions affect the implementation process of AI?	
Claims Link	***Aibel***
– The implementation directly influenced the employees by creating changes and new routines for the employees and leaders, with almost only positive outcomes for the employees and is not a potential factor in creating resistance toward a change. – The employees were mostly positive with the implementation process, some were skeptic, and some had immediate thoughts of being replaced.	– Implementing the system using AI affects the data quality, not the employees, and does not have any significant meaning for the employees and is not a possible factor in creating resistance toward a change. – The employees emphasized the reactions and fear of digitalization and losing tasks or jobs, and the uncertainty of not knowing possible outcomes, and a feeling of non-present and passive managers regarding the change and further development.

5.5 Revised conceptual model

In light of the theory, analysis, and discussion of the findings, we present a revised, and final conceptual model (Figure 4), developed from the first conceptual model (Figure 3). The model consists of a common denominator, understanding and motivation, and is included to represent the findings in our thesis better.

Figure 4. Revised conceptual model.



The existing literature emphasizes the different effects and significance of the main categories in the model for the success of change processes. However, throughout the study, motivation and understanding have emerged as an essential and common effect of goals and strategy, engagement and impact, and reaction. Moreover, our study points out that when the main initiatives are emphasized throughout the change process, and the impacts and reactions are mostly positive, it increases understanding and motivation, which can have a positive effect on the implementation of digitalization. On the other hand, it is believed that the lack of these initiatives, and negative impacts and reactions, can lead to the opposite and be an obstacle to success. Finally, the actions concerning goals and strategy, engagement, and the impacts and reactions are believed to affect motivation and understanding, thus affecting digitalization within artificial intelligence.

6. Limitations and directions for future research

We acknowledge that this study contains several limitations that should be addressed. The research question is relatively broad and open, and it may be necessary to investigate other factors that might influence the effect of change concerning digitalization within artificial intelligence in another way. Furthermore, the study is limited by specific open-ended questions, and the literature has been guiding the questions. Besides, we only investigated some AI technology types and may have omitted other potentially important technologies. Thus, it is possible that we have not uncovered other potential opportunities and challenges. Nevertheless, we have tried to accommodate this through thorough research of relevant literature, but also seen in the light of empiricism. Accordingly, further research should include other ways of investigating artificial intelligence on change management and different types of AI.

Moreover, we find the number of respondents as a limitation concerning the number of respondents is relatively small, as it makes it difficult to generalize the findings (Bryman & Bell, 2015). However, this study aims to gain a deeper knowledge of artificial intelligence concerning change management, in which a small number of respondents is more appropriate (Crouch & McKenzie, 2006). The interviews were conducted at a particular time and specific period of the change process. Hence, there might be some limitations regarding the respondent's reflections on the earlier stages of the implementation. Thus, this is a study of how the organizations are experiencing the change process. There is a limit to how generalizable our findings are, in order to elaborate and broaden our understanding of change and implementation regarding artificial intelligence, and future research is needed.

We have researched implementation processes regarding artificial intelligence in an independent settlement company and a service company within oil, gas, and offshore wind industries in Norway. It is natural to assume that the change process can be different in other industries and companies. Further research should look at the implementation of artificial intelligence in other industries and countries.

Lastly, this study's process and the collection of the data were influenced as a result of the effect due to the Covid-19 situation. The study's duration resulted in longer than expected, and the interviews were mostly conducted virtually. Furthermore, the supervisor's meetings have been through phone calls and emails. However, we managed to complete the study within the final postponed due date, with sufficient quality of data gathered.

7. Conclusion

Throughout the study, we set out to explore artificial intelligence concerning change management. We specifically investigated how goals and strategy, engagement, as well as how impact and reactions influence the effect of change management concerning digitalization within AI. Our study found that these factors have different effects on succeeding in the implementation of the change process.

We found that the importance of developing a plan to achieve a vision, and having a specific strategy and goals are emphasized differently in companies. A strategy and goals regarding change makes it easier to implement change, while clear routines and structures might make it easier to stick to it. Not having a particular strategy or plan does not explicitly make the change unlikely to succeed but results in a slow-going process. Our findings also indicate that the process might be influenced negatively without goals. However, our study also shows that a change concerning the implementation and further development of AI is not necessarily dependent on a specific strategy or goals regarding the change.

Furthermore, the findings established that anchoring in management is an essential factor for successful change. The change initiatives might come from employees, middle managers, and managers. Still, it is easier to implement the initiatives when managers see the need for change and are motivated and interested. We also found that emphasizing vision, values, and culture has formed the changes in AI digitalization, and it led to a successful change due to a better understanding and acceptance toward the implementation of the new technology of the employees.

Our findings also imply it is essential to create a project group when implementing change regarding AI as it leads to more cooperation, engagement, and involvement across various roles. It also enhances the understanding and meaning of the implementation. Moreover, when a guiding coalition is missing, it might result in challenges concerning the lack of necessary knowledge, resources, and time. Which further influences the ability to have an effective change process and further development. Focusing on institutionalizing new approaches enhance the chances of a

successful change process and bring new changes in further implementation processes to make the change stick.

We found that the respondents experience different reactions and impacts of the change initiatives. Some respondents expressed fear, uncertainty, and skepticism regarding digitalization, their jobs, and the outcomes. We found that communication is a critical factor in gaining recognition and in preventing resistance. Our findings indicate that changes in daily routines do not necessarily create resistance if the change is positively influencing the employees, such as having more meaningful tasks and work quality. Moreover, our findings show that highlighting short-term wins and progress and communicating the vision is essential in gaining understanding, acceptance, and commitment to the change, in light of motivated and focused employees. The study shows implementing both initiatives is of significance. However, the study also points to having a more explicit focus on one of the initiatives, as it might positively affect motivation and knowledge.

In summary, our study presents that changes concerning digitalization within AI might require the use of active change initiatives, which in return benefit from it. Focusing on goals, strategy and engagement is essential in keeping the employees motivated and committed. Their positive reactions and emotions will have a positive impact on digital implementation within artificial intelligence.

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Appendences

Appendix 1: Interview guides

Intervjuguide 1- Operative og mellomleder

Om intervjukandidat:

- Alder:
- Kjønn:
- Utdannelse:
- Fartstid:
- Stilling og stillingsbrøk:
- Lederansvar/ansvar:

Digitalisering med fokus på kunstig intelligens (KI):

1. Har du merket eller merker du at dere bruker KI teknologi på jobb?
2. Hva er ditt perspektiv på hvordan digitalisering i forhold til KI har påvirket bransjen?
3. Kan du fortelle om dine tidligere erfaringer med endringer på jobb?

- Positivt, negativt, ok?
- Noen erfaringer knyttet til digitalisering/KI?
- Blir nye endringer påvirket av dine erfaringer rundt dette? Eventuelt ikke erfaringer.

4. Hva er dine forventninger når du blir fortalt at det skal implementeres ny teknologi som for eksempel KI på jobb?

Implementering & endringsprosess:

5. Har dere en rutine eller en vanlig prosess som følges ved implementering av endringer i bedriften? Hvordan skjer dette?
6. Hvordan vil du beskrive tilbudet organisasjonen tilbyr av trening og opplæring i forbindelse med introduksjon av nye digitale verktøy?

7. Hvordan vil du beskrive at måten organisasjonen implementerer digitale verktøy på er i samsvar med dine behov for å best mulig ta de i bruk?
    - *Forberedt, forståelse, tilretteleggelse?*
8. Har du opplevd utfordringer knyttet til implementeringen av KI?
9. Om du ble bedt om å komme med forslag til hvordan organisasjonen bedre kunne introdusert og implementert ny KI teknologi, hva ville de anbefalingene vært?

Påvirkning og reaksjoner i selskapet:

10. Hvordan påvirker dette dag til dag rutiner/gjøremål?
11. Hvilke faktorer driver teknologiske endringer i selskapet? Er det ansatte, eller ledere?
12. Hvordan føler du at de ansatte har tatt imot denne endringen?
13. Hvilke menneskelige og organisatoriske utfordringer har dere møtt, og har de påvirket dagligdagse gjøremål?
14. Hva gjør dere for å møte slike utfordringer?

Er det noe du ønsker å legge til eller kommentere?

Intervjuguide 2 - Ledere

Om intervjukandidat:

- Alder
- Kjønn
- Utdannelse:
- Fartstid:
- Stilling og stillingsbrøk:
- Lederansvar/ansvar:

Målsetninger og strategi knyttet til digitalisering og kunstig intelligens (KI):

1. Hva er ditt perspektiv på hvordan digitalisering i forhold til KI har påvirket bransjen?
2. Hvor viktig er det for dere å følge den digitale utviklingen?
3. Hva er deres strategi når det gjelder digitalisering og implementering av teknologi som KI?

4. Har dere satt dere noen kortsiktige eller langsiktige mål?
5. Hva ønsker dere å oppnå ved å implementere slik teknologi?
6. Hvor lang tid tenker dere å bruke på denne implementeringen?
7. Å implementere KI kan ta tid og mye penger. Er dette noe dere tenker særlig over?

Engasjement rundt implementering av KI:

8. Hvordan organiserer dere endringene, er det noen spesifikke tiltak eller initiativer dere gjør/har gjort? Er det spesifikke personer som får ansvar for roller for å lede dette?
9. Hva har dere gjort for å få ansatte til å forstå/akseptere implementeringen av ny teknologi?
10. Har dere gjort noe for å forme kulturen for å forsterke implementeringen av ny teknologi?
11. Hva er dine forventninger når du blir fortalt at det skal implementeres ny teknologi?

Effekten av implementering:

12. Hvordan har implementeringen vært i forhold dine mål?
13. Er dere der dere har planlagt å være i prosessen?
14. Har dere gjort noen justering med tanke på mål?
15. Har dere ulike oppfatninger av hva som er suksess i selskapet? Hvis ja, forklar.
16. Hvordan måler dere effekten av KI?

Påvirkning og reaksjoner i selskapet:

17. Kan du fortelle om dine tidligere erfaringer med endringer på jobb?
18. Hvordan påvirker dette dag til dag rutiner/gjøremål?
19. Hvilke faktorer driver teknologiske endringer i selskapet? Er det ansatte, eller ledere?
20. Hvordan føler du at de ansatte har tatt imot denne endringen?
21. Hvilke menneskelige og organisatoriske utfordringer har dere møtt, og har de påvirket dagligdagse gjøremål?

22. Hva gjør dere for å møte slike utfordringer?

Er det noe du ønsker å legge til eller kommentere?

Appendix 2: Consent form

Vil du delta i forskningsprosjektet *"[Endringsledelse og kunstig intelligens]"*?

Dette er et spørsmål til deg om å delta i et forskningsprosjekt hvor formålet er å samle kunnskap og undersøke hvordan kunstig intelligens påvirker endringsledelse og organisasjonsendringer. I dette skrivet gir vi deg informasjon om målene for prosjektet og hva deltakelse vil innebære for deg.

Formål

Formålet med dette prosjektet er å samle kunnskap og undersøke hvordan kunstig intelligens påvirker endringsledelse og organisasjonsendringer. Mer spesifikt ønsker vi å få en større oversikt og innsikt fra forskjellige perspektiver knyttet til implementering og endring i forhold til kunstig intelligens. Prosjektet er en masteroppgave for linjen Master of Science in Business med major i Leadership and Change ved Handelshøyskolen BI, Oslo.

Hvem er ansvarlig for forskningsprosjektet?

Handelshøyskolen BI er ansvarlig for prosjektet.

Hvorfor får du spørsmål om å delta?

Din arbeidsgiver har rekruttert og identifisert deg som deltaker til prosjektet. Det tas sikte på å rekruttere ca. 5-6 personer til dette prosjektet.

Hva innebærer det for deg å delta?

Hvis du velger å delta i dette prosjektet, innebærer det at du deltar i et dybdeintervju som vil ta deg rundt 45-60 minutter. Intervjuspørsmålene er relatert til individuelle, organisatoriske og teknologiske faktorer knyttet til implementeringen og bruk av

kunstig intelligens i organisasjonen. Det vil bli tatt lydopptak og notater under intervjuet.

Det er frivillig å delta

Det er frivillig å delta i prosjektet. Hvis du velger å delta, kan du når som helst trekke samtykke tilbake uten å oppgi noen grunn. Alle opplysninger om deg vil da bli anonymisert. Det vil ikke ha noen negative konsekvenser for deg hvis du ikke vil delta eller senere velger å trekke deg. Dette vil ikke gå utover eller påvirke ditt forhold med din arbeidsgiver.

Ditt personvern – hvordan vi oppbevarer og bruker dine opplysninger

Vi vil bare bruke opplysningene om deg til formålene vi har fortalt om i dette skrivet. Vi behandler opplysningene konfidensielt og i samsvar med personvernregelverket. Det er kun prosjektgruppen, bestående av to studenter og veileder som vil ha tilgang til dine opplysninger.

Informasjonen du gir oss vil bli lagret i en lukket mappe gjennom skytjenesten Google Drive.

Hva skjer med opplysningene dine når vi avslutter forskningsprosjektet?

Prosjektet skal etter planen avsluttes 1.07.2020. Da vil alle notater fra intervjuet og opptak slettes.

Dine rettigheter

Så lenge du kan identifiseres i datamaterialet, har du rett til:

- innsyn i hvilke personopplysninger som er registrert om deg,
- å få rettet personopplysninger om deg,
- få slettet personopplysninger om deg,
- få utlevert en kopi av dine personopplysninger (dataportabilitet), og
- å sende klage til personvernombudet eller Datatilsynet om behandlingen av dine personopplysninger.

Hva gir oss rett til å behandle personopplysninger om deg?

Vi behandler opplysninger om deg basert på ditt samtykke.

På oppdrag fra Handelshøyskolen BI har NSD – Norsk senter for forskningsdata AS vurdert at behandlingen av personopplysninger i dette prosjektet er i samsvar med personvernregelverket.

Hvor kan jeg finne ut mer?

Hvis du har spørsmål til studien, eller ønsker å benytte deg av dine rettigheter, ta kontakt med:

- Handelshøyskolen BI ved Tom Rosendahl (tlf. +47 464 10 751), Roshiel Angela Nydal (tlf. +47 415 00 383), eller Mai Linn Nguyen (tlf. +47 413 05 839).
- NSD – Norsk senter for forskningsdata AS, på epost (personverntjenester@nsd.no) eller telefon: 55 58 21 17.

Med vennlig hilsen

Roshiel Angela Nydal Mai Linn Nguyen (Masterstudent) (Masterstudent)

Samtykkeerklæring

Jeg har mottatt og forstått informasjon om prosjektet *Endringsledelse og kunstig intelligens*, og har fått anledning til å stille spørsmål. Jeg samtykker til: å delta i intervju

Jeg samtykker til at mine opplysninger behandles frem til prosjektet er avsluttet, ca.

01.07.2020

(Signert av prosjektdeltaker, dato)

Vil du delta i forskningsprosjektet *"[Endringsledelse og kunstig intelligens]"*?

Dette er et spørsmål til deg om å delta i et forskningsprosjekt hvor formålet er å samle kunnskap og undersøke hvordan kunstig intelligens påvirker endringsledelse og organisasjonsendringer. I dette skrivet gir vi deg informasjon om målene for prosjektet og hva deltakelse vil innebære for deg.

Formål

Formålet med dette prosjektet er å samle kunnskap og undersøke hvordan kunstig intelligens påvirker endringsledelse og organisasjonsendringer. Mer spesifikt ønsker vi å få en større oversikt og innsikt fra forskjellige perspektiver knyttet til implementering og endring i forhold til kunstig intelligens. Prosjektet er en masteroppgave for linjen Master of Science in Business med major i Leadership and Change ved Handelshøyskolen BI, Oslo.

Hvem er ansvarlig for forskningsprosjektet?

Handelshøyskolen BI er ansvarlig for prosjektet.

Hvorfor får du spørsmål om å delta?

Din arbeidsgiver har rekruttert og identifisert deg som deltaker til prosjektet. Det tas sikte på å rekruttere ca. 4-5 personer til dette prosjektet.

Hva innebærer det for deg å delta?

Hvis du velger å delta i dette prosjektet, innebærer det at du deltar i et dybdeintervju som vil ta deg rundt 45-60 minutter. Intervjuspørsmålene er relatert til individuelle, organisatoriske og teknologiske faktorer knyttet til implementeringen og bruk av kunstig intelligens i organisasjonen. Det vil bli tatt lydopptak og notater under intervjuet.

Det er frivillig å delta

Det er frivillig å delta i prosjektet. Hvis du velger å delta, kan du når som helst trekke samtykke tilbake uten å oppgi noen grunn. Alle opplysninger om deg vil da bli anonymisert. Det vil ikke ha noen negative konsekvenser for deg hvis du ikke vil delta eller senere velger å trekke deg. Dette vil ikke gå utover eller påvirke ditt forhold med din arbeidsgiver.

Ditt personvern – hvordan vi oppbevarer og bruker dine opplysninger

Vi vil bare bruke opplysningene om deg til formålene vi har fortalt om i dette skrivet. Vi behandler opplysningene konfidensielt og i samsvar med personvernregelverket. Det er kun prosjektgruppen, bestående av to studenter og veileder som vil ha tilgang til dine opplysninger.

Informasjonen du gir oss vil bli lagret i en lukket mappe gjennom skytjenesten Google Drive.

Hva skjer med opplysningene dine når vi avslutter forskningsprosjektet?

Prosjektet skal etter planen avsluttes 1.07.2020. Da vil alle notater fra intervjuet og opptak slettes.

Dine rettigheter

Så lenge du kan identifiseres i datamaterialet, har du rett til:

- innsyn i hvilke personopplysninger som er registrert om deg,
- å få rettet personopplysninger om deg,
- få slettet personopplysninger om deg,
- få utlevert en kopi av dine personopplysninger (dataportabilitet), og
- å sende klage til personvernombudet eller Datatilsynet om behandlingen av dine personopplysninger.

Hva gir oss rett til å behandle personopplysninger om deg?

Vi behandler opplysninger om deg basert på ditt samtykke.

På oppdrag fra Handelshøyskolen BI har NSD – Norsk senter for forskningsdata AS vurdert at behandlingen av personopplysninger i dette prosjektet er i samsvar med personvernregelverket.

Hvor kan jeg finne ut mer?
Hvis du har spørsmål til studien, eller ønsker å benytte deg av dine rettigheter, ta kontakt med:

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Roshiel Angela Nydal Mai Linn Nguyen (Masterstudent) (Masterstudent)

Samtykkeerklæring

Jeg har mottatt og forstått informasjon om prosjektet *Endringsledelse og kunstig intelligens*, og har fått anledning til å stille spørsmål. Jeg samtykker til: å delta i intervju

Jeg samtykker til at mine opplysninger behandles frem til prosjektet er avsluttet, ca.

01.07.2020

(Signert av prosjektdeltaker, dato)

Appendix 3: Approvals from NSD

Det innsendte meldeskjemaet med referansekode 792071 er nå vurdert av NSD.

Følgende vurdering er gitt:
Det er vår vurdering at behandlingen av personopplysninger i prosjektet vil være i samsvar med personvernlovgivningen så fremt den gjennomføres i tråd med det som er dokumentert i meldeskjemaet 02.03.2020 med vedlegg, samt i meldingsdialogen mellom innmelder og NSD. Behandlingen kan starte.

MELD VESENTLIGE ENDRINGER
Dersom det skjer vesentlige endringer i behandlingen av personopplysninger, kan det være nødvendig å melde dette til NSD ved å oppdatere meldeskjemaet. Før du melder inn en endring, oppfordrer vi deg til å lese om hvilke type endringer det er nødvendig å melde: nsd.no/personvernombud/meld_prosjekt/meld_endringer.html Du må vente på svar fra NSD før endringen gjennomføres.

TYPE OPPLYSNINGER OG VARIGHET
Prosjektet vil behandle alminnelige kategorier av personopplysninger frem til 01.07.2020.

LOVLIG GRUNNLAG
Prosjektet vil innhente samtykke fra de registrerte til behandlingen av personopplysninger. Vår vurdering er at prosjektet legger opp til et samtykke i samsvar med kravene i art. 4 og 7, ved at det er en frivillig, spesifikk, informert og utvetydig bekreftelse som kan dokumenteres, og som den registrerte kan trekke tilbake. Lovlig grunnlag for behandlingen vil dermed være den registrertes samtykke, jf. personvernforordningen art. 6 nr. 1 bokstav a.

PERSONVERNPRINSIPPER
NSD vurderer at den planlagte behandlingen av personopplysninger vil følge prinsippene i personvernforordningen om: - lovlighet, rettferdighet og åpenhet (art.

5.1 a), ved at de registrerte får tilfredsstillende informasjon om og samtykker til behandlingen - formålsbegrensning (art. 5.1 b), ved at personopplysninger samles inn for spesifikke, uttrykkelig angitte og berettigede formål, og ikke viderebehandles til nye uforenlige formål - dataminimering (art. 5.1 c), ved at det kun behandles opplysninger som er adekvate, relevante og nødvendige for formålet med prosjektet - lagringsbegrensning (art. 5.1 e), ved at personopplysningene ikke lagres lengre enn nødvendig for å oppfylle formålet

DE REGISTRERTES RETTIGHETER

Så lenge de registrerte kan identifiseres i datamaterialet vil de ha følgende rettigheter: åpenhet (art. 12), informasjon (art. 13), innsyn (art. 15), retting (art. 16), sletting (art. 17), begrensning (art. 18), underretning (art. 19), dataportabilitet (art. 20). NSD vurderer at informasjonen som de registrerte vil motta oppfyller lovens krav til form og innhold, jf. art. 12.1 og art. 13. Vi minner om at hvis en registrert tar kontakt om sine rettigheter, har behandlingsansvarlig institusjon plikt til å svare innen en måned.

FØLG DIN INSTITUSJONS RETNINGSLINJER

NSD legger til grunn at behandlingen oppfyller kravene i personvernforordningen om riktighet (art. 5.1 d), integritet og konfidensialitet (art. 5.1. f) og sikkerhet (art. 32). Microsoft er databehandler i prosjektet. NSD legger til grunn at behandlingen oppfyller kravene til bruk av databehandler, jf. art 28 og 29. For å forsikre dere om at kravene oppfylles, må dere følge interne retningslinjer og eventuelt rådføre dere med behandlingsansvarlig institusjon.

OPPFØLGING AV PROSJEKTET

NSD vil følge opp ved planlagt avslutning for å avklare om behandlingen av personopplysningene er avsluttet.

Lykke til med prosjektet!

Kontaktperson hos NSD: Tore Andre Kjetland Fjeldsbø

Tlf. Personverntjenester: 55 58 21 17 (tast 1)

Det innsendte meldeskjemaet med referansekode 792071 er nå vurdert av NSD.
Følgende vurdering er gitt: NSD har vurdert endringen registrert 01.07.2020.
Vi har nå registrert 01.09.2020 som ny sluttdato for forskningsperioden.

NSD vil følge opp ved ny planlagt avslutning for å avklare om behandlingen av personopplysningene er avsluttet.

Lykke til videre med prosjektet!
Tlf. Personverntjenester: 55 58 21 17 (tast 1)