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Agile Change Management

Developing an agile change management
framework based on Norwegian change
management practises

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Problem Description

In this master's thesis, we develop a framework for managing change in uncertain environments based on an empirical study of change management practices in eight Norwegian companies in different industries. Currently, companies are facing an increasing degree of uncertainty, and a faster pace of change. The field of software development has faced similar challenges. This led to the development of "agile methodologies", which are concerned with managing uncertainty. We seek to study how agile concepts can be applied to manage change in uncertain environments to possibly increase the rate of successful organisational change.

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Preface

This is a master's thesis in strategic change management at NTNU as part of the study programme Industrial Economics and Technology Management. The work in this thesis has been carried out during the spring semester of 2017 and is based on a project thesis on the same subject from the autumn semester of 2016. Because of this, some of the theory presented is the same as in the previous work. The motivation behind this thesis is primarily to do an empirical analysis on change management practises in Norway in order to develop a framework for how companies can manage change in uncertain environments. Currently, companies are facing an increasing degree of uncertainty and a faster pace of change. Therefore, we study how agile concepts can be used to manage change in uncertain environments to possibly increase the rate of successful organisational change. The study has been carried out in cooperation with eight Norwegian companies in different industries. We gained access to the companies by contacting them through either public contact points, or by contacting other relevant employees in the companies. These contact persons provided us with informants we could interview. The study has been financed solely by the authors. This thesis is primarily written for readers with knowledge of change management, but will also have value for anyone with an interest in the subject.

Trondheim, 2017-06-11



Kristoffer Ramberg Karud

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K.R.K. and K.V.Å.

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Summary and Conclusions

Change management is a major challenge for organisations today, and one of the biggest challenges of change management is uncertainty. Companies are facing increasing competition, globalisation, and digitalisation, and changes happen faster than before. This demands flexible organisations able to change rapidly in uncertain environments, which makes plan-driven approaches to change management less suited.

The field of software development has faced similar challenges, which resulted in the development of so-called "agile methods", which are focused on dealing with uncertainty and being able to quickly adapt to changing environments. We argue that some of the concepts used in agile software development can be applied to change management as well. This could result in change management processes focused on dealing with uncertainty and quickly adapt to uncertain and unpredictable environments.

In this thesis, we develop a framework for agile change management based on a qualitative, empirical multiple-case study of Norwegian change management practices. The study is based on interviews with 28 informants from eight companies focusing on 13 different change cases. Several of these companies already use agile concepts in their approaches to change management. The empirical data are analysed using theoretical perspectives from both current change management literature and literature concerned with both agile concepts and uncertainty. The result of this analysis is a detailed framework specifying how companies can use agile concepts to manage change when faced with uncertainty.

The framework consists of two main parts and a set of prerequisites. The first part is the use of autonomous change teams. We argue that by using a multi-disciplinary change team with members from different levels of the organisation, one ensures that several different perspectives on the change are considered during the implementation. The team follows goals set by the top-management. In this way, the top-management sets the direction for the change, but the team is responsible for the actual implementation. We find that the team should be structurally separated from the rest of the organisation if the rest of the organisation is plan-driven to ensure the flexibility the team requires. We argue that the team leader should act as a facilitator for the team, which entails that the primary role of the leader is to enable the rest of the team to

function. An aspect of this is that decisions should be made in a democratic fashion within the team, to ensure totality.

The second part of the framework is the agile change process. We argue that the change team should implement the change by using a series of short iterations. In practice, this entails that the change team breaks the goals set by the top-management down into sub-goals, where each sub-goal can be implemented separately in relatively short time. The team then implements changes to meet the sub-goals one at a time, in prioritised order. Each one of these change implementations is called an iteration. This allows the change team to re-evaluate the project in between iterations, re-prioritise and adjust sub-goals, and continuously evaluate the success and progress of the change project. We argue that this approach makes dealing with uncertainty easier, as the change team can adapt to unforeseen events during the implementation, by changing direction in between iterations. The prerequisites we identify, which an organisation needs to use agile change management efficiently, are: challenges related to uncertainty, a continuous view on change, a balance between short term and long term goals, an agile culture focused on involvement and cooperation, a low power distance between management and employees, understanding for the agile methodology, formalisation of the agile change processes, a certain amount of standardised processes, and defined channels and mechanisms for communication and feedback.

This thesis contributes to the field of change management in several ways. The thesis provides insight into how Norwegian companies manage change when faced with uncertainty. In addition, we show which concepts from the field of agile software development that can be used in change management. Based on these concepts and the insight in Norwegian companies' change practices, we develop a framework which Norwegian companies can use for managing change in uncertain and unpredictable environments.

Sammendrag

Endringsledelse er en stor utfordring for organisasjoner i dag, og en av de største utfordringene i endringsledelse er usikkerhet. Bedrifter står overfor økende konkurranse, globalisering og digitalisering, og endringer skjer raskere enn tidligere. Dette krever fleksible organisasjoner som kan endre seg raskt under usikkerhet, noe som gjør plandrevne tilnærminger til endringsledelse mindre egnet.

Programvareutvikling har møtt lignende utfordringer, noe som resulterte i utviklingen av såkalte "agile metodikker" som er fokusert på å håndtere usikkerhet og å kunne tilpasse seg raskt til skiftende omgivelser. Vi hevder at noen av konseptene som brukes i agil programvareutvikling kan brukes i endringsledelse. Dette kan føre til endringsledelsesprosesser som er i stand til å håndtere usikkerhet og raskt tilpasse seg uforutsigbare omgivelser.

I denne avhandlingen utvikler vi et rammeverk for agil endringsledelse basert på en kvalitativ, empirisk fler-case-studie av endringsledelse i norske bedrifter. Studien er basert på intervjuer med 28 informanter fra åtte selskaper med fokus på 13 forskjellige endringscaser. Flere av disse selskapene bruker allerede agile konsepter i deres tilnærminger til endringsledelse. De empiriske dataene analyseres ved å bruke teoretiske perspektiver fra både endringsledelseslitteratur og litteratur som omhandler både agile konsepter og usikkerhet. Resultatet av denne analysen er et detaljert rammeverk som spesifiserer hvordan selskaper kan bruke agile konsepter for å håndtere endring når de står overfor usikkerhet.

Rammeverket består av to hoveddeler og et sett av forutsetninger. Den første delen er bruk av autonome endringsteam. Vi hevder at ved å bruke et tverrfaglig endringsteam med medlemmer fra ulike nivåer i organisasjonen, sikrer man at flere ulike perspektiver på endringen vurderes under implementeringen. Teamet følger mål satt av toppledelsen. På denne måten setter toppledelsen rammene for endringen, men teamet er ansvarlig for den faktiske implementeringen. Vi argumenterer for at teamet skal være strukturelt skilt fra resten av organisasjonen dersom resten av organisasjonen er plandrevet for å sikre fleksibilitet. Vi argumenterer for at prosjektlederen skal fungere som en tilrettelegger for teamet, noe som innebærer at lederens primære rolle er å tilrettelegge for resten av teamet. Et aspekt av dette er at beslutninger skal gjøres på en demokratisk måte i teamet for å sikre totalitet.

Den andre delen av rammeverket er den fleksible endringsprosessen. Vi argumenterer for at endringsteamet skal implementere endringen ved å bruke en rekke korte iterasjoner. I praksis innebærer dette at endringsteamet bryter målene som toppledelsen har satt ned i delmål, hvor hvert delmål kan implementeres separat på relativt kort tid. Teamet implementerer deretter endringer for å møte delmålene en om gangen, i en prioritert rekkefølge. Hver av disse endringsimplementasjonene kalles en iterasjon. Dette gjør at endringsteamet kan revurdere prosjektet mellom iterasjoner, prioritere og justere delmål, og kontinuerlig vurdere suksess og fremgang i endringsprosjektet. Vi argumenterer for at denne tilnærmingen gjør det enklere å håndtere usikkerhet, da endringsteamet kan tilpasse seg uforutsette hendelser under implementeringen, ved å endre retning mellom iterasjoner. Forutsetningene vi identifiserer for agil endringsledelse er: utfordringer knyttet til usikkerhet, et kontinuerlig syn på endring, en balanse mellom kort-siktige og langsiktige mål, en fleksibel kultur med fokus på medvirkning og samarbeid, en lav maktavstand mellom ledelse og ansatte, forståelse for den agile metoden, formalisering av de agile endringsprosessene, en passende grad av standardiserte prosesser og definerte kanaler og mekanismer for kommunikasjon og feedback.

Denne avhandlingen bidrar til endringsledelse på flere måter. Avhandlingen gir innsikt i hvordan norske bedrifter leder endringsprosesser når de står overfor usikkerhet. I tillegg viser vi hvilke konsepter fra agil programvareutvikling som kan brukes i endringsledelse. Basert på konseptene og innsikten i norske selskapers endringspraksis utvikler vi et rammeverk som norske bedrifter kan bruke til å håndtere endringer i usikre og uforutsigbare omgivelser.

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Chapter 1

Introduction

Change management is a major challenge for organisations today. According to [Ashkenas \(2013\)](#), studies show a 60-70 % failure rate for organisational change projects. Additionally, [Bossidy and Charan \(2002, p.15\)](#) state that "change comes faster than ever". Thus, we argue that change management is even more difficult and important than before.

One important aspect of the increased difficulty in change management is uncertainty. [Sushil and Stohr \(2014, p.25\)](#) argue that companies are facing increasing competition, globalisation and rapidly advancing technology. They argue that these factors cause uncertainty, and create a need for more flexible organisations. This increased uncertainty makes planning change projects more difficult. According to [D'Souza and Renner \(2016, p.85-86\)](#), it is impossible to know what the desired future should look like, and thus also impossible to plan change projects in detail. There are simply too many variables and too much uncertainty. This creates a need for more flexible change management processes that do not depend on planning. According to [Nandakumar et al. \(2014, p.1\)](#), such flexible processes can help organisations cope with uncertainty. Thus, we argue the need for flexible change management which is able to handle uncertainty.

The issue of uncertainty is, however, not unique to change management. Some of the same challenges have been addressed in the field of software development through the development of "agile methodologies", or "Agile". According to [Dingsøyr et al. \(2010, p.1\)](#), agile methodologies are a reaction to more traditional plan-driven methods for managing software development projects, as Agile is concerned with accepting uncertainty and managing unpredictability

(Dingsøy et al., 2012, 2010, p.1).

Using agile concepts might be beneficial outside of software engineering as well. According to several researchers, Agile is currently spreading to other fields, like strategy and management (Rigby et al., 2016; Dingsøy et al., 2010, 2012; Bosch, 2016; Franklin, 2014). According to Rigby et al. (2016), agile methodologies have increased efficiency in software development by up to 80 % and they argue that similar results can be achieved in other fields, like strategy and change management, as well. Therefore, we seek to study the possibility of applying agile concepts to change management in order to develop a framework for change management suited for handling uncertainty.

We have studied this topic theoretically in our project thesis (Karud and Årvik, 2016). In the project thesis we developed a basic theoretical framework for agile change management, which we seek to further develop in this thesis, based on an empirical study.

The main problem we seek to answer is how companies can manage change processes in uncertain and unpredictable environments. Based on this, the main research question this thesis will seek to answer is:

"In which ways can companies manage change in unpredictable environments using agile change management?"

To answer this, we will answer the following two sub-questions:

1. Which parts and aspects of Agile can be applicable to change management?
2. What is required for companies to use agile change management efficiently?

These two sub-questions lay the foundation for the agile framework for change management this thesis presents. This framework will answer our main research question, as it will present how and under which conditions agile concepts can be used to manage change processes in unpredictable environments.

In order to study this, we have interviewed informants from eight Norwegian companies in different industries about their experiences with changes in uncertain environments. Two of the greatest challenges that many of our case companies are facing are the oil crisis, and rapid digitalisation.

This study is of interest for companies facing similar challenges, as well as for academics with an interest in change management and Norwegian business practises. It is also a highly relevant topic, as many Norwegian businesses are currently facing challenges related to uncertainty in the oil industry and the rapid digitalisation. The topic of agile change management is also relatively unexplored in academic literature. This means that this thesis has both practical and theoretical value.

Because we have only studied Norwegian companies, the scope of this study will primarily be agile change management in a Norwegian business context. This means that the results of our study will not necessarily be directly applicable to companies in other countries; this will be further discussed in chapter 2.

The rest of the report is organised as follows: Chapter 2 describes the research method utilised in this thesis. Chapter 3 is concerned with the theoretical foundation for this thesis, and chapter 4 then presents our case companies. Chapter 5 presents our empirical data on current change management practises in the case companies, and in chapter 6 we present our key findings and a concept analysis on these data. This concept analysis is used to further develop our framework for agile change management in chapter 7. Finally, chapter 8 consists of our summary and conclusions, as well as recommendations for further work.

Chapter 2

Research Method

This master's thesis study has been conducted as a qualitative multi-case study through the use of semi-structured interviews, where the data has been analysed based on causal networks. These methods, which make up the research design of the thesis, will all be discussed in this chapter. In addition, we will discuss the quality and limitations of our approach, as well as ethical aspects of our research. Our research approach can be seen as an abductive approach, which means that it has elements from both the inductive and the deductive approaches where we utilise the empirical data for induction, but theories and perspectives influence our work before or during the research process (Alvesson and Sköldbberg 2009:4 as cited in [Tjora, 2013](#), p.26).

[Miles and Huberman \(1994, p.18\)](#) argue that one should build a conceptual framework, describing the key factors and variables to be studied. Our project thesis ([Karud and Årvik, 2016](#)) serves as such a conceptual framework. The level of detail of this conceptual framework will depend on how confirmatory or exploratory the study design is, but [Miles and Huberman \(1994, p.18\)](#) argue that even an inductive study will have some form of preconceptions, and in making the framework, one can focus the study on the factors most likely to be meaningful. We have built our research questions and research design on this conceptual framework, in accordance with [Miles and Huberman \(1994, p.22\)](#).

[Miles and Huberman \(1994, p.17\)](#) argue that qualitative studies can be loosely designed up to a certain point. They argue that for inexperienced researchers, a very loose and inductive study could be a waste of time. They state that "Months of field work and voluminous case studies may

yield only a few banalities". Therefore, a tighter design can provide clarity and focus, as opposed to a grounded design, according to [Miles and Huberman \(1994, p.17\)](#). In addition, they argue that when working with a multiple-case study, a framework can help with the comparability between the different cases ([Miles and Huberman, 1994, p.17](#)). However, a qualitative study should not be too tight either, as it could become less case-sensitive according to [Miles and Huberman \(1994, p.18\)](#).

2.1 Approach to finding theory

As already discussed, our project thesis ([Karud and Årvik, 2016](#)) serves as our theoretical basis for conducting this empirical study. During the study we identified several aspects which warranted more in-depth literature. Because of the scarcity of agile change management literature much of the literature we have used in this thesis is concerned with different aspects and concepts which we identified during the study, and not agile change management directly. Due to the close relation between this master's thesis and our project thesis, some of the literature from the project thesis is directly reproduced in the literature survey in chapter 3. This is done to avoid depending on the reader also having read the project thesis.

When sampling literature for our literature review we used purposive sampling, which [Bryman \(2016, p.410\)](#) defines as sampling in a strategic way, without relying on probability. This was used in order to pick the most relevant books and articles on the identified aspects ([Bryman, 2016, p.410](#)). Our main methods for collecting literature have been literature from the curriculum of the study programme, contributions by supervisors and Internet-based searches. The Internet-based searches have been for the most part conducted on Oria and Google Scholar, searching for terms related to the identified aspects.

2.2 Approach for data collection

The data collection for this thesis is carried out as a qualitative multi-case study. The study has been carried out qualitatively, due to several factors. Firstly, due to the lack of existing quantitative data on the subject (agile change management) a qualitative approach is more suited,

according to [Bryman \(2016, p.311\)](#). The lack of pre-existing data would have made it difficult to create a good questionnaire. Secondly, it allows us to develop and change our direction when carrying out the study ([Bryman, 2016, p.404](#)). This flexibility is favourable because of how little is known before each interview. Because qualitative research is context-dependent and we had limited knowledge in advance, we sought to have our data collection-phase as early as possible. According to [Tjora \(2013, p.13\)](#), this makes it possible for us to adjust the theory and our perspective to what we find interesting in the empirical analysis. In retrospect, this was an important aspect of our method due to the fact that we ended up studying different cases which were deemed interesting during the project.

2.2.1 Case based approach

A case study approach is chosen because of the complexity of the subject being studied ([Bryman, 2016, p.66](#)), change management, and the difficulty of understanding the subject outside of the context that the change takes place in. [Dawson \(1996\)](#) argues that it is only through empirically rich detailed case-studies that the muddled and, at times, contradictory processes of change can be highlighted and examined. We study several cases of change practises in Norwegian companies in order to be able to compare different approaches and understand the cases in relation to each other. In this situation the design of studying more than one case at one single point in time, and looking at more variables, is suited according to [Bryman \(2016, p.58\)](#). Our approach is, therefore, a multiple case study. According to [Stake \(2005, p.445-446\)](#), this approach may be used "to investigate a phenomenon, population or general condition". The phenomenon we want to study is change management under uncertainty.

All the interviews were carried out in January, February and March of 2017. The main goal is not comparing the cases to each other, but building on the collection of practises to understand how Norwegian companies handle change management. The multiple-case study approach is also chosen because it is a low-effort approach for the companies involved. This makes it more likely for us to gain access to the interesting cases. In addition, when contacting the companies, we have focused on current changes and their reaction to current events. It also allows us to gain insight into different companies in different sectors, which increases the degree to which our findings can be generalised.

2.2.2 Sampling the cases and informants

The sampling of context (which types of companies), sampling of participants (which companies), and sampling of informants (the interviewees) have been done as a form of purposive sampling, in the sense that we have chosen which companies we have approached according to criteria discussed below (Bryman, 2016, p.416-418). The companies have been sampled as a form of typical case sampling with elements of snowball sampling (Bryman, 2016, p.419). Typical case sampling involves that we chose companies meeting some of the criteria presented in our project thesis (Karud and Årvik, 2016), mainly that the companies are dealing with uncertainty and are currently changing. Since we have focused on Norwegian companies the criterion of low power distance is expected to be fulfilled. Snowball sampling involves that we in several of the cases have gained access to new cases or informants within the company after having scheduled an appointment or after some of the interviews (Bryman, 2016, p.424). In other words, our context sampling consisted of approaching Norwegian companies that have recently faced or are facing uncertain environments and changes. Arguably, this applies to most companies in 2017 and this allowed to approach many different companies. We mainly focused on companies where we either knew someone working for the company, or which we had a previous connection to ourselves. Thus, the sampling exhibits elements of convenience sampling as well, in that some companies were sampled due to their accessibility (Bryman, 2016, p.201). In practice this consisted of us sending out e-mails to many different companies, with a focus on our pre-existing network. In general the companies were interested in the subject of change management and we received positive responses from most of the companies we contacted. In the end we had to turn down some companies due to both time limitations and financial limitations.

This led to us sampling either tech-related companies, which are facing high degree of uncertainty regarding how to handle the rapid technological development, or companies that have been very dependent on the oil-industry and because of this dependency have had to adapt to the current oil crisis. We have sought to have some variations between the cases, but there are some similarities to make sure the cases are relevant to the field of change management (Tjora, 2013, p.149). The companies in our sample have a large range in size, from about 30 employees to above 10 000. We have companies who have a century long history, and companies with a

Company	Description	Informants
Infrastructure Company A	Company supplying and maintaining critical infrastructure	2
Infrastructure Company B	Supplier of infrastructure solutions and products	5
IT Consulting Company	A tech company delivering software solutions	3
Production Company	Processing company	3
Shipyard Company	A shipyard producing one offshore-oil related product	4
Shipowner Company	Company with a fleet of offshore vessels	3
Engineering Company A	A company delivering technological solutions and design within shipping	3
Engineering Company B	Company designing, developing and building ships and maritime solutions	5

Table 2.1: Overview of the companies

decade long history. All of the companies in our sample meet the two main criteria. The case companies are introduced in table 2.1.

Sampling informants in each company followed a similar approach, a purposive sampling approach. We sought to gain insight in different aspects of the change processes, therefore, we wanted to interview both leaders/managers, engineers and, in some cases, operators and union representatives. During the cooperation with the companies our point of contact set up interviews with other informants, which they felt were helpful to our research after we had specified that we wanted information from different levels of the organisation. Some elements of snowball sampling can also be found, in the sense that several times an interview with an informant triggered an interest in another part of the company, which led to us or our point of contact setting up an interview with another informant.

2.2.3 Semi-structured interviewing

We have used a semi-structured approach when interviewing the informants, as it offers a flexible interview process (Bryman, 2016, p.471). This allows the informants to frame their answers according to the context of their workplace (Bryman, 2016, p.471), which in turn might generate deeper insight than a structured interview could accomplish. The goal of semi-structured

interviews is to create a situation for open conversations, where the informant reflects over experiences and opinions related to the subject set by the researcher through open questions (Tjora, 2013, p.104-105). This can create digressions which are deemed relevant to the subject later on (Tjora, 2013, p.105). Semi-structured interviews are not all about the informants, but can be used to understand contexts outside of the individuals (Tjora, 2013, p.106). Since our chosen focus areas for each company were fairly clear, a semi-structured approach was suited (Bryman, 2016, p.472). A completely unstructured approach was not adopted because of the need for some structure to ensure cross-case comparability (Bryman, 2016, p.472). In addition, a favourable trait with semi-structured interviews is the fact that the researchers have the possibility to use what the informant says to guide the interview and at the same time allows the informant to bring in themes that was not present in the interview-guide (Tjora, 2013, p.129). In practice this led to us increasing our focus on involvement and the Norwegian model, because many of the informants emphasised that it was an important aspect of change in Norway. In addition, it allowed us to keep an open mind on important aspects of change and be influenced by the experience of the informants.

The quality of semi-structured interviews depend on the trust between researchers and informants, and this is especially important when dealing with sensitive subjects according to Tjora (2013, p.107). Therefore, it is important to balance the length of the interviews to have a long enough interview to gain trust, but not too long in order to avoid draining the informant (Tjora, 2013, p.107). In practice, this meant that we tried to communicate well in advance which aspects we were going to touch on in our interviews. Our experience was that the informants had not received much information from our point of contact before meeting us, so we spent some time with each informant explaining what we were studying and build up trust. To avoid draining the informants we tried to keep our interviews within one hour in the beginning. We experienced that some informants wanted to spend more than one hour, which led to us adjusting our time estimate to include fifteen minutes extra to allow for some leeway. We did not experience that informants became drained during our interviews.

All of the interviews were conducted at the work-place of the informants, except one which for practical reasons was carried out in a hotel-room where the informant was staying. This possibly helped create a relaxed atmosphere for the interview because it was a known environment

for the informant (Tjora, 2013, p.120). It seemed natural interviewing the informants at their workplace and during work hours because our thesis is concerned with their experiences and perception of change at their workplace. With a similar reasoning to Tjora (2013, p.137) we used audio recording to make sure we captured what was said during the interview, and to be able to concentrate more on the informants and the conversations with them. It allowed us to ask for more elaboration and have good overall communication with the informant.

We created an interview guide for our interviews, which can be found in appendix B. Our interviews followed the three phase approach suggested by Tjora (2013, p.112) with: Warm-up, reflection and termination. We started the interviews with presentations and information regarding our thesis, the interview process, how the data would be used, making sure the audio-recording was approved by the informants, and a signing of an interview agreement for all informants.

In our experience it was advantageous for us to be two interviewers, where we for each interview made a decision on which one had the main responsibility for the interview. Where the one responsible takes care of the formal part of the interview and is responsible for making sure the interview-guide was followed, the other was free to ask additional questions. This was especially applicable where the one responsible missed a cue for something interesting. This is supported by Tjora (2013, p.119) who states that it is especially advantageous being two when the interviewers have little experience with interviewing. In our semi-structured interviews we experienced similar situations as described in Tjora (2013, p.135-137) where we as the interviewers kept asking for more concrete situations, actions, changes or situations. Usually this resulted in the informant giving us more concrete answers.

2.3 Quality of qualitative research

Tjora (2013, p.201) defines three measures of quality in research: reliability, validity and generalisation. These three concepts will all be discussed in this section. According to Bryman (2016, p.390), these three measures are not necessarily directly applicable to qualitative research, such as our study. Miles and Huberman (1994) also address the problem of how one can draw valid meaning from qualitative data. Even though qualitative data are rich and in-depth, there are

doubts about the reliability and validity of findings based on qualitative data (Miles and Huberman, 1994, p.2). Therefore, we will discuss all three indicators of quality, and how they relate to our qualitative study.

2.3.1 Reliability

According to Bryman (2016, p.390), reliability in qualitative research can be split into external and internal reliability. External reliability is concerned with how easy other researchers can replicate our study and get the same results, according to Le Compte and Goetz (1982, as cited in Miles and Huberman, 1994, p.278) and Tjora (2013, p.206). In our case the possibility of other researchers being able to replicate our study is low, because the companies and change cases are anonymous. However, other researchers might utilise similar sampling criteria and a similar research method in order to approximate our research. Even with this approach the external reliability of our study can be considered low. This is a known issue with qualitative research approaches, according to Bryman (2016, p.405). To offset this challenge we have focused on balancing the need for anonymity and transparency. An important aspect of transparency is to disclose the choices we have made (Tjora, 2013, p.216), which we have made an effort to achieve.

Internal reliability is, according to Bryman (2016, p.390), concerned with the different observers in the study agreeing in the observations. This is maintained in this study, as both authors to a great extent agree with each other. It could, however, be argued that the internal reliability could have been higher if there were more authors involved in the study.

Tjora (2013, p.203-205) argues that an important aspect of reliability is being conscious about the researchers preexisting assumptions and being clear about the divide between the empirical data and the researcher's perception of them. This is similar to confirmability and objectivity, as presented by Bryman (2016, p.392-393), concerned with making sure that the researches have not allowed personal values or theoretical inclinations to influence their research overtly. Tjora (2013, p.28-29) states that in any research the researcher(s) will bring a preexisting understanding, and in our case the work already done by us in Karud and Årvik (2016) will be such a preexisting understanding and theoretical inclination. This understanding will have affected how we designed our research process, which companies we approached, which questions we asked, which findings we present, and how these findings are analysed. We have been conscious

about how this has influenced us during the process, and thus we have tried to take this into account when analysing our data. We have sought to create a clear divide between the empirical data from our informants and our own analysis of these data through separating it structurally in different chapters. In chapter 5 we try to present the data as objectively as possible, while we analyse them in chapter 6.

2.3.2 Validity

According to [Bryman \(2016, p.390\)](#), validity in qualitative research can be split into external and internal validity. External validation corresponds with generalisation in qualitative research, according to [Miles and Huberman \(1994, p.278\)](#), which will be discussed in the next section. Internal validity is an indication of how the results of the study relate to the findings ([Bryman, 2016, p.390](#)). In other words, if the argumentation in the analysis is logically sound and the research answers the research questions in a satisfying manner, the study is considered to be internally valid ([Tjora, 2013, p.206](#)). We have tried to make our argumentation as transparent as possible to ensure that the reader can assess the internal validity of our analysis, and in chapter 8 we discuss how our results relate to our research questions.

According to [Bryman \(2016, p.390\)](#) one can achieve internal validity by ensuring that the research is carried out in accordance with good practice, and submitting research findings to the informants in the study for feedback about the researchers' understanding of the studied case. We have tried, through collaboration with multiple supervisors and the use of theoretical sources such as [Bryman \(2016\)](#), [Miles and Huberman \(1994\)](#), [Stake \(2005\)](#), and [Tjora \(2013\)](#), to adhere to good research practise. Submitting the findings to feedback from the informants, or respondent validation, has not been possible in this study due to time constraints.

2.3.3 Generalisation

Generalisation is concerned with the validity of the findings outside of the studied cases ([Tjora, 2013, p.222](#)). The purpose of qualitative research is to generalise to theory rather than to populations, according to [Bryman \(2016, p.406\)](#). An aspect of this is the comparison of our results to comparable research ([Tjora, 2013, p.206](#)). This is difficult in our case due to the lack of similar

research on agile change management. [Tjora \(2013, p.208-209\)](#) divides generalisation into three categories.

- **Naturalistic Generalisation:** Where the researchers make the details of the arguments available in a way that readers can make a verdict on the possibility of generalisation.
- **Moderate Generalisation:** Where the researchers describe which situations (times, places, contexts and other variants) the results are valid in.
- **Conceptual generalisation:** Through qualitative research creating concepts, typologies or theories which are relevant for other cases than the ones studied.

[Bryman \(2016, p.390\)](#) argues that rich accounts of details, called 'thick description', is a way of achieving transferability or generalisation in qualitative research. Through this description readers are able to make judgements on transferability. This is similar to what [Tjora \(2013\)](#) defines as naturalistic generalisation, in that readers are provided with enough details to make their own judgements. To a certain degree, we argue that our findings can be generalised naturalistically and conceptually. The naturalistic generalisation does, however, have several challenges, as discussed by [Tjora \(2013, p.209-212\)](#). We do present thick descriptions, in that we present our data as detailed as possible in chapter 5. However, as previously mentioned, preserving the anonymity of the companies limits our transparency and ability to convey all details of the data. Therefore, we argue that the main approach for generalisation in our study is a conceptual one. Most of our results, as presented in chapter 7, are concepts and models not specific to our cases. Our concepts and models can be tested or used as a theoretical basis for further studies of change management, and will thus provide conceptual generalisability, as argued by [Tjora \(2013, p.215\)](#). In addition, [Miles and Huberman \(1994, p.29\)](#) argue that a multi-case study such as ours, will not solve the issue of generalisability for qualitative studies, but it will help adding confidence to the findings, as the emerging theory is seen to work out in predictable ways.

2.3.4 Causality

[Miles and Huberman \(1994, p.144\)](#) state that another challenge when analysing qualitative data

is to establish causal relations between variables. However, [Miles and Huberman \(1994, p.147\)](#) argue that qualitative methods are well suited for finding such causalities. They argue that qualitative methods can find complex causal mechanisms because they can account for contextual factors influencing the mechanisms, in addition to acknowledging that the mechanisms could be local, and therefore differ from case to case ([Miles and Huberman, 1994, p.146-157](#)). When also taking the temporal dimension into account, and considering which events proceeded others, [Miles and Huberman \(1994, p.147\)](#) argue that one can assess the causality of the events using qualitative analysis.

2.4 Analysis of the qualitative data

We base our analysis process on [Miles and Huberman \(1994, p.10\)](#) who define qualitative data analysis to consist of three concurrent activities: data reduction, data display, and conclusion drawing and verification. Data reduction consists of selecting and abstracting data from transcriptions. Data display is an organised and compressed collection of data one can draw conclusions from. Conclusion drawing and verification consist of finding patterns and explanations in the data, and testing these for plausibility.

After collecting the data, as discussed in the previous section, the interviews were transcribed in full. When presenting the data from these transcriptions, all informants are referred to as "he", regardless of the gender of the informant. This is done due to privacy concerns on behalf of the informants. When describing the roles of the informants we use the hierarchy shown in [2.1](#) to "standardise" the titles of the informants. We use CEO for level 1, EVP/CXO for level 2, and SVP for lvl 3 in the organisation. When using "Manager" or any other title, the description of the informant's role is found in the overview presented in [chapter 4](#).

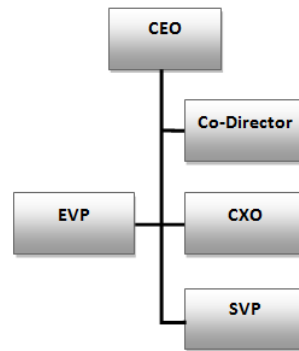


Figure 2.1: Hierarchy used to describe informant roles

After the interviews were transcribed, the interviews were coded. The coding process will be discussed next. Finally, the analysis of the coded empirical data will be discussed in section 2.4.2.

2.4.1 Coding the empirical data

Coding is the first step of the analysis, and is the data reduction phase of analysis. The phase consists of labelling chunks of the transcribed interviews with tags or labels called "codes" (Miles and Huberman, 1994, p.56). Tjora (2013) divides coding into two approaches: Close-To-Text coding is the inductive approach recommended by Tjora (2013, p.180-183), while what Tjora (2013, p.180-183) refers to as sorting-based coding reflects a variable thinking found in the quantitative approach. Our coding of the data can be looked upon as a mix of these two approaches, which we will discuss below. Miles and Huberman (1994, p.58) argue that the codes should be based on the previously discussed conceptual framework, which ensures that the codes are focused towards the most relevant variables and relationships. They suggest using two tiers of codes; first a set of general "master codes", and then more specific "sub-codes" where each sub-code is related to one of the master codes. According to Miles and Huberman (1994, p.61), the codes will change and develop during the study. Some will prove redundant, while others will emerge. Therefore, the codes should be revised along the way (Miles and Huberman, 1994, p.61).

In our coding approach we had a set of "categories" from our theoretical perspectives which we generated before coding, this is similar to the "master" codes suggested by Miles and Huber-

man (1994). Examples of such a "master" code are Context as a main category and "sub-codes" such as "Uncertainty". This was necessary because of the fact that we had over 300 pages of transcribed material, and we needed a way of systematically treating the data. This approach has elements of a sorting-based coding. It should be noted that the work with the data material itself was closer to a Close-to-Text coding where we worked through all of the data and created "cards" on interesting parts of the data, and then afterwards we put them into our coding system in the appropriate category as sub-codes. In this way the sub-codes serve as a Close-to-Text coding where they reflect the actual data, but they are put into categories for our own sake and for the sake of the structure of the thesis. The sub-codes fulfil the demand set by Tjora (2013, p.184) for an inductive coding approach in that they could not have been generated a priori without the empirical data. For a more effective qualitative analysis the cards with the sub-codes included direct references to the interviews in order to have a good link between the codes and the instances in the data these codes were attached to. Thus, our approach can be said to have created code-structured empirical data, as described by Tjora (2013, p.184). We revised the codes and created several new sub-codes during the coding process as suggested by Miles and Huberman (1994, p.61).

2.4.2 Analysing the coded empirical data

After coding the data, the next step of the analysis is, as discussed, to display the data. As discussed in section 2.3, there are issues concerning the different quality measurements of qualitative research. Therefore, Miles and Huberman (1994) present methods that seek to make qualitative data analysis more credible. Miles and Huberman (1994, p.90) suggest using data displays as tools for analysing data. They define a data display as a visual and systematic representation of the data. By arranging the data in a display, it is easier to compare data and find patterns, which in turn makes it easier to draw conclusions about the relations between the variables (Miles and Huberman, 1994, p.90-93). Building data displays require aggregating the data to allow the researcher to view all the data in one place.

As discussed in section 2.3, qualitative methods are found to be well suited for establishing causal relations. Thus, establishing such causal relations between variables based on statements and arguments from our informants will be a central part of our analysis. In order to be

as thorough as possible, we use the previously mentioned data displays to find these causalities. Miles and Huberman (1994, p.151-165) present a type of data display called 'causal networks', which displays the different variables as boxes, and the relations between the variables as arrows. We used this display type as a basis for our analysis, as it enables us to visualise the variables and the potential relations between them in an intuitive and systematic way.

Miles and Huberman (1994) separate between within-case displays and cross-case displays. When creating displays for cross-case analysis, Miles and Huberman (1994, p.173) recommend two different approaches: variable oriented analysis and case oriented analysis. In variable oriented analysis one focuses on the variables of the relations without considering that they come from different cases, while in a case-oriented analysis, one focuses on finding patterns in the variables within each case. While variable-oriented analysis is good for finding probabilistic relationships between the variables, case-oriented analysis is better for handling complexity, as the analysis of each case can account for the contextual factors of that specific case (Miles and Huberman, 1994, p.174).

Variable-oriented and case-oriented analysis can be combined with so called "mixed methods analysis", where each case is first analysed separately, and then a meta analysis is carried out where the results from each case are compared systematically (Miles and Huberman, 1994, p.176). We chose a mixed methods approach in our analysis, as it enables us to first identify relationships that might be applicable for other cases as well based on analyses of the contextual factors that impact the relationships. This will be a form of conceptual generalisation, as discussed in section 2.3. Once the relevant causalities from the different cases are identified, we use a variable-oriented meta analysis to find all possible relationships for some central variables across all cases. In this way, we can discuss all potential effects these variables could have. In order to aggregate all of the case specific causal networks together, we followed a suggestion from Miles and Huberman (1994, p.228-238), which consists of selecting the variables from the case networks that seem most influential, and then modelling all relationships from all cases that affect the selected variables. In this way we end up with a series of sub-networks, each centred around a variable deemed to be particularly influential. In the analysis, particular care is taken to discuss how variables from different cases could relate. As discussed in section 2.3, Miles and Huberman (1994, p.236) stress the importance of analysing the resulting causal networks with

local causality in mind. Thus, when discussing possible relationships in the cross-case analysis, the focus is still on which case each relationship originates from, and on the contextual factors of that specific case.

2.5 Ethical discussion

When conducting our study, we have tried as far as possible to follow best practice and avoid unethical research methods. However, balancing the need for anonymity and the need for rich data is as previously discussed a major challenge in qualitative research. Informants and companies could potentially be recognised if the data is too rich and descriptive, as very specific details could make them recognisable. Therefore, [Tjora \(2013, p.159\)](#) states that securing anonymity is a challenge with the semi-structured interviewing approach because of the potential repercussions to informants if they are recognised. This relates to our effort to avoid harming or negatively affecting our participants ([Bryman, 2016, p.135](#)). In practice this has led to us focusing on securing the anonymity of our informants and companies in our study when presenting our data. As a result of this our data is not as descriptive as it could have been, because some potentially central details have been removed to preserve the anonymity of both informants and companies involved.

To ensure that informants understand the implications of participating in the study, and to formally confirm their consent to participation, we created a interview contract which can be found in [appendix C](#). This contract also informs the participants of our intention to ensure confidentiality and preserve anonymity to the best of our ability. The contract has been signed by all informants.

2.6 Limitations

A potential limitation in our research is related to our sampling approach. In the eight companies we contacted, we approached one single person from each company, who became our point of contact, and was the one who selected informants in the company. To offset this, we had a clear communication with our contact person on which types of informants we needed

and the need for informants at different levels of the organisation.

Another limitation is the fact that we, due to time constraints, studied the change cases at a single point in time. Some of the studied change cases are ongoing at the time of writing, and thus the results of the changes are unknown. Other cases are studied only in retrospect, and thus we do not have detailed information about the actual implementation of the changes. Adopting a longitudinal approach was impossible, because of the limited time frame of a master's thesis. Similarly, as discussed in section 2.3, respondent validation was not possible due to time constraints.

Finally, our study sample features Norwegian companies only. Therefore, the scope of the thesis is primarily organisations in a Norwegian context. According to [Bryman \(2016, p.426\)](#), this means that our findings are not necessarily applicable to companies outside of our context sample; Norwegian companies undergoing change in uncertain environments, as discussed in section 2.2.2. However, our findings may still be applicable to companies outside of Norway that are facing similar challenges. In section 8.2 we argue that agile change management outside of Norway should be studied further in order to assess the viability and applicability of our findings in other contexts.

Chapter 3

Litterature Reivew

3.1 Change management

According to [Byrkjeflot \(1997, p.26\)](#) change management implies that the leaders serve as strategists, dialogue partners, and bearers of tradition. To understand and conceptualise change management, one has to start with what is being changed; the organisations. According to Harold Leavitt (1965, as cited in [Jacobsen, 2012, p.65-68](#)) an organisation consists of tasks, people, technology and structure. The first three of these constitutes the production core. With the tasks that the organisations are set to solve, the people as the executing part and the technology that is utilised by the people to carry out the tasks ([Jacobsen, 2012](#)). The structure is the framework that governs the production core. Change Management in this context is, therefore, concerned with changing one or more of these parts of the organisation.

3.1.1 Aspects of change

In order to study change; we will break 'change' down in different aspects that can be studied independently. This model will be used to categorise our data and analysis. In this thesis we will use the same five aspects which were used in our project thesis ([Karud and Årvik, 2016](#)) inspired by [Jacobsen \(2012\)](#) and [Kuipers et al. \(2014\)](#), in order to easily compare our findings with our model for agile change. The five aspects of change are: context, drivers, content, process, and outcome ([Karud and Årvik, 2016, p.8](#)).

- **Context:** The change context consists of environmental factors which affect an organisation's ability and willingness to change (Jacobsen, 2012, p. 116). We divide the change context into 'inner context' and 'outer context'. The inner context is concerned with environmental factors within the company, such as company culture, while outer context is concerned with external factors, such as regulations and market conjunctures.
- **Drivers:** Change drivers are, according to Van de Ven and Poole (1995, as cited in Jacobsen, 2012), defined as fundamentally different sequences of events and causal mechanisms that explain how and why change exists. There are many different perspectives on what drives a change process. In this thesis we will be concerned with change driven either top-down, where the company management will be the most important change driver, or bottom-up, where the employees are the most active change drivers.
- **Content:** A change of an organisation can have many different kinds of content. It can be a change of either strategy or one of the elements from of the organisation: tasks, people, technology and structure (Jacobsen, 2012, p.65). In addition, a change can be big or small, it can take a new direction, or involve something new in the same direction.
- **Process:** Change has to be studied as a set of processes where people act and cooperate, based on many causes and with different purposes. Planned change implies that someone starts a set of activities to create change in behaviours, structures or cultures (Jacobsen, 2012, p.117). This aspect covers the planning of change, and how it is carried out.
- **Outcome:** The change outcome is the product of the change process, and will be shaped by the content, context, and drivers. The change outcome is manifested as a difference in one or more parts of the organisation, as previously discussed; the tasks, people, technology, or structure of the organisation.

3.1.2 The paradoxes of strategic management

One thing that will affect how organisations approach change and other challenges is the organisation's view on strategy. According to Jacobsen (2012, p.152) there are two main views on strategy, called Strategy E (Economical) and Strategy O (Organisational). Strategy E is a top-down

approach to strategy with focus on tangible economical results, like higher profit margins, while Strategy O is a bottom-up approach characterised by employee participation, and is focused on continuous learning and organisational development (Jacobsen, 2012). While Strategy E is concerned with short-term economical results, Strategy O is concerned with developing the people and culture of the organisation in order to achieve long-term goals. The organisation's view on strategy will affect the strategic management of the organisation. This strategic management can be analysed by looking at the organisation's approach to a set of paradoxes. De Wit and Meyer (2014) present a series of seemingly contradictory approaches to strategic management, which the authors call "strategy paradoxes" (De Wit and Meyer, 2014, p.14). These paradoxes, and an organisation's perspective on them, will shape the organisation's approach to change, as change and strategy go hand in hand. In this section we introduce the paradoxes which we find are most relevant for change management. These are the paradoxes of deliberateness and emergence, exploitation and exploration, control and chaos, and revolution and evolution. Sushil (2014, p.21) argues that these paradoxes cannot simply be balanced in an "either-or" fashion, but rather, one has to find "both-and" solutions to them. This is particularly important when facing uncertain environments, which will be discussed in section 3.2 (Bahrama, 1992; Sushil, 2014, p.3).

Deliberateness and emergence in strategy formation

According to De Wit and Meyer (2014) a paradox of strategy formation is the demand for both deliberate strategising and strategy emergence. Deliberate strategising is the traditional approach to strategy and change management, where the management makes strategic plans and implements them in a top-down manner (De Wit and Meyer, 2014, p.345). Strategy emergence is where the strategy is continuously shaped by incremental initiatives, with a focus on organisational learning (De Wit and Meyer, 2014, p.346). Srivastava and Sushil (2014, p.13) argue that in order to ensure high organisational performance, the organisation has to continuously update the strategies proactively based on changes, shifts and trends in the environment.

Dawson (1996) presents a processual perspective where change is a "complex and dynamic process which should not be solidified or treated as a series of linear events". This is an example of viewing change as an emergent process, where the change is regarded as a continuous process

where the changes emerge and are refined over time. Therefore, (Dawson, 1996) argues that change management is a continuous requirement.

On the one hand organisations; need planning to have a sense of direction and to coordinate strategic initiatives, while on the other hand organisations also need to be flexible and to continuously learn and adapt to changing circumstances. This paradox can, according to De Wit and Meyer (2014, p.358), be solved by either balancing the two needs through a trade-off between deliberate strategising and strategy emergence, or by juxtaposing the two by continuously managing the two needs simultaneously.

Mintzberg and Waters (1985) illustrate the relationship between deliberate and emergent strategy with the model shown in figure 3.1. According to them, the realised strategy is a combination of deliberate strategy and emergent strategy. The deliberate strategy is the part of the intended strategy that is actually realised. The way that this paradox is managed will determine how much of the realised strategy is intended, and how much is emergent.

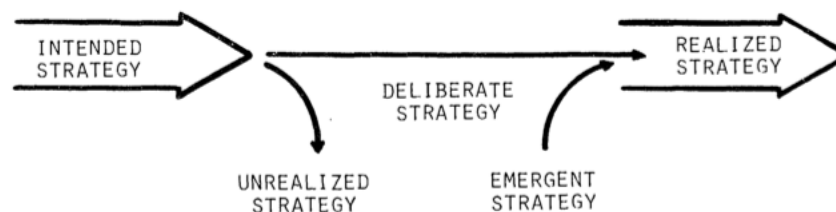


Figure 3.1: Types of strategies (Mintzberg and Waters, 1985)

Beer and Nohria (2000) argue that one way of combining planned and emergent change, is through what they call 'planned spontaneity'. This planned spontaneity involves encouraging learning through planned experiments, where employees are allowed to try out new changes without being penalised for failure. This allows for bottom-up emergence, while still being a deliberate and planned initiative (Beer and Nohria, 2000).

According to Baldersheim and Øgard (1997, p.346) change management can be broken down into three types of approaches: the project approach, the negotiations approach and the involvement approach. A combination of these models are needed for a successful change management (Baldersheim and Øgard, 1997, p.346). The first is a planned approach, while other two are more emergent approaches.

The project approach is based on strategic analysis, goals, responsibilities, budgeting, keeping deadlines, change plans (Baldersheim and Øgard, 1997, p.350). The model demands a heavy and active change coalition, so the change process is top-down (Baldersheim and Øgard, 1997, p.350). The approach can be understood as a part of the Planned perspective and Strategy E. According to Baldersheim and Øgard (1997, p.350) such models often include the following elements: Identify the problem, formulate goals, create a change plan, formulate responsibilities, distribute resources, and create routines for feedback.

The negotiation approach involves an organisational perspective where the organisation consists of continuous negotiation processes and the creation of coalitions (Cyert and March 1963,1992; Crozier and Friedberg, 1977, 1980; Pfeffer 1978, Friedberg, 1993 as cited in Baldersheim and Øgard, 1997, p.357) and experience based models to handle change resistance (Pettigrew, 1985 as cited in Baldersheim and Øgard, 1997, p.357). The approach consists of the following central elements: Group orientation, participation based on formal rights or interest utterance, the creation of arenas for contact and negotiations, usage of co-opting mechanisms, and solutions based on compromises. The involvement approach is based on the idea that a broad participation will create engagement and creativity (Baldersheim and Øgard, 1997, p.362). The manager's task is to handle this creativity and all the suggestions from such a process, because if the ideas are not channelled, selected and handled properly it can be too much for the organisation to handle (Baldersheim and Øgard, 1997, p.363). The negotiation model and involvement approach fit better with Strategy O and an emergent perspective.

Exploitative and explorative innovation

This paradox is concerned with the demand for both sustained and disruptive renewal (De Wit and Meyer, 2014, p.446). On the one hand, the organisation needs to improve ongoing processes through sustained renewal to be able to be competitive. This is called exploitative innovation (De Wit and Meyer, 2014, p.442). On the other hand, the organisation also needs to experiment with new processes and technologies in order to be flexible and to maintain their position in changing environments and times of technological advancement. This is called explorative innovation (De Wit and Meyer, 2014, p.442). However, as the organisation has limited resources, it must choose which aspect to focus on. This is called the innovator's dilemma (De Wit and

Meyer, 2014, p.449).

According to [Benner and Tushman \(2003\)](#), incremental change is concerned with existing customer segments and existing technology, while radical change seeks to find new customers and new technologies. Process management is a view on organisations as a system of inter-linked processes, and is concerned with mapping and improving organisational processes ([Benner and Tushman, 2003](#)).

[De Wit and Meyer \(2014, p.450\)](#) suggest three possible ways to manage this paradox. The organisation can use parallel processing, which involves separating the exploitative and exploratory innovation on a structural level, and give the responsibility for the two approaches to different organisational units. This is also called 'spatial separation' ([De Wit and Meyer, 2014, p.451](#)), and is done by so called 'Ambidextrous Organisations' ([Benner and Tushman, 2003](#)). Alternatively, the paradox can be 'navigated' by changing focus between the two approaches over time. This is called 'temporal separation' ([De Wit and Meyer, 2014, p.452](#)). Finally, the organisation can balance the paradox by doing both kinds of innovation at the same time.

Organisational control and chaos

The paradox of organisational control and chaos is a question of the amount of autonomy that employees are given to manage their own work ([De Wit and Meyer, 2014, p.554](#)). Here 'control' means top-down control from the organisation's management, while 'chaos' refers to decentralised management in a bottom-up fashion, where employees practice self-organisation. There is a demand for top-down control in order to manage an organisation, and to make sure that the entire organisation is working towards the same goals while following the same strategy ([De Wit and Meyer, 2014, 550](#)). But there is also a demand for flexibility and autonomy in order for the employees to be able to innovate ([De Wit and Meyer, 2014, 550](#)). This paradox is reflected in the change management perspectives of top-down change with a focus on Strategy E, and bottom-up change focused on Strategy O.

[De Wit and Meyer \(2014, p.564\)](#) suggest three different ways of managing the paradox of control and chaos. The paradox can be balanced, by blending top-down and bottom-up management. This blend will often be determined by the type of organisation, and the nature of the industry it operates in ([De Wit and Meyer, 2014, p.564](#)). The paradox can also be juxtaposed, by

using different approaches in different projects and business units. Finally, the paradox can be embraced. This consists of deliberately using the tension between control and chaos as a source of creativity and opportunity. One way to do this is by having a diverse management team which represents both approaches (De Wit and Meyer, 2014, p.565).

Beer and Nohria (2000) also argue that Strategy E and O have to be combined in some way to be able to survive and adapt. They do, however, warn that unless this combination is handled carefully, it is likely that it will result in a combination with the worst aspects of both, and the benefits of neither. Similarly to De Wit and Meyer (2014), Beer and Nohria (2000) also suggest explicitly embracing the paradox. They suggest focusing on both the hard and the soft sides of the organisation at the same time, something that should also be reflected in the company's goals. Thus, the company needs goals concerned with both economic value and organisational capability (Beer and Nohria, 2000). Beer and Nohria (2000) suggest that when combining top-down control and bottom-up chaos, the top-management should set the direction, and engage the people below. Just like De Wit and Meyer (2014), Beer and Nohria (2000) also argue that this is made easier by having people that represent both sides of the paradox in the management team.

Revolutionary and evolutionary change

The paradox of revolution and evolution is concerned with how change should be implemented. Revolutionary change is a radical and disruptive form of change. The approach is based on the assumption that in order to overcome change inertia and resistance; the change should be implemented as a 'big bang', where the organisation is changed suddenly and drastically (De Wit and Meyer, 2014, p.392). Evolutionary change on the other hand, is a continuous processes of small changes, which add up to significant change over time (De Wit and Meyer, 2014, p.392). This allows the organisation to continuously adapt and learn.

De Wit and Meyer (2014) suggest only one way to manage this particular paradox. According to De Wit and Meyer (2014, p.401), the paradox of revolution and evolution should be navigated. By changing between revolutionary change and evolutionary change depending on the situation, an organisation is able to adapt and benefit from both perspectives. De Wit and Meyer (2014, p.401) suggest that in periods with relatively stable environments the organisation should

focus on evolutionary change, while in turbulent situations the organisation should change revolutionary in order to respond fast enough to the changing environment.

3.1.3 The Norwegian model

A hallmark of the Norwegian work-life is the close and trust-filled cooperation between management and employees (Levin et al., 2012, p.22). There is a low power distance between high and low in company hierarchies, and employee participation in decisions is the rule rather than the exception (Levin et al., 2012, p.22). Some have stated that the Norwegian work-life is the most democratic work-life in the whole world, with a high degree of employee influence, both through direct individual influence and representative structures (Levin et al., 2012, p.63). However, it should be noted that there are clear differences between sectors and between companies in regards to how the cooperation between the employees and management is (Levin et al., 2012, p.63). Some of the reasons for these variations are according to Levin et al. (2012, p.63): High variations in belief and knowledge about increased value creation through cooperation in business development, high variations in the roles of the representatives and unions and high variations in management style in regards to the view on involvement and employee participation.

Levin et al. (2012) divide the Norwegian model into three layers, the welfare-state model, the work-life model, and the Norwegian Cooperation model. The Norwegian cooperation model is concerned with the relations on the company-level (Levin et al., 2012, p.26). The Norwegian cooperation model is most relevant for us, so when referring to the Norwegian model, we refer to the cooperation model. The relevant aspects of the Norwegian model for our study is (Levin et al., 2012, p.27): the trust between managers and employees is high, and a low power distance is expected, the cooperation between managers and union representatives has a high legitimacy and top-managers have a positive view of the Norwegian model, and a there is a high will to cooperate in order to maintain competitive power. The Norwegian model also has a formal legal structure, which can be found in appendix D. This means that there is a legal basis for employee involvement in change processes (Finnestrand and Ravn, 2010).

Levin et al. (2012, p.28) state that the Norwegian model unfolds itself in three main forms: Representative participation through union representatives and other representative mecha-

nisms based in the law, cooperation that is characterised by broad involvement and direct participation through the fact that everyone is involved in making decisions about their own job and may use their voice, and cooperation that is expanded outside of the demands set by the formal structures. In the Norwegian model one can define involvement at a business level as consisting of three elements (Levin et al., 2012, p.100-101): Representative Participation, Direct Involvement and Unregulated Party Cooperation. Representative Participation refers to the local cooperation between union representatives and management in practising agreements and laws (Levin et al., 2012, p.100). Direct involvement refers to the influence each employee has through their involvement in the workplace and some opportunities to make decisions through the work (Levin et al., 2012, p.100). Direct involvement happens when employees are directly involved in both normal operations and in change processes (Levin et al., 2012, p.101). Unregulated Party Cooperation refers to the active cooperation between union representatives and management, based on democratic principles, but concerned with matters outside and beyond the minimum set by laws and agreements (Levin et al., 2012, p.101-102). Examples of this unregulated party cooperation can be found in change processes. In her work Finnestrand (2012) explains that in her data the union representatives either suggested changes or were heavily involved in the change process. In addition, the union had increasingly been taken more responsibility for enterprise development on the shop floor (Finnestrand, 2012). When the union has such an active role in change, the changes are influenced by a focus on democracy and collectivity from the unions (Finnestrand, 2012). In her study the union had an important role in mobilising and leading the members in the implementation of changes (Finnestrand, 2012). According to Finnestrand (2012), the representatives and workers know what it takes to implement changes, and she emphasises the need for ownership in the change in order for it to turn into practice. This knowledge might not be present in the management due to rapid turnover (Finnestrand, 2012).

Levin et al. (2012, p.102-103) identify several positive effects of a close cooperation between management and employees:

1. Productivity: The parties of the Norwegian model have said that the model and broad involvement is effective and increases productivity. One reason given for this is the fact that it may take longer time to make a decision, but the decision is easier to implement

(Levin et al., 2012, p.102).

2. Quality: Decisions made through broad involvement are better because larger parts of the company's competences are utilised (Levin et al., 2012, p.102).
3. Innovation: The institutionalised cooperation have laid the foundation for innovation, not only in management and how the organisation is organised, but in the development of products and services (Levin et al., 2012, p.23).
4. Readiness: Good and robust practises for involvement and employee participation can contribute to an increased readiness in the organisation to handle crises or other unexpected events (Levin et al., 2012, p.103).

3.1.4 The role of management in a Norwegian context

Byrkjeflot and Halvorsen (1997, p.56) define leadership as exercising legitimate authority. Sejersted (1997, p.36-38) states that in societies with strong norms for democracy, such as Norway, the need for leadership legitimacy is strong. This implies that a leader's possibility for decision-making to some degree is dependent on whether the leadership is established and is carried out in compliance with democratic norms (Sejersted, 1997, p.40). (Sejersted, 1997, p.35) states that any form of leadership must be based on a balance of authority, power and trust. Where the use of power may destroy trust, but a leader needs trust to use his power and authority (Sejersted, 1997, p.35). In Norway the distance between the leaders and the production in the company has been low (Sejersted, 1997, p.44). This and other factors implies according to Sejersted (1997, p.46) that leadership in Norway demands openness, transparency, trust, decisions must be justified, and maybe a degree of closeness. In addition, unions are an important element for legitimacy (Sejersted, 1997, p.47). Byrkjeflot (1997, p.14) supports this and states that leaders must, in a greater degree than before, convince employees that their orders and strategies are valid.

In recent times, with flexible, more vertical organisations where the customer is the focus, the role of the leaders has changed according to Grønner (1997, p.190-192). Organisations, management, and manager-roles have become more complex, and because of this management should no longer only control, run and delegate, but they have to give people the necessary autonomy (p.299 Bleiklie, 1997; Byrkjeflot, 1997, p.428). In such organisations, where knowledge is

important, it is an essential management task to make sure that the persons with the strategic information can make decisions themselves (Byrkjeflot, 1997, p.16). The importance of knowledge contributes to tearing down the traditional barriers between traditional disciplines and organisations (Byrkjeflot, 1997, p.12). The manager should view it as his task to facilitate for the employees (Johannessen, 1994:49 as cited in Grønner, 1997, p.191). This implies more communicative and procedure-oriented forms of managing, so coordination can happen further down in the hierarchy (Byrkjeflot, 1997, p.428).

Levin et al. (2012, p.153-154) present five characteristics of good management behaviour in change processes in the Norwegian model.

1. Energy creator: To be able to implement the change without draining the employees without making them uncertain, and where employees understand the reasons behind the change. There has to be an understanding for the overbearing goals for the change (Levin et al., 2012, p.153).
2. Information carrier: Management's main focus is on which information the employees need in order to actively participate in the change process, without sharing too much which might lead to a paralysis in the employees. The management sees it as important to share information to increase and share knowledge (Levin et al., 2012, p.153).
3. Buffer against chaos: Through having a clear focus on the future, and on what is important at the moment, a good manager structures the chaos and creates a calmer working environment for the employees (Levin et al., 2012, p.154).
4. Focuses on time: Which means that the manager makes prioritisation and assumes responsibility of them. A time for dialogue is prioritised, and time to evaluate if the current path is the correct one. The managers respect the employees' time and utilise change processes to make other changes as well (Levin et al., 2012, p.154).
5. Practises involvement and employee participation as a main strategy for implementation: This was a very important factor for the employees in the changes studied, which implies a positive view of the employees' competences, will and responsibilities (Levin et al., 2012, p.154). The employees were empowered because their competences, experiences,

talents and protests were used, but there was never a doubt that the management had the responsibility for the change (Levin et al., 2012, p.154).

An alternative branch of the management theory, which was popular in Norway in the 80s, is Georges Kenning's "Aker model" (Sander, 2014). Schjander (1987) discusses the model, which consists of several so called "management praxes", which are essentially guidelines for leadership and management. According to Schjander (1987, p.67-68), one of the praxes states that a manager should not necessarily lead by example, as it is not the role of the manager to set examples, but rather to direct their employees. Other praxes state that a manager will be able to be successful in any position as long as the manager is able to use the employees under him, and that the manager should avoid letting a group of employees make democratic decisions, as the manager is responsible and accountable for all decision-making (Schjander, 1987, p.75-130). One of the praxes states that employees should only think and show initiative if it is included in the job specification. If someone is expected to show initiative, then it must be formally communicated, and the job specification must be expanded to reflect this (Schjander, 1987, p.184). This view on change contradicts with many aspects of Norwegian management previously discussed in this section, such as involvement and democracy. As mentioned, the model originates from the 80s, and thus it is possible that it is outdated today.

3.1.5 Communication

As seen by the points made by Levin et al. (2012) communication and cooperation are important. Eriksen (1997, p.393) states that democratic leadership is about cooperation, and that the leader's success is dependent on the quality of the cooperation between the leader and the employees. Based on this Eriksen (1997, p.394) defines "Communicative Leadership" as following-up on initiatives and implementing changes in a consensual way. It is based on reaching goals and realising plans (as strategic management defines it), but based on a consensus that has been legitimately established (Eriksen, 1997, p.394). Eriksen (1997, p.396) argues that one has to include the volunteerism of employees, and that a leader is not practising leadership if his implementations is solely based on his formal power, and thus the leader needs to reach a consensus. This is an increasing trend due to increased knowledge and right for co-determination

in Norway (Eriksen, 1997, p.413). Because of this leaders have to base their changes on reason and be able to rationally discuss them (Eriksen, 1997, p.413). An important aspect of this is the need for the leader to be able to communicate and inform, and that the leader can control through arguments and recommendations (Eriksen, 1997, p.413). In summary, communicative leadership entails that decisions must be acceptable to the employees, which demands that the decisions can be justified (Eriksen, 1997, p.414). Leaders can act without consensus, as long as they have established justification.

Kotter (2007) deals with communication as one of his famous errors of change. He states that:

"Without credible communication, and a lot of it, the hearts and minds of the troops are never captured" (Kotter, 2007)

According to Kotter (2007) most managers under-communicate, and he states that employees often have to make short term sacrifices during change, therefore, employees have to believe in the changes. Through communication the managers can gain understanding for the change (Kotter, 2007). Transformation programmes where executives utilises all existing communication channels are more successful (Kotter, 2007). A big part of the communication is also to "walk the talk", where the managers try to become a living symbol of the change (Kotter, 2007). This non-verbal communication is important, and changes can be undermined by central individuals not acting according to their words (Kotter, 2007). Similarly, Bossidy and Charan (2002, p.105-106) advocates for frequent meetings with a broad management group to create a understanding of the totality and state that frequent meetings establish accountability and follow-through.

3.1.6 Goals

There are many different reasons for creating goals, and goals can be formulated for different aspects. This section gives a quick discussion on goals before the horizon of change and balance of short-term and long-term goals is discussed in the next session. We view goals as a form of measurement, as it can be a measurement of progress and can serve as guidance for employees in the organisation. By creating clear goals the organisation can be evaluated (Eriksen, 1997,

p.396). Or as [Bossidy and Charan \(2002, p94\)](#) put it "You get what you measure for". It should be noted that creating goals is hard, and they can be so abstract and non-committing that they do not create any guidance towards which actions should be taken ([Eriksen, 1997, p.397](#)). [Bossidy and Charan \(2002, p.9\)](#) argue that no (change) strategy delivers results unless it is converted into specific actions. With a similar perspective they state:

Unless you translate big thoughts into concrete steps for action, they are pointless. Without execution, the breakthrough thinking breaks down, learning adds no value, people do not meet their stretch goals, and the revolutions stops dead in its tracks. What you get is change for the worse, because failure drains the energy from your organisation. Repeated failure destroys it" ([Bossidy and Charan, 2002, p.19](#)).

[Bossidy and Charan \(2002, p.198\)](#) argue that goal setting and strategic planning has to be conducted in real time, and be responsive to shifts in the competitive environment. They argue that this implies splitting the mission and goals into short-, medium-, and long-term. Furthermore, there should be a connection between the goals and [Bossidy and Charan \(2002, p.227\)](#) state that breaking long-term output into short-term targets forces decisions to made and integrated in the organisation, both initially and in response to changes that happen during the project.

3.1.7 Horizon

[Brooks and Saltzman \(2016\)](#) discuss how a company should balance short-term and long-term activities in order to become what is referred to as a 'vital organisation'. [Brooks and Saltzman \(2016, p.2\)](#) argue that this is very important, as many failures are caused by an inability to balance maximising current performance and building future potential. A similar notion is shared by [Bossidy and Charan \(2002, p.199\)](#) who state that balancing the short run with the long run is a critical part of a strategic plan. This balance is illustrated in figure 3.2. The figure shows that companies focusing only on maximising short-term performance will become static, and the companies' products might become commodities.

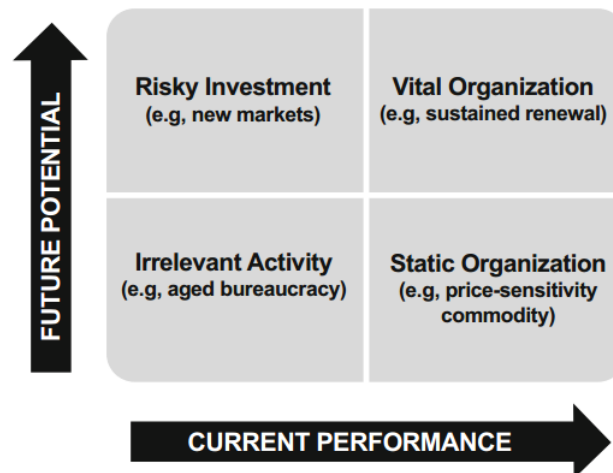


Figure 3.2: The vitality matrix (Brooks and Saltzman, 2016, p.12)

Companies focusing only on investing in long-term value might be taking risks on unproven products, and they also risk not generating enough revenue to keep the company running. The balance is a vital and sustainable organisation, capable of balancing the two (Brooks and Saltzman, 2016, p.12). Brooks and Saltzman (2016, p.13) argue that this balancing is similar to organisational ambidexterity. Brooks and Saltzman (2016, p.13) further argue that a vital organisation is characterised by agility, which is defined as "the ability to get things done quickly, to try new things, and to 'fail fast' " (Brooks and Saltzman, 2016, p.13). Such agility is discussed further in section 3.3.

In order to achieve this, vitality must be embedded in the company management (Brooks and Saltzman, 2016, p.32), and reflected in the company strategy (Brooks and Saltzman, 2016, p.34). This is, however, not enough. To achieve vitality, it is important that the entire organisation understands the need for both short-term performance and long-term value creation (Brooks and Saltzman, 2016, p.38). Brooks and Saltzman (2016, p.47) argue that leaders operating in a vital fashion require several traits, one of which is agility. This means that leaders need to be able to adopt to new environments, shift priorities, and continuously re-balance the relationship between current performance and future potential (Brooks and Saltzman, 2016, p.47).

Innovation is a large part of an organisation's long-term value creation (Brooks and Saltzman, 2016, p.60). However, innovation requires investments, and diverts resources away from operations. This can disrupt short-term performance (Brooks and Saltzman, 2016, p.60). Be-

cause of this, it is necessary to protect innovation efforts in an organisation, in order to balance short-term performance and long-term value creation, according to [Brooks and Saltzman \(2016, p.60\)](#). [Brooks and Saltzman \(2016, p.61\)](#) suggest adapting an organisational structure to protect innovation, by having dedicated groups for R&D, new ventures, product development, etc. This is called 'structural separation' ([Brooks and Saltzman, 2016, p.61](#)), and appears very similar to the spatial separation that [De Wit and Meyer \(2014, p.451\)](#) argues can manage the paradox of exploration and exploitation, as discussed in section 3.1.2.

In order to measure company performance, [Brooks and Saltzman \(2016, p.72\)](#) suggest basing the measurements on three questions: "What is our current performance?", "How are we building future potential?", and "How do we turn future potential into performance?". [Brooks and Saltzman \(2016, p.78\)](#) stress that future potential should not be measured by the same metrics as current performance. This is difficult, but [Brooks and Saltzman \(2016, p.78\)](#) argue that it is very important, as the company's future depends on it. While current performance can be measured by metrics like cost or efficiency, [Brooks and Saltzman \(2016, p.81\)](#) argue that metrics like level of organisational agility, and how fast the organisation learn from experience, can be used to better measure future potential.

[Brooks and Saltzman \(2016, p.84\)](#) claim that imbalance between current performance and future potential is most often caused by focusing too heavily on short-term performance, at the expense of investments in long-term value. One possible reason for companies focusing on short-term earning rather than long-term investments, is that investors expect fast results. [Black and Fraser \(2002\)](#) studies if stock market investors are short-term orientated. By studying stock market data from Germany, Japan, Australia, USA and the UK, they found that future cash flows were undervalued compared to a benchmark asset pricing model, within a 5 year time frame ([Black and Fraser, 2002](#)). This indicates that stock market investors prefer short-term profit, and undervalues long-term investments.

However, just because stock market investors prefer short-term profit does not mean that this affects the decision-making of the stock listed companies. [Asker et al. \(2011\)](#) studies the differences in investment behaviour between public, stock listed companies, and privately owned companies. [Asker et al. \(2011\)](#) find that stock listed companies invest less than privately owned companies, and are also less responsive to changes in investment opportunities. [Asker et al.](#)

(2011) argue that this might be caused by the fact that the owners of private companies often monitor the management of the companies more closely than stock market investors. Managers that are less monitored might invest less, and be less responsive to changes, because of natural inertia and a desire for a 'quiet life' (Asker et al., 2011). Asker et al. (2011) argue that the less monitored managers of stock listed companies have incentives to focus on short-term cash-flows instead of long-term investments in order to appear more successful, and thus increase the stock price.

Roe (2013) argues that owner structure is far from the only factor that impacts a company's ability to pursue long-term goals. Roe (2013) points out that the stock market is only a part of a larger system, and that venture capital markets and private equity markets are capable of valuing long-term planning, and help offset the impact of the stock market. In addition, Roe (2013) argues that CEOs and managers have incentives to deliver strong short-term results, in order to boost their own careers.

Aspara et al. (2014) also discuss alternative reasons why managers might focus on short-term earnings. Aspara et al. (2014) claim that managers focus on short-term earnings because of a set of self-reinforcing processes and feedback-loops. Aspara et al. (2014) argue that the notion of shareholders influencing management decision-making should not be regarded as a one-way process, but rather as a two-way self-reinforcing process. Once managers believe that investors are most interested in short-term earnings, they will try to maximise short-term earnings. They will then communicate this to potential investors, who will then believe that short-term earnings are more important. This will then cause managers to believe investors are even more interested in short-term earnings, and so on (Aspara et al., 2014).

3.1.8 Change frustration and resistance

According to Lecraw (1992), downsizing puts considerable stress on employees. Lecraw (1992) argues that factors such as concern for the future and overwhelming amounts of adjustments cause this stress, which reduce efficiency, and over time can contribute to increased personnel costs. Not all stress is bad according to Lecraw (1992), but when the stress exceeds the employees' ability to cope, it will impair work performance. Lecraw (1992) proposes a five-step process for managing employee stress during restructuring:

- **Communication:** The American author H. P. Lovecraft once said that "The oldest and strongest emotion of mankind is fear, and the oldest and strongest kind of fear is fear of the unknown". [Lecraw \(1992\)](#) argues that during change processes, fear of the unknown is a natural reaction. This fear can be reduced by clear and open communication.
- **Participation:** Another factor that contributes to the stress, is the feeling of having no control over the situation. This can be overcome by letting employees participate.
- **Knowledge:** [Lecraw \(1992\)](#) argues that one cannot manage stress unless one knows its sources, causes and symptoms. Thus, both management and personnel should understand the characteristics of the stress.
- **Goals:** During change, all employees should develop clear and achievable goals. This helps manage expectations, and provides a clear guide throughout the process.
- **Recognition:** Once employees reach the goals from the previous point, it is important that their individual performances are fully recognised. This will reaffirm the results, and provide motivation for further action.

[van den Heuvel et al. \(2013\)](#) have a similar view on change-related stress, and state that "Organizational change can be demanding and may constitute a risk factor for employee health and well-being". They argue that organisations are changing more rapidly and are becoming "continuously changing turbulent systems", and thus the need for employees who are able to adapt and handle change is increasing. [van den Heuvel et al. \(2013\)](#) study how change information and meaning-making impact the employees' abilities to adapt to changes over time. In this context, change information is concerned with communication and information about the change to the employees, including information about opportunities for employee participation ([van den Heuvel et al., 2013](#)). Meaning-making on the other hand is concerned with the employees' abilities to make sense of the change, and find purpose and meaningfulness in it ([van den Heuvel et al., 2013](#)). [van den Heuvel et al. \(2013\)](#) found that change information was positively related to meaning-making, adaptive attitudes, and adaptive behaviour over time, while meaning-making was positively related to adaptive attitudes and adaptive behaviour over time. This shows that both information and meaning-making help employees adapt to change,

and it also shows that information helps employees find meaning in the change. In addition, [van den Heuvel et al. \(2013\)](#) show that information given before the change process has a positive impact on meaning-making and adaptive behaviour during the implementation, while information given during the implementation has a lasting, positive impact on the employees' adaptive attitudes after the change process was finished. Similarly, meaning-making before and during the change implementation was shown to predict adaptive behaviour ([van den Heuvel et al., 2013](#)), meaning that employees who found the change to be meaningful proved to be more adaptable. Finally, [van den Heuvel et al. \(2013\)](#) showed that meaning-making was a connection between information given before the change, and adaptive behaviour. [van den Heuvel et al. \(2013\)](#) argue that this shows that "provision of information will trigger employees to 'digest' the information by reflecting on how the change will affect them and their (working) lives using meaning-making processes". They argue that managers should facilitate self-regulating processes like focus groups, in order for the employees to find meaning in the change, and thus become more adaptable ([van den Heuvel et al., 2013](#)). One major cause of frustration among employees can be due to uncertainty, which is the subject of next section.

3.2 Uncertainty

Uncertainty is arguably a great challenge in change management, as it is difficult to change an organisation when unpredictable events could alter the conditions for the change project at any time. [Sushil and Stohr \(2014, p.V\)](#) and [Sushil \(2014, p.25\)](#) argue that companies are currently facing an era of increasing competition, globalisation and rapidly advancing technology. These factors cause uncertainty, and create a need for more flexible organisations (p.V [Sushil and Stohr, 2014](#); [Sushil, 2014, p.25](#)).

We use the following definition of uncertainty in a business context:

Uncertainty: Situation where the current state of knowledge is such that (1) the order or nature of things is unknown, (2) the consequences, extent, or magnitude of circumstances, conditions, or events is unpredictable, and (3) credible probabilities to possible outcomes cannot be assigned. ([Business Dictionary, 2017](#))

[D'Souza and Renner \(2016, p.20\)](#) claim that it is natural for people to shun away from uncer-

tainty, as it is more comfortable to know things than it is to be uncertain. Our focus is how this uncertainty affects change management.

3.2.1 Leadership and expectations

D'Souza and Renner (2016, p.54) argue that it is dangerous to blindly trust in a leader who appears certain, because leaders might express certainty because they shun away from uncertainty. They further argue that this is a self-reinforcing problem, because when employees trust their leader in this way, it creates an expectation of certainty from the leader. If the leader then does not appear certain, then it is seen as a flaw. This gives leaders pressure and incentives to act certain, even if it would have been better to be open to uncertainty (D'Souza and Renner, 2016, p.65-71). The cause of this pressure is described as follows:

"We follow people because of what they know, not because of what they don't know." (D'Souza and Renner, 2016, p.71)

Sweetman (2001) agree with D'Souza and Renner (2016) in that uncertainty requires managers to admit that they do not know everything. According to Sweetman (2001), this allows managers to tap into the resources of the other employees, in that they can work together to find solutions once the manager has acknowledged the uncertainty and admitted that he or she does not hold all the answers.

D'Souza and Renner (2016, p.165-167) argue that this requires an open mindset, and an ability to see things from fresh perspectives. Using this open mindset in an organisational context means to move away from top-down control and traditional hierarchies, and instead embrace doubt, and entrust employees with autonomy, purpose, and responsibilities (D'Souza and Renner, 2016, p.172-200). This purpose will also help the employees in managing uncertainty, as values and purpose help people find their way through the unknown (D'Souza and Renner, 2016, p.181).

3.2.2 Planning and strategising under uncertainty

Increased uncertainty makes change goals more uncertain as well. According to D'Souza and Renner (2016, p.85-86), it is impossible to know what a desired future should look like, and thus

also impossible to plan and strategise with a clear goal in mind. There are simply too many variables, and too much uncertainty.

D'Souza and Renner (2016, p.87) present a model for uncertainty, explained by the following famous quote from Donald Rumsfeld:

"There are known knowns; there are things we know we know. We also know there are known unknowns; that is to say we know there are some things we do not know. But there are also unknown unknowns – the ones we don't know we don't know."

With this description of uncertainty, one can identify four different types of systems with varying complexity and uncertainty:

Simple: "known knowns", familiar and certain

Complicated: "known unknowns", predictable and forecastable

Complex: "unknown unknowns", unpredictable and emergent

Chaotic: "unknowable unknowns", no patterns at all

A common failure in leadership is mistaking complex problems for complicated problems, and thus trying to find easy solutions for unpredictable problems that should have been adapted to (D'Souza and Renner, 2016, p.93). One such common 'quick fix' is restructuring an organisation once it delivers bad results (D'Souza and Renner, 2016, p.93). This is often caused by the 'illusion of control'; leaders overestimate the control they have over a situation (Langer 1995:311-328, as cited in D'Souza and Renner, 2016).

3.2.3 Embracing uncertainty

Another reason why leaders might oversimplify problems, is because they want to avoid uncertainty. D'Souza and Renner (2016, p.107-109) argue that it is natural to shy away from uncertainty, because people fear the unknown. They further argue that this fear of the unknown is linked to fear of incompetence and of failure, as one does not now what to do. This makes people avoid uncertainty, as they avoid doing things that they do not know how to do (D'Souza and Renner, 2016, p.109-166). Other related reactions to uncertainty include control, passivity,

paralysis, negative exaggerations, premature actions, and resistance (D'Souza and Renner, 2016, p.117-126).

In order to manage change during uncertainty, one has to make decisions even though we do not know the answer (D'Souza and Renner, 2016, p.285). D'Souza and Renner (2016, p.285-287) argue that this should be regarded as an opportunity for freedom, rather than something negative. They argue that uncertainty should be viewed as a potential for new opportunities and a source of new inspiration rather than something to fear, and that one should focus on the possibilities for experimentation, deviating, and trying out new things. Thus, uncertainty provides opportunities for taking risks, which could result in competitive advantages. (D'Souza and Renner, 2016, p.139-158)

According to D'Souza and Renner (2016, p.294-297), a certain degree of boldness is needed to manage uncertainty. As previously discussed, changing under uncertainty involves risk-taking. However, they argue that this boldness should not promote overconfidence. Rather, leaders should embrace their vulnerabilities. By appearing both vulnerable and compassionate, leaders can promote a culture of openness. D'Souza and Renner (2016, p.301-303) argue that change under uncertainty can feel lonely, and that the open culture can help bring employees closer together in order to mitigate this.

Tan and Tan (2005) assess how companies cope with change projects when facing economic uncertainty in a quantitative study. They find that optimism, involvement, adaptability, and flexibility are consistently correlated with successful change when faced with uncertainty.

First, optimism is shown to help employees cope with the change and the uncertainty (Tan and Tan, 2005). They argue that a clear vision for the future, realistic expectations, a positive mindset, and confidence in a strong management are all factors that can contribute to the optimism. This finding seems to substantiate the arguments from D'Souza and Renner (2016) concerned with regarding uncertainty as something positive, rather than something negative. The notion of finding potential and new opportunities in uncertainty from D'Souza and Renner (2016) is closely related to the optimism, positive mindset, and clear vision that Tan and Tan (2005) argue can contribute to successful change under uncertainty. However, they seem to disagree on the role of the management. While Tan and Tan (2005) claim that belief and confidence in a strong management can create optimism, and help with successful change, D'Souza

and Renner (2016) argue that it is dangerous to trust in leaders that appear to be certain as this certainty can be based on oversimplifications and uncertainty avoidance. Instead, D'Souza and Renner (2016) argue that leaders should appear vulnerable. Thus, it seems like strong and certain leaders can help create optimism, but they also create a risk for oversimplification and premature decision-making.

Involvement is also found to help employees cope with the uncertainty (Tan and Tan, 2005). This correlates with the discussion in section 3.1.8, where we saw that uncertainty could contribute to employee stress, as employees feel a lack of control. Lecraw (1992) argue that employee participation can help mitigate this frustration over the uncertainty, as it gives the employees back a measure of control. One reason why managers might hesitate to involve employees, is a lack of trust. According to Sweetman (2001), studies show that managers often overestimate how risk-averse the employees are. This might lead to managers not involving employees in decision-making, according to Sweetman (2001). However, this might not be the case in Norwegian companies. As discussed in section 3.1.4, Levin et al. (2012, p.154) argue that involvement is particularly important in Norwegian companies, due to the strong traditions of cooperation set by the Norwegian model. This involves a positive view of the employees' competences, will, and responsibilities (Levin et al., 2012, p.154), as discussed in section 3.1.4. Thus, it seems like involvement can be a good way for Norwegian companies to handle frustration from uncertainty.

Tan and Tan (2005) make a distinction between adaptability and flexibility. They define adaptability as the ability to react to external changes in the market, and flexibility as the ability to make changes to the internal structure of the organisation in response to the changes. Thus, flexibility is needed for an organisation to be adaptable. Tan and Tan (2005) find that both adaptability and flexibility are positively correlated with successful change under uncertainty. How companies can achieve the flexibility necessary to adapt will be discussed in the next section.

3.2.4 Flexibility

Uncertainty and flexibility are closely linked, as flexibility in the organisation is a way to cope with the growing uncertainty in a dynamic business environment according to Eppink (1978)

and [Nandakumar et al. \(2014, p.1\)](#). Similarly, [Sushil and Stohr \(2014, p.V\)](#) and [Sushil \(2014, p.25\)](#) argue that companies need flexibility, as they are facing increasing competition, globalisation and rapidly advancing technology. Both [Bahrama \(1992\)](#) and [Byrkjeflot \(1997, p.12\)](#) argue that these factors moves the organisations toward flexible and agile organisational forms that can handle novelty, innovation and continuous change.

In this section, we use the following definition of flexibility:

"Organisational flexibility refers to the ability of an organisation to respond to a variety of changes in the competitive environment in an effective and timely manner, and depends upon the managerial capabilities and the responsiveness of the organisation" ([Volberda, 1996](#)).

Studies suggests that this type of organisation flexibility is helpful in enhancing organisational performance ([Grewal and Tansuhaj 2001](#); [Nadkarni and Narayanan 2007](#); [Worren et al. 2002](#); [Barret and Weinstein 1999](#), as cited in [Nandakumar et al., 2014, p.2](#)). [Byrkjeflot \(1997, p.11-13\)](#) argues that flexibility is particularly important for Norwegian companies, as they are typically targeting small specialised and complex customer segments. Therefore, they need to be very responsive to customer feedback and demand, as they need the knowledge of their customers in order to develop the complex products and services.

In order to have flexibility an organisation needs the following three capabilities according to [Shimizu and Hitt \(2004, as cited in Nandakumar et al., 2014, p.2\)](#): An ability to pay attention to (negative) feedback, ability to collect and assess (negative) data in an objective manner, and the ability to institute and accomplish change when facing uncertainty quickly enough. Similarly, [Sushil \(2014, p.12\)](#) presents a list of best practises for creating organisational flexibility. The list includes practices such as: Ambidexterity in the organisation, Empowerment and localness of decision-making, developing multidisciplinary across the organisation, institutionalising organisational learning, working through self-organising cross-functional teams, implementing dialogue projects and suggestion schemes.

Additionally, [Eppink \(1978\)](#) argues that companies can diversify aspects of the organisation so that they are less influenced by any single market force. An example of this will be for a company to diversify its product portfolio so that it is not as exposed to fluctuations in one particular market. However, [Eppink \(1978\)](#) comments that such diversification requires a strong

financial position.

Another factor which can affect a company's flexibility is hierarchy. (Bahrama, 1992) argues that organisational structures with flatter hierarchies have the expected benefits of becoming more flexible and responsive by reducing time between decision and action, which enables faster response to competitive dynamics. Rigid organisations with bureaucratic practices on the other hand, which emphasise formal rules and procedures, tend to have low flexibility (Barret and Weinstein 1999; Dastmalchian and Blyton 1998, as cited in Nandakumar et al., 2014, p.1).

This is closely related to the strategic paradox of deliberateness and emergence, as discussed in section 3.1.2. Flexibility can help enable strategic emergence, in that it is concerned with continuously reacting to changes in the environment. As discussed, flexibility is dependent on a low degree of hierarchy and formal control, which implies a reduction of the control-aspect of the paradox. This might cause problems, as companies need both emergence and deliberate control as discussed in section 3.1.2. Therefore, (Bahrama, 1992) argues that balancing the need for flexibility and rapid changes without creating chaos and confusion for the employees is important. Englehardt and Simmons (2002, as cited in Tan and Tan, 2005) argue that the paradox can be juxtaposed by having a two-level structure. The first level is operational level, which is characterised by control. The second level is the organisational level, where lateral teamwork can support flexibility through dynamic experimentation (Englehardt and Simmons 2002, as cited in Tan and Tan, 2005). Experimentation will be discussed later in this chapter.

3.2.5 Systematisation, formalisation and standardisation

Reynolds and Holwell (2010) discuss how a 'system approach' based on creating models of complicated systems, can help managing change when faced with uncertainty and complicated problems. Reynolds and Holwell (2010) present different approaches for systematising complex issues, in order to simplify problems, make them more transparent, and make solving them easier. The details of the different approaches are considered to be outside the scope of this thesis. They are, however, all centred around mapping out relations between different elements of the problem, in order to break it down, and to conceptualise and visualise it. Reynolds and Holwell (2010, p.17) argue that this systematisation has three general purposes: to make sense of a situation, to find different perspectives, and to explore power relations.

This may seem contradictory to [D'Souza and Renner \(2016\)](#) who argues that uncertainty creates problems that cannot be predicted, analysed or solved, as previously discussed. They argue that while complicated problems can be analysed and solved, complex problems cannot be solved due to their unpredictable nature, as discussed in section 3.2.3. Therefore, they argue that one should embrace the inherent uncertainty of the problems, rather than try to solve them. [Reynolds and Holwell \(2010, p.5-6\)](#) also differentiate between different types of problems based on the uncertainty involved: 'difficult problems' and 'Messes', where the Mess involves a greater degree of uncertainty. [Reynolds and Holwell \(2010\)](#) agree with [D'Souza and Renner \(2016\)](#) in that complex problems, or Messes, cannot be 'solved' or directly controlled. They do, however, argue that system thinking can be used to explore different aspects and perspectives of the problem, and to prevent making assumptions and leaping to conclusions ([Reynolds and Holwell, 2010, p.6](#)). These are, as previously discussed, factors that [D'Souza and Renner \(2016\)](#) argue are necessary when faced with uncertainty.

If systematising can be beneficial when dealing with uncertainty, then it is possible that standardised systems and processes in the organisation can help make the change process more efficient, as a standardised system will be mapped out and systematised beforehand. However, according to [Jacobsen \(2012, p.95-96\)](#) a high degree of standardisation decreases the ability to change continuously. [Jacobsen \(2012\)](#) refers to standardisation as "rules, routines and procedures". These could help create the clarity and transparency desired when using a system approach, but at the same time, could make changes more difficult. [Jacobsen \(2012, p.95-96\)](#) finds that employees in very rule-driven environments often became more focused on following the rules than on problem solving, and had problems with changes that did not follow the rules.

A related discussion, is how standardised and formalised the change process itself should be in a change project. According to [Mattes \(2014\)](#), a dynamic trade-off between flexibility and formalisation is needed. The need for flexibility was discussed in the previous section. However, there is also a need for formalised processes. In the study by [Mattes \(2014\)](#) it is found that formalisation can serve as a toolkit the actors can use, and it did not necessarily limit the freedom of action. In the study it seems like formalisation "facilitates rather than hampers procedures" in corporate change projects ([Mattes, 2014](#)). Formalisation as a facilitator implies that the tension between flexibilisation and formalisation is reduced (Farjoun 2010, as cited in [Mattes, 2014](#)).

Thus [Mattes \(2014\)](#) seems to argue that the proceedings and the process of a project should be formalised, but the actors should be given leeway and flexibility within these structures.

3.2.6 Experimentation and 'fail fast'

When leading change under uncertainty, [D'Souza and Renner \(2016, p.243\)](#) argue that leaders have to improvise. They further argue that instead of creating a detailed plan, one should generate several hypotheses that can be revised when new data appears. This allows for keeping several perspectives in mind at the same time, and forces one to not jump to conclusions ([D'Souza and Renner, 2016, 248-252](#)). This can be difficult, as many leaders are faced with pressure for delivering quick results ([D'Souza and Renner, 2016, p.252](#)). The improvisation involves sensible risk taking and exploring. In practice, this means that experimentation is necessary in uncertain environments ([D'Souza and Renner, 2016, p.264-267](#)). By experimenting, rather than problem solving, one gains freedom of action in uncertain environments ([D'Souza and Renner, 2016, p.267](#)). The focus of the experimentation should be to learn, and thus it is important to embrace mistakes ([D'Souza and Renner, 2016, p.267-271](#)). [D'Souza and Renner \(2016, p.270\)](#) argue that by acknowledging the value of learning from ones mistakes, rather than associating mistakes with failure and low performance, one can open up new possibilities. This positive attitude towards mistakes will allow organisations to 'fail faster', as employees are more open to the possibilities of failure ([D'Souza and Renner, 2016, p.272](#)). By embracing 'fail fast', and abandoning strategies based on attitudes like 'failure is not an option', the organisation can continuously learn and improve based on feedback ([D'Souza and Renner, 2016, p.272-274](#)).

The ability to 'fail fast' is, according to [DiPiro and Chisholm-Burns \(2013\)](#), to identify failures at an early point in time, in order to save further expenses. However, [DiPiro and Chisholm-Burns \(2013\)](#) argue that people often are reluctant to accept that failure is a part of the process towards success, and that they are not comfortable with admitting failure.

[DiPiro and Chisholm-Burns \(2013\)](#) state that to fail fast does not imply a lack of commitment, but rather shows risk-taking motivated by opportunity, and a willingness to experiment. According to [DiPiro and Chisholm-Burns \(2013\)](#) fail fast does not contradict with planned approaches to change, but rather incorporates the ability to quickly learn and adjust the plan to make improvements.

In order to manage change under uncertainty, one has to adapt instead of trying to resist or control the unpredictable and complex, according to [D'Souza and Renner \(2016, p.308\)](#). One must also keep on trying, no matter the challenges and obstacles one is faced with ([D'Souza and Renner, 2016, p.309-312](#)). [Dingsøy et al. \(2012\)](#) argue that this can be done using Agile, as accepting uncertainty is one of the core principles of Agile. How Agile can be used to manage change will be discussed in the next section.

3.3 Agile change management

Agile change management is based on the idea that in order to deal with unforeseen events and changes to the change process, one must be able to revise the plans and goals of the change process underway ([Karud and Årvik, 2016](#)). This contrasts to what will be referred to as 'plan driven change', in which the change process is first planned in detail, and then executed in a strictly sequential fashion. Agile consists of different methods, concepts and principles that leads to agility ([Dingsøy et al., 2012](#)). Agility can be defined as: "A continued readiness to rapidly or inherently create change, proactively or reactively embrace change, and learn from change while contributing to perceived customer value (economy, quality, and simplicity), through its collective components and relationships with its environment" (Conboy 2009, as cited in [Dingsøy et al., 2012](#)). An emerging aspect of Agile is the process of continuously assessing and improving the link between technology strategy and business strategy. This is referred to as 'BizDev' ([Fitzgerald and Stol, 2015](#)).

In the project thesis, we define the core of the agile change management process to be made up of iterations as shown in figure 3.3. The figure shows how the change consists of three parts: goals, iterations and finish ([Karud and Årvik, 2016, p.31](#)). The process starts by defining a list of goals and sub-goals for the change process. The change itself is then executed in a series of iterations. Each iterations seeks to implement a part of the change, defined by one or more of the sub-goals. After each iteration the process is evaluated, which allows for changing the goals or their prioritisation before the next integration. This feedback therefore allows for the change process to adjust and adapt to changes in the environment ([Karud and Årvik, 2016, p.31](#)). After all goals and sub-goals have been reached, the process enters the 'finish' phase, where the entire

process is evaluated in order to learn from it for future processes.

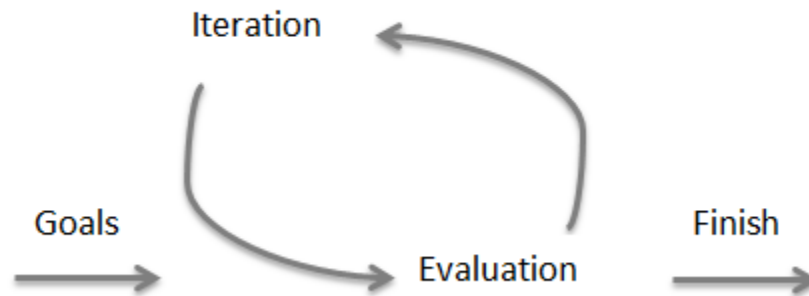


Figure 3.3: Agile change process (Karud and Årvik, 2016)

In our project thesis we argue that the change process described above should be executed by an autonomous team. The top management should still define the goals of the change, and thus have control of the boundaries of the project, but an autonomous and self-managed team should be responsible for designing and implementing the change in each iteration.

3.3.1 Agile methodologies

Agile methods have revolutionised information technology according to many researchers (Rigby et al., 2016). The methods have greatly increased success rates in software development, improved quality, speed to market and boosted the motivation and productivity of IT teams (Rigby et al., 2016). Agile offers numerous benefits according to Rigby et al. (2016) including: Productivity, employee satisfaction, reduces waste in meetings, planning, and more. It allows senior management more time for higher-value work instead of micromanaging functional projects (Rigby et al., 2016). According to Rigby et al. (2016) agile methodologies have increased efficiency in software development by up to 80 %, and they argue that similar results can be achieved in other fields, like strategy and change management.

Agile methodologies with new values, principles, practices and benefits are an alternative to "command-and-control style management" (Rigby et al., 2016). Agile methodologies are spreading across a broad range of industries and functions, including top management (Rigby

et al., 2016). Examples include marketing, human resources, running senior leadership group, machine development, creating radio programmes, fighter jet production, wine production, warehousing and large transformation programmes (Rigby et al., 2016). According to Franklin (2014, p.7), the key to agile change is to let the change emerge through continuous learning, and accept that it is impossible to plan change in detail from the start. To achieve this, the change should be implemented through an iterative process (Franklin, 2014, p.8). According to Franklin (2014), the roadmap of the project should be tailored to the scope of the project, the level of central control in the organisation, and the specific methods and approaches used in the organisation. However, some elements will be important regardless of the specific use case. Franklin argues that the project should have a set time frame Franklin (2014, p.47). Within this time frame, the change should be implemented through a series of iterations that each consists of several processes. The change is made gradually from the outcomes of the iterations.

According to Rigby et al. (2016) companies implement Agile by "taking people out of their functional silos and putting them in self-managed and customer-focused multidisciplinary teams" and claim that the agile approach is accelerating profitable growth and helping create a new generation of skilled general managers. Lack of knowledge about Agile at the executive level is a threat to agile, because executive managers unwittingly manage in ways that are counteracting agile principles and practises (Rigby et al., 2016). Rigby et al. (2016) state that "Although the method is less useful in routine operations and processes, these days most companies operate in highly dynamic environments".

Rigby et al. (2016) present six practices for leaders who want to capitalise on Agile's potential: Learn how Agile really works, understand where Agile does or does not work, start small and let the word spread, allow "Master" teams to customise their practices, practice Agile at the top and destroy the barriers to agile behaviours.

In the first point Rigby et al. (2016) state that executives have to understand Agile and they present an adapted version of *The Agile Manifesto* (2001) with four main points: People over processes and tools, working prototypes over excessive documentation, respond to change rather than follow a plan and customer collaboration over rigid contracts. Here "customer" can be both internal customers, external customers or future users. The project owner/initiative owner is responsible for delivering value to customers, and mainly coordinates with key stakeholders in the

project (Rigby et al., 2016). The owner creates a prioritised list of goals, called a backlog, and the team break the goals into modules and even smaller sprints (Rigby et al., 2016). In this structure the different sprints are assigned to specific teams, which mitigate situation as described by Bossidy and Charan (2002):

"Everyone may have agreed the idea was good, but since no one was named accountable for results, it does not get done" (Bossidy and Charan, 2002, p.71).

The project leader or process facilitator guides the process, facilitates the team and protects them from distractions (Rigby et al., 2016). The process is transparent and the team holds daily stand-up meetings to review the process, identify roadblocks and give feedback (Rigby et al., 2016).

3.3.2 Evaluation and feedback

According to Bossidy and Charan (2002, p.198) a good strategic plan is adaptable. In short-cycle businesses markets will not wait for your planning schedule, in such a situation periodic interim review can help create understanding for the situation and allow for adjustments to the strategy when necessary (Bossidy and Charan, 2002, p.198). Teare and Monk (2002) argue that organisations have changed radically in recent years, shifting towards flexible and self-managed organisations, and that the key to manage this increasingly rapid change is to focus on learning from change. Byrkjeflot (1997, p.16) presents a similar argument and state that businesses are more knowledge-based and depends more on the people in the organisation than before, therefore, it is more important to develop ways for the organisation to learn systematically. Several authors emphasise the need for learning in order to create continuous organisational growth (Srivastava and Sushil, 2014, p.15). However, pressure to perform often overshadows opportunities to learn (Teare and Monk, 2002). One possible solution to this, is according to Teare and Monk (2002) to embed learning as a structured way of working. They propose managing change in an incremental and organic manner, where there is enough time in between change increments to "capture learning" (Teare and Monk, 2002). Mechanisms for learning should also be implemented in the change process, such as debriefings and learning teams (Teare and Monk, 2002). (Teare and Monk, 2002) argue that such a structured change process is necessary for learning from change,

as it prevents the change from being constantly reactionary. [Teare and Monk \(2002\)](#) describe this as "fire fighting", where lack of structure causes problems that arise to be patched instead of solved, which again cause the problems to reoccur due to the incomplete solutions. In this state, it is easy to feel like there is insufficient time to solve all the problems, which cause learning to be unprioritised ([Teare and Monk, 2002](#)). In addition to this structured change process, ([Teare and Monk, 2002](#)) argue that a culture for learning is also required to be able to learn from change. Elements of this learning culture includes openness, through free and reliable communication, as well as trust and risk-taking (Fulmer and Keys 1998, as cited in [Teare and Monk, 2002](#)). This learning culture will help embedding learning as a way to respond to complexity in the market, as the organisation is able to take risks, and learn from them (Fulmer and Keys 1998, as cited in [Teare and Monk, 2002](#)).

[Longenecker et al. \(2008\)](#) argue that it is necessary to take time to reflect and learn after change processes. They state that many organisations claim to learn from change projects, but that in reality, the root causes for the success or failure of a given change is rarely understood. Therefore, [Longenecker et al. \(2008\)](#) argue that in-depth post-change analyses are key to learn from changes. They claim that the speed of the change, as well as the effectiveness of the change, are critical factors that should be assessed in the post-change analysis ([Longenecker et al., 2008](#)). They propose a system where the change team identifies what they have learned during the process, in addition to grading both the individual team members as well as the team in general based on speed and effectiveness. Finally, [Longenecker et al. \(2008\)](#) stress the importance of sharing the lessons learned with the rest of the organisation.

Similarly, [Maurer \(2013\)](#) argues that organisations should analyse what could have been done differently after a change process. He argues that one factor which cause organisations not to do this, is the fear of talking about failure. Often, failure has negative consequences, which makes it difficult to talk openly about it ([Maurer, 2013](#)). To counter this, [Maurer \(2013\)](#) suggests that when evaluating change, the sole focus should be on the positive aspects of learning from the failure, and that feedback in no way must affect performance reviews. The evaluation itself should consist of open-ended interviews with employees who represent different interests in the organisation ([Maurer, 2013](#)). [Maurer \(2013\)](#) argues that it is important to make sure that the informants are honest during the interviews, and that they do not "pull punches" and try to

gloss over failures. Maurer (2013) comments that this evaluation process does not need to take much time, and that the potential benefits can be enormous (Maurer, 2013).

Srivastava and Sushil (2014, p.15) argue that organisations need to go beyond measuring and monitoring performance, and should seek to gather input and feedback from employees on different levels in order to learn. A proposed way of facilitating organisational learning is through a three component framework: A learning cycle (before, during and after any event), lessons discussed and refined in practice during the project and lessons incorporated as a knowledge asset (i.e in a document) (Srivastava and Sushil, 2014, p.15).

3.3.3 Autonomy

A growing need in strategic management is for units in organisations to practise self-organisation and have teams that work autonomously (De Wit and Meyer, 2014, p.555). According to Eriksen (1997, p.414) de-centralisation matches influence with responsibility, and is a way to increase the adaptability in an organisation, but it needs vertical cooperation and communication channels in order to avoid silos. In Vallas (2003)'s study the changes implemented under conditions of local autonomy were more malleable and were implemented in a manner which fit the organisation. An author who has influenced the field of autonomy for decades is Hackman (1986), who discusses self-management in organisations. Hackman argues that traditional control-oriented management methods can have negative outcomes for both the organisation and the employees, and that future organisations will rely more heavily on self-management.

Hackman (1986) defines self-management with five behavioural signs: people take personal responsibility for their work, continuously monitor their own work, manage their own performance, actively seek guidance when needed, and take initiatives to help others improve their performance.

According to Hackman (1986), self-managing units often show either very good or very poor efficiency, and there are few self-managed units that perform only moderately well. This tendency for extremes indicates that self-management can be very effective if implemented right, but fails if some conditions are not met. Hackman (1986) identifies five general conditions for effective self-management:

- **Direction** - the direction of the work is clear and engaging
- **Structure** - the unit structure enables performance through the expectations, unit composition, and task design
- **Context** - the organisational context is supportive, through information, educations and rewards
- **Coaching** - expert coaching and consultation are available
- **Resources** - material resources are adequate and available

When it comes to leadership of self-managing units, [Hackman \(1986\)](#) argues that critical leadership functions are still required even though the units are supposed to lead themselves. [Hackman \(1986\)](#) distinguishes between two types of critical leadership functions; monitoring and taking action. In leadership of self-managing units, monitoring involves making sure the five conditions for effective self-management as discussed above are present and that operation is efficient. Action taking then involves fixing problems with the conditions to enable efficient processes. In this way, the leader will continuously diagnose and remedy the conditions to ensure that the unit can operate effectively. The challenges and conditions for implementation of autonomy and Agile is further discussed below.

3.3.4 Autonomous change teams

The tendency to utilise teams in fast moving companies is not new, as reported by [Bahrama \(1992\)](#) in the early 90s. Companies are increasingly utilising multi-functional, multi unit teams in order to manage cross-unit projects and reducing time-to-market. A key advantage of such teams is their intrinsic flexibility. [Pearce and Sims \(2002\)](#) have conducted a quantitative study of the effectiveness of so-called vertical leadership and shared leadership in change management teams. By vertical leadership they refer to 'traditional' change management teams where leadership is exercised only by a formally appointed team leader, while shared leadership refers to change management teams where all team members exercise leadership. This notion of shared leadership where all team members exercise leadership is shared with [Levin and Rolfsen \(2010, p.162\)](#), who argue that leadership functions are not tied to a leader role or a person, but can be

exercised by anyone. They argue that leadership functions have to be maintained in order for a team to function optimally, but that these not necessarily have to be done by a team leader.

After studying 71 change management teams, [Pearce and Sims \(2002\)](#) found that shared leadership is an important predictor of team effectiveness when dealing with complex tasks. Vertical leadership was also found to predict effectiveness, but to a smaller degree. Thus, both team leadership types appear to be effective, with the shared leadership model being relatively more effective than the vertical leadership model.

[Pearce and Sims \(2002\)](#) also found two leadership styles that positively impacted the efficiency of change management teams with shared leadership, and two styles that negatively impacted the efficiency. The two leadership styles that improved efficiency, are referred to as transformational leadership and empowering leadership. Transformational leadership is defined as leadership based on charisma and inspiration, while empowering leadership is leadership based on encouraging independent actions and teamwork. On the other hand, the two leadership styles that had negative effects on the team efficiency are aversive leadership, and directive leadership. Aversive leadership is defined as leadership based on coercion and punishment, while directive leadership is leadership based on positional power and commands ([Pearce and Sims, 2002](#)). According to [Pearce and Sims \(2002\)](#) these findings are both expected, and consistent with the philosophy and intent behind the empowered teams. It is not surprising that change management teams based on shared leadership seem to work better with involvement, autonomy, and inspiration, rather than control and coercion.

This makes the shared leadership model seem suited to the Norwegian work culture, discussed in section 3.1.3. [Levin and Rolfsen \(2010, p.157\)](#) argue that leadership in a Norwegian context has to consider the cooperation model discussed in section 3.1.3, and reinforce the competitive advantages that this provides. Therefore, autonomous, self-managed teams seem well suited for Norwegian work environments, as [Levin and Rolfsen \(2010, p.157\)](#) argue that they are based on motivation and involvement, rather than coercion and control. According to [Levin and Rolfsen \(2010, p.157-158\)](#) this type of team is not in accordance with the perspectives of Kenning ([Schjander, 1987](#)) as discussed in section 3.1.4.

Another factor to consider when using autonomous teams for driving change, is diversity within the team. According to [DiStefano and Maznevski \(2000\)](#), poorly managed diverse teams

perform significantly worse than homogeneous teams, while well-managed diverse teams have the potential to out-perform homogeneous teams. This is illustrated in figure 3.4. As shown in the figure, the number of diverse teams that perform well are significantly lower than the number of diverse teams with poor performance. Thus, it appears like managing diverse teams is difficult, but when successful, the performance benefit can be great.

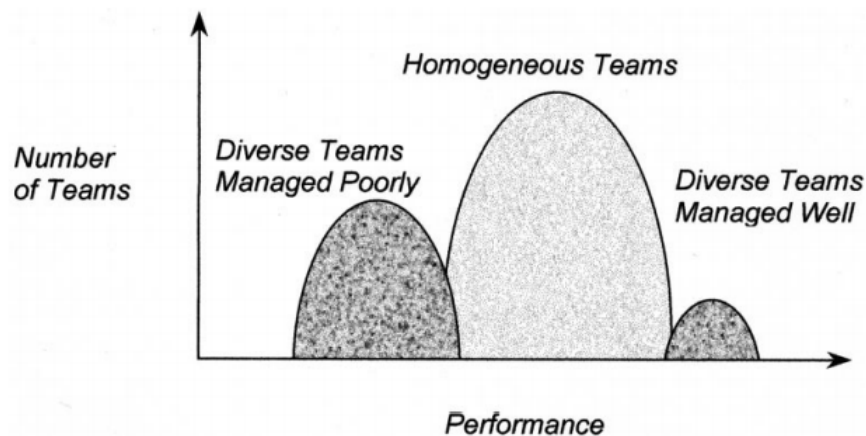


Figure 3.4: Diverse teams (DiStefano and Maznevski, 2000)

Levin and Rolfsen (2010, p.52) similarly argue that it is easy to work with people similar to oneself in homogeneous teams, but that such teams can suffer from lack of reflection, discussion, and totality, and of premature conclusions. These problems can be solved with diverse teams, where team members have different backgrounds and profiles, which contributes to a greater totality. However, Levin and Rolfsen (2010, p.52) argue that this demands significant respect and openness, as well as the ability to tolerate different people and different opinions.

3.3.5 Conditions for Agile

Rigby et al. (2016) identify five conditional factors which makes Agile suited. It is favourable in a market environment where customer preferences and solution options change frequently (Rigby et al., 2016). In other words, uncertain market conditions. It is dependent on customer involvement, which means that close collaboration and rapid feedback are feasible, and that the customer's knowledge of the goal is increased during the progress (Rigby et al., 2016). Where the "innovation type" or type of change is complex, the solutions are unknown, the scope is unclear

and cross-functional collaboration is vital (Rigby et al., 2016). Another factor is the modularity of the work, the incremental progress should have a value and be usable to the customer, and work can be broken into parts and carried out in rapid iterative cycles (Rigby et al., 2016). Another condition is that interim mistakes can provide valuable learning (Rigby et al., 2016). Rigby et al. (2016) state that activities such as strategy development, resource allocation, cultivating breakthrough innovations and improving organisational collaboration are suited for an agile approach in top management. By utilising Agile and understanding it in top management they improve productivity and morale, they speak the language of the teams they are empowering, they experience similar challenges and learn together and they are able to recognise and stop behaviours that hinder agile teams (Rigby et al., 2016). This improves results, in addition to increasing confidence and engagement in the organisation (Rigby et al., 2016). In our project thesis (Karud and Årvik, 2016) we identified the following conditions where Agile may be suited: High degree of uncertainty, high pace of change in the environment, changes with unclear goals, need for exploration, and a culture with a low power distance based on cultivation and collaboration. The culture condition will be discussed below in section 3.3.7.

3.3.6 Agile adoption

In the discussion on destroying barriers to agile behaviours Rigby et al. (2016) present five main techniques: Get everyone on the same page, don't change structures right away; change roles instead, name only one boss for each decision, focus on teams and not individuals, and lead with question and not orders. To get everyone on the same page the agile teams should work on the same enterprise priorities (Rigby et al., 2016). Adopting cross-functional teams rarely demands major changes in the organisational structures (Rigby et al., 2016). The primary requirement is that different disciplines learn how to work together. According to Gandomani et al. (2013) "Tailoring" is a possible approach to adopting agile, which means using agile practises beside plan-driven methods. The companies using this approach want to use agile elements in some specific activities, without making substantial change in their organisation Gandomani et al. (2013). Sahota (2012) states that it is possible to adopt Agile in parts of the organisation, where the organisation creates "barriers" in the form of interfaces between agile units and the rest of the organisation. In this way the agile units can be shielded from the plan-driven processes of

the rest of the company (Sahota, 2012). With this approach it is possible to transform one team or a group in the organisation to Agile (Sahota, 2012). Having different management systems in an organisation is possible according to Dawson (1996).

Denning (2016) criticises Rigby et al. (2016) for not taking the differences between "being agile" and "doing agile" into consideration. "Being Agile" implies that an understanding is needed for adopting agile, because you need the mindset, values and culture of agile, and not just a methodology (Denning, 2016). The managers have to have an agile mindset for the company to gain full benefits of Agile (Denning, 2016). Agile and culture will be discussed in the next section.

3.3.7 Culture and Agile

As highlighted by Denning (2016) and Sahota (2012), Agile is not just a methodology. Therefore, culture has to be taken into account. We start with a short discussion of culture in a Norwegian context and the needed elements of a culture in the current business environment, before relating the cultural aspect to agile. The development, or "change", of a culture is outside the scope of this thesis, but the cultural dimension still has to be taken into consideration.

According to Grendstad (1997, p.123) it is necessary to look at both leaders and those being led as well as the social context in which this takes place. This is needed in order to say something about management on more than an individual level. In other words one has to consider culture when looking at management. Culture is about: "attitude and ideologies on one side, social relations on the other, and where these two sides mutually support each other one can speak of culture as a way of living" (Grendstad, 1997, p.124). Grendstad (1997, p.124) presents an analysis based on "Theory of socio-cultural viability". This theory states that culture is captured through two social dimensions. One of them is "Group", which deals with who one interacts with. Including the degree of face to face contact and degree of togetherness. The second dimension is "Grid", which deals with how one interacts with others. It includes rules for interaction and how strong these are in regards to how one treats others. The Grid dimension can also be interpreted as "Support for Management" and the Group dimension can be interpreted as "Demand for Management" (Grendstad, 1997, p.127). With two axes, this theory identifies four cultures, Fatalism (weak group, strong grid), Hierarchy (strong group, strong grid), Individualism (weak group, weak grid) and Egalitarianism (strong group, weak grid). In Norway the

tendency has been an increase in the group dimension and a decrease in the grid dimension (Grendstad, 1997, p.129). So generally moving towards Egalitarianism. In an egalitarian culture no one has the right to be above others (Grendstad, 1997, p.127). The culture will reject formal management because it increases differences among people, but they need authority to maintain the social boundaries. Because of this, an egalitarian culture suffers from too much or too little management (Wildavsky 1984, as cited in Grendstad, 1997, p.127). This culture can therefore accept charismatic management or management which reduces differences.

Changes in strategies may not be enough for long term growth, and organisations may need an adaptive culture in order to continuously incorporate learning and update the strategies (Srivastava and Sushil, 2014, p.13). An adaptive culture is about a preference for strong and open feedback mechanisms in order to create understanding for areas for improvement and generate opportunities for better results (Srivastava and Sushil, 2014, p.13). Without such a culture it is difficult to execute change, and change may be superficial and not stick (Srivastava and Sushil, 2014, p.13). Having such an adaptive culture is crucial for organisations in high-speed and rapidly changing environments. (Srivastava and Sushil, 2014, p.14).

One very important aspect of national culture in regards to Agile, is power distance (Hofstede, 1983). Power distance is a measure for the degree of accepted and expected inequality, and it is very low in Norway. In order for the employees to be able to engage in self-organisation, a relatively low power distance is required (Hackman, 1986). Autonomous teams may not be suitable if the national culture is defined by a high power distance, and the employees expect the management to make all decisions. However, while national culture will affect the organisational culture, it is the characteristics of the organisational culture which has to fit Agile (Sahota, 2012). Sahota (2012) and Spayd (2010) use Schneider's model for organisational cultures to discuss the organisational culture in relation to agile. It is therefore used to conceptualise culture in an agile context. The model consists of four main cultures and two axis of orientation, described below.

- **Control:** A control culture seeks certainty and predictability. Managers tend to be directive and authoritative; the military is a typical example of such a culture (Spayd, 2010).
- **Competence:** A competence culture seeks freedom, distinction and uniqueness. The

people seek to be experts in their field. The culture is oriented towards learning, an example is an University (Spayd, 2010).

- **Collaboration:** A collaboration culture seeks unity and connectedness. Often involves partnering with customers, and the people are often generalists. Typical examples include sports team or a family (Spayd, 2010).
- **Cultivation:** The last culture, cultivation, seeks a meaning, or making a contribution. A relationship with customers focused on realizing potential. This culture is not very common among for-profit organisations, but more widespread among non-profits, religious and spiritual organisations (Spayd, 2010).

The axis of Schneider's model is often labelled People/Company from left to right, and Reality/Possibility from top to bottom. This can be seen in figure 3.5, which shows how the four types of cultures can be organised as a 2x2 matrix. According to Sahota (2012), agile culture is mapped into Collaboration, Cultivation and Competence. Control is, therefore, not suited for an agile adoption (Sahota, 2012).

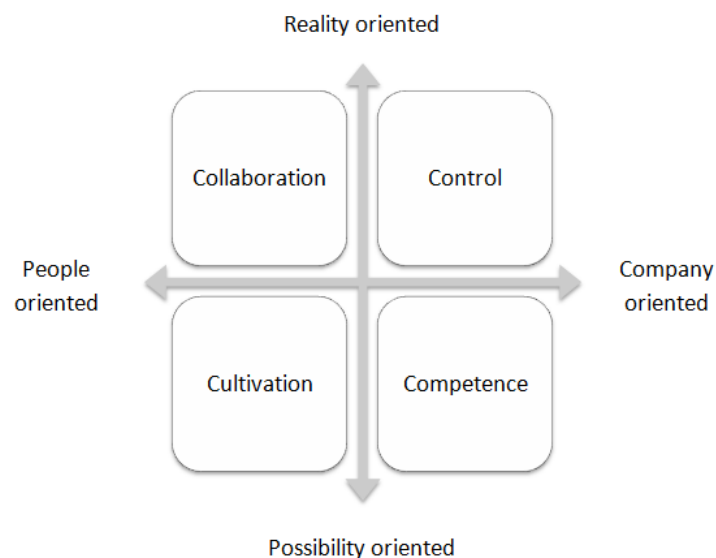


Figure 3.5: Summary of Schneider's Culture Model (Sahota, 2012)

3.3.8 Project thesis findings

In the project thesis (Karud and Årvik, 2016) we analysed agile change management by breaking it down into the five different parts of change presented in section 3.1.1; context, content, process, drivers, and outcome. Based on this analysis, we discussed how five aspects of agile change management could relate to the strategic change paradoxes presented in section 3.1.2. The results of this discussion are presented in figure 3.6.

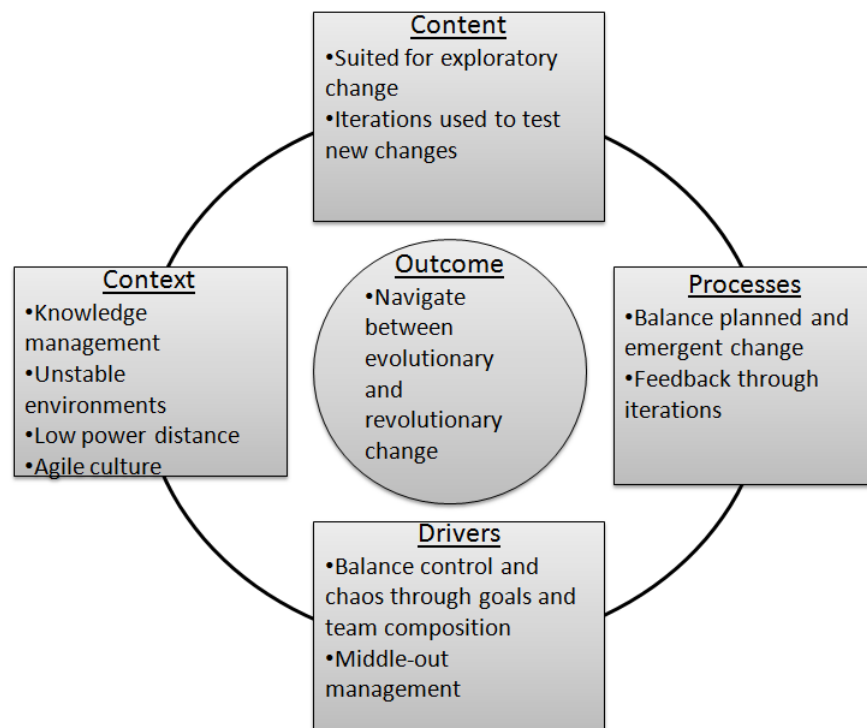


Figure 3.6: Aspects of agile change (Karud and Årvik, 2016)

As shown in figure 3.6, our findings from the project thesis concerning content indicate that Agile is a good option for managing change in unstable environments, as it can be used to explore creation of new products, new markets or new customers by using the change iterations to experiment. We argue that the most important change driver in agile change management is experience, through what we define as middle-out management. This involves basing decisions on experience and testing rather than pure top-down control or bottom-up chaos. This is also concerned with implementing change based on experimental experience. In addition, by changing the goals and team composition of the agile change management team, one can

balance the top-down and bottom-up influences. When it comes to outcome, agile change management is suited for producing both evolutionary and revolutionary change. The main advantage that agile change management has in this aspect is the ability to navigate between the two, depending on how stable the current environment is. However, we argue that agile change management is better suited for organisational contexts characterised by unstable environments, as it is designed for unstable conditions. We do, however, find that agile change management is dependent on an organisational culture suited for self-management and a national culture with a low power distance, as discussed in the previous section. This is important in order for the autonomous teams to be effective.

Chapter 4

Presentation of the Case Companies

In this chapter we first present the two major challenges our case companies are facing, before we present each of the case companies and their specific change cases.

4.1 Main challenges

As introduced in chapter 1, most of our case companies are at the time of writing facing one of two major challenges: an oil crisis and digitalisation.

The oil crisis is an economic crisis in Norway mainly caused by reduced activity in the oil sector and a reduced oil price. The crisis is a complex phenomenon, and we will focus on the consequences which affects the companies we have studied. These consequences in most cases directly affects the companies through the loss of customers and revenues. One informant explains that the changes have happened very fast. When the oil price fell the oil companies started to reduce their capital expenditures. This led to a reduction in the daily rates for the shipowners and the loss of income. The shipowners stopped building more ships and the shipyards and the suppliers lost their income as well. The oil crisis impacts not only the oil industry itself, but also several other industries depending on the oil industry. Companies in these industries will all have to adapt to the changes, for example by finding new markets and developing new products.

Digitalisation poses a challenge for many different companies. Many companies have, for example, started digitalisation processes where it is unknown how much impact the digitalisa-

tion will have. This challenge impacts companies across sectors, and several of our case companies are currently undergoing transformation programmes focused on digitalisation in order to face rapid technological developments and increasing competition.

4.2 The companies

4.2.1 Infrastructure Company A

Infrastructure Company A is a large infrastructure company, with several geographically separated departments. At Infrastructure Company A, we interviewed the following two informants simultaneously:

Informant	Position
Programme Manager A	Transformation Programme Manager
EVP A	Executive Vice President

Table 4.1: Informants from Infrastructure A

As an infrastructure company, Infrastructure Company A maintains critical systems. This makes agile change management more difficult, as changes to the critical systems need to be planned in detail, and cannot be experimented with. However, Infrastructure Company A implements an agile change methodology in several change projects that does not directly affect the critical systems. One such project is a transformation programme focused on digitalisation. This transformation programme was previously managed by EVP A, but Programme Manager A recently took over as programme manager.

Transformation programme

The transformation programme is implemented as an agile change process, because the goal and the implementation is uncertain. According to EVP A, the content of the digitalisation process is mostly uncertain. EVP A describes it as driving a boat through thick fog in that one never knows what one will encounter along the way. In order to deal with this uncertainty, it was decided that the change should be implemented in a series of 90-day iterations called 'sprints'.

After 90 days the sprint would be evaluated. If the change implemented during the sprint is found to be successful, the change is scaled up to the entire company. If, however, the change is deemed to be a failure, it is scrapped immediately. This concept is called "scale fast, fail fast". At the start of the transformation programme, each sprint was an independent change. This was later changed, and now, the transformation programme operates with yearly goals, and the 90 day sprints all contribute to these yearly goals.

4.2.2 Infrastructure Company B

Infrastructure Company B is a large infrastructure company, with several locations, who maintains critical systems. At Infrastructure Company B we interviewed 5 informants shown in table 4.2.

Informant	Position
SVP A	Senior Vice President
Manager A	Manager of business areas
Manager B	Manager of several business areas
EVP A	Deputy Executive Vice President
EVP B	Deputy Executive Vice President

Table 4.2: Informants from Infrastructure B

All 5 informants were interviewed separately. At Infrastructure Company B we focused on two main cases we will discuss in this section: The first case is a major change process aimed at preparing the organisation for competition from other parties in the market after having practically a monopoly in their market. This process affects the whole organisation, and especially the divisions we have interviewed. The other case is a change process in the division where EVP B is now deputy EVP. After an evaluation following an earlier re-organisation of the company, this division did not have a satisfactory performance. Therefore, EVP B was moved to this division with the goal of increasing the performance of the division. Both of the two change cases are on-going processes.

Increasing competition

The company is trying to prepare for the increasing competition by doing several changes. One change they are focusing on is raising awareness about the supplier role. In addition, they have focused on formalising processes to be able to make decisions and adjust the organisation to the new market reality and be able to compete. An aspect of this is also making sure the services they offer and the technology they use to offer these services are able to meet a competitive market in terms of quality and cost efficiency.

Increasing division performance

After a large restructuring of the organisation 2-3 years ago the company recently evaluated the divisions. In this process they uncovered sub-par performance in one of the divisions. EVP B was appointed deputy director in the division to increase division performance. The division is concerned with project management, technological development, change management and internal development. The division has not delivered according to the goals set. Projects have been delivered too late and been too expensive. The cooperation between the units in the division has not been good enough and some units have lacked resources. According to EVP B they will split the project unit from the division into a dedicated Project Management Office (PMO). They are still in the process of finding out what they will do with the rest, this will be further discussed in the next chapter.

4.2.3 IT Consulting Company

IT Consulting Company is a medium sized IT consulting firm. At IT Consulting Company we interviewed three informants, shown in table 4.3

Informant	Position
Consultant A	Senior Consultant
Representative A	Safety representative
Manager A	Department manager

Table 4.3: Informants from IT Consulting Company

All three informants were interviewed separately. IT Consulting Company uses agile methods for developing software, so one of the focus areas for the interviews was if they also applied these agile practises when managing change processes. In the company implementation of changes are often done in a democratic fashion, with broad involvement and participation. In IT Consulting company we studied a change case where they use agile concept in the process for finding new customers, new work-practises and products in an ever-changing industry.

Experimentation

According to Manager A, IT Consulting Company views change as a continuous process. This will be discussed in-depth in section 5.1.4. An example of this is the use of 'suggestion boxes', where employees can submit suggested changes to specific parts of the organisation. Manager A argues that suggestion boxes make change stick, as feedback is continuously followed up. However, they still use change initiatives, or focus areas, in order to implement the continuous change. According to Manager A, they use "Plan, Do, Study, Act" (PDSA) cycles to implement the change in an iterative fashion. This framework will be discussed in section 5.4.3. This iterative process is according to Manager A used in order to deal with uncertainty, and is in line with the company's process strategy as discussed in the previous section. According to Manager A it is too easy to jump straight from "Plan" to "Act", therefore, they are currently working on formalising the framework further to prevent this. According to Manager A it is important, but difficult, to create hypotheses and experiment. Manager A cites [D'Souza and Renner \(2016\)](#) in that it is uncomfortable to not know things. This leads to making decisions too early. By formalising the process one can make sure that the necessary experimentation is done, and that decisions are not taken prematurely.

IT Consulting Company also used this continuous approach to change when finding new customers and markets. Instead of trying to target certain market positions, they continuously evaluate potential customers and contracts. This evaluation is based on three criteria: Relations, references and competences. According to Manager A, all three criteria do not have to be met, because if they have two of the criteria met, they can consciously go on and build the third. However, they will not take a contract if none of the criteria are met. The decision to pursue a certain contract is taken in a weekly meeting called a "go/no-go meeting". Here the potential

contracts are evaluated based on the three criteria, relations, references and competences, and the ones that are found to meet the criteria sufficiently are then discussed in a "go meeting" later that day, where managers find people to take on the project, and start writing contract offers. According to Manager A, this process has proven to be very successful. After this process was formalised, IT Consulting Company significantly increased the hit rate of their contract offers according to Manager A.

4.2.4 Production Company

Production Company is a small, Norwegian company, which produces different products for several different customers. They specialise in products requiring technological advanced production processes. Some of their largest customers have been operating in the offshore oil industry, and thus Production Company has also been affected by the crisis.

Informant	Position
CEO A	Managing Director
Project Leader A	Project Leader
Project Engineer A	Project Engineer

Table 4.4: Informants from Production Company

All the informants were interviewed separately. In addition to the interviews, we also had a guided tour of the production facilities. The interviews were focused on how the company faced the oil crisis, but another related case that was discussed, was their approach to finding new customers and markets through research projects.

Loss of customers during the oil crisis

Once the oil crisis hit, Production Company lost some of their largest customers. Because of this, they were forced to cut costs and to downsize, as many of their production lines were stopped. However, Production Company was relatively prepared for the oil crisis, as they had diversified their product portfolio so that they did not depend on one single industry. Thus, the company was not entirely crippled by the crisis, as they still deliver products to other customers.

Research projects

In order to be able to deliver products using cutting edge production technology, Production Company focuses on developing new technology through research projects. These research projects are also used as arenas for developing relations to potential customers. According to Project Leader A, the company actively uses the projects to build relations to their research partners. In this way, they are able to use the projects for both technology development and direct marketing at the same time. Because of this, the research projects form a central part of the company's change strategy, as they function as processes for entering new markets and finding new customers.

4.2.5 Shipyard Company

Shipyard Company is a medium sized shipyard, which specialises in one product related to the oil industry. At Shipyard Company, we interviewed four informants, shown in table 4.5.

Informant	Position
Engineer A	Fabrication Engineering Manager
Engineer B	Method Engineer
Project Leader A	Project leader in Engineering
Committee Member A	Leader of the suggestion committee and union representative

Table 4.5: Informants from Shipyard Company

Engineer A and Engineer B was interviewed at the same time. They recommended that we also should interview Project Leader A, who then joined the interview with Engineer A and Engineer B. Committee Member A was interviewed alone. In our interviews, we covered two different change cases: A "suggestion box" allowing employees to suggest changes, and a transformation project with a focus on delivering new types of products.

Suggestion system

Shipyards Company uses a suggestion box system that allows employees to submit suggestions for changes. According to Committee Member A, both operators and engineers use the suggestion box. This suggestion box is administered by a "Suggestion committee". According to Committee Member A, the committee is led by a representative for the employee union. In addition, the committee includes three other members: A process manager that represents the management, and two engineers from different fields. The committee does not decide which suggestions are implemented, but they work with the management of the department responsible for implementing the change. However, if the department decides not to implement the change and the committee disagrees, they involve other departments and have them evaluate the suggestion as well according to Committee Member A. According to Committee Member A this rarely happens, and the committee usually has a close cooperation with the management. According to Committee Member A, the committee does not currently have routines for following up on implemented changes. This is, however, something the committee wants to implement this year. According to Committee Member A, the committee has experience with both improvements that are forgotten about and not used, and with improvements that are further improved upon by the department. By following up on the implemented changes, the committee can make sure that the changes actually stick, and at the same time gather suggestions on improving the implemented change according to Committee Member A. The latter of which will be a type of iterative change management, as the change first is implemented, and then feedback is collected to improve upon the change.

Transformation project

Shipyards Company is, as previously mentioned, focused on producing one specific offshore-oil related product. They do, however, intend to expand and deliver more products, according to Engineer A, in order to face changing environments in the oil industry. In particular, Shipyards Company has focused on one new product type. According to Engineer A, Shipyards Company did not have the required engineering competence to deliver this new product, and as a result, they lost several contracts. Engineer A believes that this could have been avoided if Shipyards

Company had some control mechanisms in its change process.

The top management of Shipyard Company recently launched a "100 day programme" intended to speed up the transformation process. The reason for this is, according to Engineer A, that when given the choice many employees preferred to keep working with what they were already doing over working with the new product. A part of this programme is to delegate responsibilities among employees. Another part is to include employees, and receive feedback on the process.

4.2.6 Shipowner Company

Shipowner Company is a large listed shipowner company, which has ships in the oil and gas sector.

Informant	Position
Technical Manager A	Technical Engineering Manager
COO A	Chief Operating Officer
EVP A	Executive Vice President, HR

Table 4.6: Informants from Shipowner Company

All informants were interviewed separately, and the focus in the interviews was on how the company was affected by and handled the oil crisis. As a shipowner with ships in the oil and gas sector they have been heavily influenced by the oil crisis. This has led to them having to downsize and lay-up ships.

Reaction to oil crisis

When the oil crisis hit, Shipowner Company was directly affected when the rates in the market went down. When the contracts they had expired they were mostly not prolonged and the rates in the spot-market dropped heavily. Because of this they had to put ships in lay-up and downsize. Their focus is on trying to get the contracts that are available in the market, in addition they have sold some ships. In relation to the downsizing, EVP A states that they have followed

the Norwegian laws regarding this. The changes which have been done is short-term focused in order to "survive" the crisis and wait for the market to get better.

4.2.7 Engineering Company A

Engineering Company A is a large supplier of technological solutions and design within shipping. The company does not have Norwegian owners. Our informants from Engineering Company A are listed in table 4.7.

Informant	Position
SVP A	Senior Vice President
SVP B	Senior Vice President
EVP A	Executive Vice President, Business Transformation

Table 4.7: Informants from Engineering Company A

SVP A, SVP B, and EVP A were all interviewed separately. The focus of the interviews was on how Engineering Company handled the oil crisis. However, during the interviews, we also got data on another change case where the company underwent a series of internal restructuring processes.

Restructuring

Engineering Company A has over time gone through several restructuring processes, meant to increase efficiency. This has been done by either merging departments together, or by splitting departments into new departments. According to one informant, these processes have often happened in rapid succession, meaning that some departments have been subject to frequent restructuring over a significant period of time. In addition, Engineering Company A has also acquired other companies, which have been integrated into Engineering Company A in the same fashion by merging them into existing business units.

Business Transformation Project

When the oil crisis hit, Engineering Company A was forced to cut costs like many other suppliers to the offshore oil industry. To do this, they launched a business transformation project. The transformation process has two main goals: To cut costs and reduce bureaucracy. The transformation process will, therefore, also involve restructuring in order to improve efficiency. These changes, combined with the previous restructurings, have caused some departments to experience more or less constant structural change over a period of time.

4.2.8 Engineering Company B

Engineering Company B is a large engineering company who has mainly delivered highly specialised ships and equipment to the oil and gas industry. At Engineering Company B we interviewed five informants, shown in table 4.8.

Informant	Position
Director A	Co-Director
EVP A	Executive Vice President, HR
Engineer A	Design Engineer
Project Leader A	Project leader, Business Transformation Project
Union Representative A	Union Representative and Foreman

Table 4.8: Informants from Engineering Company B

EVP A was interviewed twice, once alone and once together with Project Leader A. EVP A is project owner of the project of Project Leader A. The rest of the informants were interviewed separately. Engineering Company B also has several business areas, in our interviews we were involved with top management, design and the production area. The focus during the interviews was how the company handled the oil crisis, in addition we focused on the business transformation project that we were informed of during the interviews. As a company heavily involved in the oil and gas industry, with a majority of the customers in this segment, they were, and still are, influenced by the fall in the oil price and the following drop of activity in the sector. The

company has decided to apply their competence on highly advanced (but expensive) solutions in other niche-markets, like many of the competitors in the sector. In addition, the company has a "Business Transformation Project" which is concerned with changing many aspect of the organisation in order to meet the demands of the future. The latter have utilised agile concepts in order to manage the process. We have focused on these two cases.

Reaction to the oil crisis

Director A explains that the company has a three-way strategy in order to make it through the oil-crisis. The first one is sales and winning the contracts that exist, the second one is costs by adapting the costs to the market. Lastly, they focus on innovation. When the activity in the sector dropped after the oil price drop, Engineering Company B had to cut costs due to the loss of revenue. According to Director A they were "totally exposed to the oil and gas sector". The cost cuts have mainly been consisted of reduction of staff. According to Director A this has been a complex and difficult process where they have tried to communicate and "make the best of a bad situation". This view is supported by Union Representative A, who describes the process as clean and with no more conflicts than one should expect in such situations, and overall is pleased with the information from the management. Director A stresses that in such a situation there is a paradox which has to be balanced: The company has to cut costs, while at the same time they have to invest in order to be ready for the future. He expects an increase in the market, digitalisation and other trends to be important in the future. The "Business Transformation Project" is a part of this effort to be ready for the future. Another aspect of this is for the company to diversify between different markets. Therefore, they have been working towards gaining entry into other markets.

Business Transformation Project

The Business Transformation Project is a project to develop the organisation to be ready for the future. According to EVP A this project changes people, technology and processes. It is concerned with increasing the collaboration and communication between business units, establishing and formalising work processes and many other aspects of the organisation. This project is managed using agile concepts. They have split the tasks into small implementations organ-

ised as sprints. In addition, they have an agile structure with a project leader, project owner, a subject-matter expert (SME), and other resources. They have had a big focus on the cooperation between the different sub-projects and according to EVP A this way of thinking about change processes has been a change in itself. According to EVP A this way of managing the process has given them flexibility which has made them able to adapt to changes during the project. EVP A also stresses the importance of the agile structure and how it solidifies ownership and clear responsibility in the different processes.

Chapter 5

Change Management Practises in the Case Companies

In this chapter we present and discuss specific findings from the cases presented in the previous chapter. The structure of the chapter is determined by our approach to coding our data as discussed in section 2.4. The findings are therefore organised by the five aspects of change discussed in section 3.1.1: context, drivers, content, process, and outcome. Context refers to environmental factors, and this is split into outer and inner contextual factors. Drivers is concerned with how and who drives the change, while content refers to what is actually being changed. Process is concerned with how the change is planned and carried out. Finally, outcome is concerned with the results of change. As described in section 2.4, the themes within each of the five aspect was identified in our coding process.

5.1 Context

In this section the identified factors concerning context is presented. We start by presenting the data relating to the external context: oil crisis, Norwegian model, and uncertainty. Afterwards the data relating to internal context are presented: view on change, technological development, flexibility, long-term view and owner structure.

5.1.1 Oil crisis

The oil crisis, which was discussed in section 4.1, is a major environmental factor which have created a need for change in many of the organisations in our sample and was identified as an important contextual factor that affected the different change processes.

Director A in Engineering Company B describes that the oil crisis hit them very fast, which limited the time the company had to respond to the changes. Director A also points out that in order to change, and focus on new markets, one has to invest in the change itself. This means that some companies will not be able to adapt to the market changes, simply because they cannot afford to invest in the change. Without the financial means to change, these companies had to just cut their costs, and try to survive.

Engineering Company B met the oil crisis by cutting costs where they can, but at the same time also focusing on competing for the few remaining projects in the market, and investing in innovation. As discussed in the previous section, Engineering Company B has a long term strategic view. Director A explains this as follows:

"Should you cut all costs equally, like using a cheese slicer, or should you do it more intelligently? There are two relevant perspectives; the long-term, and the short-term. Of course you have to cut, but at the same time you should also invest in development for the future".

(Director A, Engineering Company B)

They are considering not only how to deal with the crisis at hand, but also long term value creation. The investment in innovation will also help entering new markets. Engineering Company B is considering entering new markets, and focusing more on alternative markets. It might, however, been possible that these measures could have been taken sooner according to an informant. Union Representative A criticises that the company management did not see the crisis coming. He argues that the company has met similar crises, and that the company's analysts should have seen it coming. He further argues that it is naive to expect the market to continue to grow indefinitely.

SVP A from Engineering Company A believes that there were investors and analysts in the industry who predicted the fall, but that no one believed that it would hit as hard as it did. SVP A further argues that it could seem naive in retrospect to believe that the market would continue

to grow indefinitely, but that the company obviously wanted to take both the market shares and contracts that were available at the time. However, two informants state that Engineering Company A was very heavy into oil related products, and could have focused more on alternative markets earlier. The reason for this was that the oil related products had substantially higher margins than products in other sectors. After the crisis hit, the company have tried to turn to other markets according to SVP B.

The oil crisis has also made an impact for Shipyard Company A. Shipyard Company A was heavily focused on the offshore oil segment according to several informants, having mainly delivered one oil related product for some time. Due to the oil crisis they decided to include new products in their product portfolio. This change was going slower than expected, so Shipyard Company A recently initiated a change initiative to speed up the process. This was seen as necessary due to the heavy impact and immediacy of the oil crisis.

Shipowner Company is the only one of our case companies affected by the oil crisis that has not actively tried to enter alternative markets. According to COO, the company has taken contracts in other markets when they have presented themselves, but they have not actively tried to change in order to enter new markets. This is, according to COO, a strategic decision from the company's owners. The alternative markets are according to COO too different to benefit from the company's current resources, and Shipowner Company does not have the financial means to invest in entering new markets.

Shipowner Company did, just as Engineering Company B, employ analysts that did not predict the crisis. In addition, Shipowner Company continually listened to market signals from customers and clients, according to EVP A. One informant explains that the company did not predict the crisis, even though they have faced similar crises in the past, with the competitive nature of the shipowner market. The informant describes:

"The money was there, and then the case is that when our neighbour contracts a 120 meter long ship, we contract a 130 meter long one, which is more attractive" (Informant, Shipowner Company)

Because of this, he argues that the company could have ignored early warning signs. The informant states that it is possible that someone could have tried to warn about the crisis beforehand, but was not listened to.

This phenomenon is also described by Production Company. CEO A of Production Company states that an important actor in the shipowner market had told CEO A that no one wanted to see the crisis come, and that there was no room for other opinions in the industry. According to CEO A, the market reached saturation already in 2012, but the shipowners continued to contract new ships two more years after that. Production Company was also exposed to the oil industry, as they had two large customers connected to the oil industry. However, Production Company realised that they were relatively heavy into oil, and started targeting other industries proactively before the crisis hit. This relates to the company's view on change and strategy, as described in the previous section. According to Project Leader A, Production Company knew the risks of being to heavily invested in a single market, as they have experienced recession before. Because of the company's long term focus and risk averse strategy, they decided to focus more on other markets, in order to diversify their investments, and mitigate risk.

5.1.2 Norwegian model

The Norwegian model was a factor discussed by almost all informants, relating to the cooperation between employees and management, involvement, and relating factors. Engineer A in Shipyard Company mentions that he wishes to be more involved in the transformation project, in addition he has not received much information about it. In addition, he explains that there are members of the union in the suggestion committee, and that the union and management cooperate well when dealing with changes. He notes that the cooperation was not that good before. He says there is a flat structure in the business which has contributed to a very good cooperation between management, engineers and operators. He explains that the engineers have seen the value of involving the operators in the early stages of projects. Project Leader A in the same company states that:

"It is a prerequisite if you want improvement that you have structures which make everyone able to influence the process. Because the power of the business is in the employees."

(Project Leader A, Shipyard Company)

Committee Member A in Shipyard Company is one of the union representatives in the company, as well as the leader of the suggestion committee. The union has assumed responsibility

of the suggestion process because of varying degree of time to be responsible for the process in the management. He explains that the cooperation between the union and the management is good, and mentions that when dealing with suggestions they do not accept a rejection of a suggestion without a clear reason and it being evaluated by more people. The informant explains that in the suggestion committee they have representatives for the operators, engineers and management and that the committee delivers meeting minutes to the vice-president of the shipyard. Any special cases are also taken directly with his group according to the informant.

Consultant A in IT Consulting Company states that the company is very agile, and that the employees have a strong influence on the company and are able to make their own decisions. He mentions that many of the managers are not directly elected, but recruited internally in a democratic sense, almost. He confirms that this mindset is utilised in all aspects of the company. He thinks that the "Norwegian model", with a flat structure and the fact that people can cooperate across hierarchies is a competitive advantage for the company. He mentions that this model helps them avoid conflicts because of the resulting culture for openness, and sharing where the management spreads information and serve as facilitators. Representative A of the same company confirms that the company has a "culture for employee participation". Consultant A exemplifies a potential downside of such a democratic company, where he describes the fact that the influence of the minority is low in a democratic setting. The example is related to which "branch" of technologies the company should utilise. He mentions that the minority are able to present their case and make arguments, but as long as they are the minority it will not affect which decisions is made. Representative A mentions that even in such a flat structure you have to embed changes with the management, due to the fact that they control the finances.

A bit of a contrast to this "Norwegian model" is exemplified by one of the informants from Engineering Company A who says that when a decision is made by the top management the employees do not have much to say. The informant thinks that if you decide on a way of doing something you have to stick to it, if not it will create noise in the organisation. According to him you have to be faithful to the decisions which have been made, and follow them. EVP A of Engineering Company A mentions that the employees have been involved in the down-sizing according to the laws. Two union representatives from the company made a public statement, which we cannot cite directly without violating the confidentiality of the company. The repre-

representatives claim that the union representatives were not involved in a down-sizing before it was announced. They feel like they were not heard, and that the decision was made before they were involved. According to them, this is not in accordance with the Norwegian Cooperation Model.

EVP A mentions that it has been a focus on letting middle-management hire their own people, and that the middle-managers have the authority on that aspect. Another informant mentions in this regard that a down-sizing will be worse for the middle-managers who have to ultimately decide who stays and who goes, and inform them that "Sorry, you cannot stay, we cannot afford it". According to the informant, it is easier to be higher up in such a process because you do not have to have this direct contact. He states that this is just how it is with hierarchies in businesses. SVP A and SVP B in Engineering Company A state that the company is moving towards a more "Norwegian model" where they give the responsibility to the local management, and they mention that Norwegians like and wish to have control.

Engineer A in Engineering Company B on the other hand states that they get to contribute to a large degree in how things are done, and states that they can discuss cases directly with top-management and it is taken care of. He further states that involvement and communication is key in changes. According to EVP A they have a broad involvement in their discussions on how to proceed in changes. An example of this broad involvement according to EVP A is that they had a 2 day workshop with all stakeholders when implementing changes in sales and project management. Union Representative A emphasises that the down-sizing process in the company was a tidy and clean process. He explains that they have been involved in the processes, but there was not much else to do because of the oil-crisis. So they had an understanding for the necessity of the change. He explains that since he was the union representative he "knew basically everything" about the down-sizing process and that it was difficult because they could not share everything with the employees. In totality he thinks they had good discussions and that they have been heard, and he is content with how the process was done. He states that the union representatives and the top-management are on the same team and that they have to be on the same team if they are to keep Norwegian jobs. The union representative explains that:

"We trust the management. When the market changed we got the information early. We (the union representatives) got the information early that this is a recession and what they would do and would not do. We got the message that they would keep their equity and

not buy work in segments that we will not have in the future. And the top-management was honest, reasonable, and explained it well, and we had no problems understanding it."

(Union Representative A, Engineering Company B)

Project Leader A in Production Company thinks that they have had much to gain from involving the project engineers and operators more. He thinks that by giving them the opportunity to know the results of the different projects and look at what they learned and what the challenges were, they might see some possibilities and solutions. He mentions that the willingness to change is deeply embedded in the organisation. According to him the way they reach this willingness is to involve as many of their internal resources as possible at an early stage to embed ideas and establish ownership of the process. By involving people early he says they avoid the situation where the employees think it is impossible and have a reaction of "I have not even been involved, you have to deal with this on your own". He states that:

"So we try to get them (operators and engineers) in early to look at challenges, in order to be able to make simplifications or adjustments as early as possible to increase the chance of reaching the goals." (Project Leader A, Production Company)

CEO A in Production Company says that if you are to manage a company here (in Norway) you have to blend in, and he thinks that equality is an important value to have. This indicates a low power distance. He states that trust between management and employees is important, and that this trust goes both ways.

EVP B of Infrastructure Company B explains that the formal structure when making organisational changes is to involve the unions. They have monthly meetings with the union where such matters are discussed. At the meetings he explains that they try to reach an agreement. If they do not, they can still make changes within the legal framework. He states that they always seek to get an agreement because then everyone goes in the same direction. EVP B states that he often has many discussions before this formal meeting to try and find a solution which they can agree on. So in practice they involve the union before legal framework demands it, because he thinks that they are able to reach a solution faster through more dialogue. In addition, he states that they are able to create better solutions because he has the time to evaluate their ideas and feedback as well. He states:

"We spend quite a bit of time on it, but if we reach an agreement, the implementation of the change is easier." (EVP B, Infrastructure Company B)

He states that after they have split the organisation and created the Project Management Office (PMO), they will have workshops to figure out what they do with the rest of the organisation. He states that in these discussions they involve both managers and employees. In addition, they have the monthly meetings with the union representatives and he has attended the department meetings every 14th day in the affected departments to inform and gain feedback so they can get involved. He thinks the wish for involvement is strong, and re-iterates that it is a time-consuming process, but worth it if they reach an agreement.

5.1.3 Uncertainty

Most of our informants talk about the topic of uncertainty as an outside factor which the organisation has to deal with. One company that puts large emphasis on handling uncertainty, is IT Consulting Company. IT Consulting Company views change as a continuous process of adapting to an unpredictable market. This will be discussed in section 5.1.4. The reason for this, according to Manager A, is that they chose a strategy that could handle uncertainty. Manager A states that this mentality is inspired by [D'Souza and Renner \(2016\)](#). He points out that one important aspect from [D'Souza and Renner \(2016\)](#), is the difference between dealing with complicated and complex problems. The key difference is that complicated problems can be predicted, while complex problems are unpredictable. Manager A argues that complex problems are often treated as complicated problems, meaning that one tries to solve them in the same way. He says it is, however, not possible according to [D'Souza and Renner \(2016\)](#) to analyse a complex problem like one would do with a complicated problem, because it by nature is unpredictable. Therefore, Manager A stresses the importance of identifying complex problems and adapting to them, even though it can feel uncomfortable to deal with uncertainty. Manager A further argues that complex problems should be solved iteratively and experimentally, while complicated problems can be solved with planning and analysis. However, it will be counterproductive to use experimentation on problems that actually are stable and predictable, according to Manager A.

Both EVP A and Programme Manager A from Infrastructure Company A, also argue that one has to use agile methods in order to deal with uncertainty. EVP A illustrates this as follows:

"If you are to cross a lake with thick fog, instead of planning ahead for months, we just put the boat on the water and start sailing. We believe it will take a certain amount of time, and that it will require a certain amount of fuel. And then we see what we encounter along the way. Perhaps we encounter obstacles, and have to slow down. Perhaps we find an island we have to steer around. Thus we have to use more time and fuel than predicted. But we find our way during the trip. If one is to embark on such a trip across a foggy lake, then one has to be able to deal with unforeseen events". (EVP A, Infrastructure Company A)

Because of this, Infrastructure Company A uses an agile method for change management when dealing with uncertainty, which is discussed in-depth in section [5.4.3](#).

According to Engineer A from Engineering Company B, one of the challenges with entering new markets is the uncertainty it involves. He explains that one does not know where you are going, and that it is difficult to figure things out along the way. However, he argues that even if it is very challenging, it is also very educational because one learns more by doing new things.

Similarly, one informant from Infrastructure Company B expresses frustration over the uncertainty associated with the changes the company is going through. He states that he feels uninformed, that the process lacks structure, and that he does not know where the company is headed. EVP A argues that because of the uncertainty, the company does not yet know what the goals of the process are. This makes it very difficult to manage the change, and decide where to go. EVP A states that one way to deal with this is by planning for different scenarios. They can then start small when implementing the change, and adjust and scale up when they have more information and know which scenarios have occurred. Finally, EVP A argues that changing under uncertainty becomes easier with experience. According to him, it is much easier to navigate uncertainty when one knows what it will look like when the change process is finished.

Once the oil crisis hit, Shipowner Company did not react to the increasing uncertainty in the market. One informant states that once their contracts ran out and the ships were put in lay-up, they simply hoped it would blow over. Thus, they did not make changes to the organisation to adapt to the shifts in the market. The crisis did, however, not blow over, and more and more ships were put in lay-up.

5.1.4 View on change

Many informants talk about how the organisations view change and how it affects how change is handled in the organisations. Therefore, view on change is considered an inner contextual factor. According to Manager A from IT Consultant Company, there are two main ways to view change: either as a continuous process, where the company adapts to an unpredictable market, or as a finite process where the company works toward a certain market position. IT Consultant Company chose the former point of view, because they wanted a change strategy that could manage uncertainty. This was discussed in section 5.1.3. Thus, IT Consultant Company views change as a continuous process. Manager A states the following:

"I struggle with the concept of a change process, because there is nothing else. Everything we do is in motion". (Manager A, IT Consulting Company)

Infrastructure Company A, Infrastructure Company B, Engineering Company B, and Production Company, all share this view with IT Consultant Company to some extent, which we will discuss in this section.

Infrastructure Company A also regards change as a continuous process, because the markets they operate in are unpredictable.

"We practice change management all the time. It is very fulfilling. It is dark ahead, and I do not know what the company will look like in a year. But I am very excited to find out, and to be a part of that journey." (EVP A, Infrastructure Company A)

This illustrates how Infrastructure Company A, in the same way as IT Consulting Company, consider change to be a normal part of day-to-day life, and not an irregular event or initiative. EVP A from Infrastructure Company A argues that this drastically reduces resistance to change, as employees are getting used to the continuous change and it becomes part of everyday operations.

EVP B from Infrastructure Company B believes, that continuous change is necessary for employees to get used to change, and thus reduce the potential change resistance.

"With a culture of change resistance, one does not change anything until one finds something that has to be changed. And then, the change becomes very large. One should rather change a bit at a time, and then people will learn that change is natural. People are afraid

of change, but with an agile mindset, it becomes completely natural." (EVP B, Infrastructure Company B)

This mentality is also expressed by Manager A: He argues that one should continuously adapt and adjust instead of changing by taking big leaps, because such leaps would cause the production to be reduced. This is avoided by adapting to the market over time. SVP A also stresses the importance of becoming more used to change, as many employees in Infrastructure Company B are reluctant to change, and prefer stability. He states that many employees and managers postpone changes for various reasons. EVP A argues that they try to change proactively, and stay ahead of the market and market changes, but that many in the organisation push the change aside instead of being offensive.

Director A from Engineering Company B also believes that people have to practice change in order to accept it. He argues that it is terrifying to do something you do not know how to do, and feeling loss of control over the situation. He further argues that this can lead to people who just hope the change will blow over, and people who gravitate towards the old and familiar ways to work. Because of this, Director A states that implementing lasting change is incredibly difficult. Today, Engineering Company B is managing change using an agile method. EVP A, in the same company, argues that a continuous and agile change process ensures flexibility, and clear responsibilities. This agile change management method will be discussed in-depth in the following sections.

Just as all the previously discussed case companies, Production Company also views change as a continuous process where the company has to adapt to an ever-changing market. According to several informants, the main strategy is decided in yearly strategy meetings, where all employees are invited to discuss the future of the company. Project Engineer A describes the strategy meetings as follows:

"Everyone is heard, and everyone can contribute to shaping the company strategy. In addition, we get a lot of information about our current strategy. Everything is about the world around us, which constantly changes. It is always an issue how the world is, and how we think it will be over the next years. You can think of it as Darwin's 'Survival of the Fittest', where those who are most adaptable, and those who quickest adjust to the world around when it changes, survives. They adapt in both good times and in bad times." (Project Engi-

neer A, Production Company)

Project Leader A explains the company's focus on involvement in strategy and change processes with that it reduces the change resistance. He argues that by involving everyone at an early stage, no-one feels left out, everyone can contribute, and gain the feeling of ownership to the process. In addition, people in different positions have different views and perspectives on the change processes, so that when everyone is involved one gains a more complete overview of the process. Thus, the project will be more likely to succeed according to Project Leader A.

As we have seen, IT Consultant Company, Infrastructure Company A, Infrastructure Company B, Engineering Company B, and Production Company, all view change as a continuous process where the company adapts to changes in the market. As we will discuss next, this means that for many of them technological development is central to their change strategy, because the market adaptation is closely related to developing new technologies to satisfy changing customer demands. Several informants from Production Company state that developing production technology is central to change, because it is a prerequisite for producing new products for new customers. In many ways, their ability to enter new markets and find new customers is determined by their technology, and what they are able to develop. Their focus on technological development as a key part of their change process is discussed in-depth in section 5.1.5. EVP A from Infrastructure Company B states that one of the areas they are currently focusing on, is to make sure that strategy and technology are closer aligned. He states that this involves the following:

"We focus on both what the business needs which will impact the technology, and on what happens with the technology which will affect the business. We have to sew those two together." (EVP B, Infrastructure Company B)

In this way, business change and technological development will be closely related in the strategy of Infrastructure Company B according to the informants.

EVP A from Infrastructure Company A also argues that business and technology are closely related when it comes to change. He argues that many change processes involves technological changes, and that technological standardisation therefore enables change. This will be discussed in-depth in section 5.3.6. Similarly, both EVP A and Project Leader A from Engineering

Company B argue that technology and business have to be regarded as more closely related than they are today.

While the five companies we have discussed so far in this section regard change as a continuous process of adapting to an ever-changing market, Shipowner Company has a change strategy more focused on taking and holding a certain market position. Informants from the company state that this strategy is set by their board of directors, and that the company cannot change in order to enter new markets. One informant mentions that:

"If you are to enter new market segments, you need an entirely different organisation. You cannot be good at everything." (Informant, Shipowner Company)

In other words, the informants argue that the company's specialisation on their chosen market segment restricts the company from changing and entering new markets.

Engineering Company A does not consider change to be a continuous process either. Instead, EVP A from Engineering Company presents a sequential, plan-driven model for managing change. This model will be discussed further in section [5.4.1](#).

5.1.5 Technological development

An important factor when considering how Norwegian companies can change and adapt, is the progress in technological development. COO of Shipowner Company states that most Norwegian operators in the market have higher cost structures than international competitors, and in order to be able to compete, they have to deliver more advanced ships. SVP B of Engineering Company A also states that they operate in a highly specialised niche market, and that it is difficult to find other, similar niche markets where they can find competitive advantages with their advanced technology. This makes finding new markets during the oil crisis as described in the previous section even more difficult.

However, the focus on advanced technology does not only limit the markets the companies can enter, it can also define aspects of their change management strategy. As previously discussed, Production Company has a continuous view of strategy focused on innovation. According to CEO A of Production Company, this is necessary to stay ahead of the market. CEO A explains that it is a continuous process to find new markets and explore new technologies. By

continuously changing and adapting to new technologies, Production Company can stay ahead of the market, and profit from products that no one else has the technology or competence to produce. However, as a given market starts to mature and the technologies required becomes common knowledge, the prices drop, according to CEO A. Project Engineer A argues that "new technology flows from high cost countries like Norway, to low cost countries". According to Project Engineer A, this forces the company to change, and all employees at Production Company are therefore aware that they have to change continuously in order to survive.

5.1.6 Flexibility

Flexibility have been identified as an important factor to deal with uncertainty, therefore, this is considered part of the inner context of an organisation. IT Consultant company is very flexible, according to Consultant A, in that challenges that appear are solved immediately. He argues that this is made easier by the relatively small size of the company, as everyone knows one another, and thus also knows who to involve for different decisions and solutions. He believes this will be more difficult in a larger company, as such processes would have to be more formalised in order to find and involve the right people.

However, even though Engineering Company B is a significantly larger company than IT Consultant Company, it is still able to make quick decisions and remain flexible according to EVP A in Engineering Company B. He argues that this is enabled by an internal group in the company which works in the interface between business and technology. By following the business, and working with the technological systems, the group is able to implement quick changes to the technology in response to changes on the business side. This is closely related to the company's focus on bringing strategy and technology closer together, discussed in section 5.1.4.

Engineering Company A on the other hand, appears to be less flexible. The company has, as previously discussed, many strict procedures which makes flexibility and quick responses difficult. One informant characterises these procedures as "rigid regimes", which cause a significant amount of bureaucracy. Many of these procedures are related to health and safety, but one informant argues that this is taken way too far, and that they only contribute to restricting the work.

Shipowner Company also appears to lack flexibility. According to one informant, they are

so specialised in services to the offshore oil sector that their ships are unsuited for taking other contracts without large investments. He states that:

"We see many smart ideas and opportunities, but it is so far outside of what we usually do that it will be disruptive for other operations". (Informant, Shipowner Company)

This has made reacting to the oil crisis more difficult for them, as discussed in section 5.1.1. He argues that in retrospect, they could have invested more in ships capable of serving different markets and thus have been flexible enough to compete for contracts in other markets when the oil crisis hit. The reason why this was not done was simply that these ships cost substantially more.

Because Infrastructure Company A maintains critical infrastructure, they are limited in terms of flexibility, which will be discussed in-depth in section 5.3.1. Both informants from the company state that because of the rigid nature of the processes, and because these have to be planned in detail in advance, it is often difficult to find people on short notice. This makes it harder to respond quickly, and thus it reduces the flexibility of the company. Infrastructure Company A is trying to solve this by implementing more agile processes, which will be discussed in section 5.3.3. This will allow shorter sub-processes, which will enable quicker implementation of changes.

Production Company is also focusing on flexibility, similarly to IT Consultant Company. Production Company is also a relatively small company, which makes flexibility easier to achieve according to the informants. Project Leader A states that it is a valuable strength for the company to be small and flexible, and because of that, they do not wish to grow much larger. One of the things Production Company do in order to allow for flexibility according to Project Leader A, is to design their project plans to be "broad" and unspecific so that they can change things along the way. In this way they can make the plan more and more specific as they go, and account for unforeseen events. This method is discussed further in section 5.4.1.

5.1.7 Long term view

One factor that affects a company's priorities during a change process, is how long the company's strategic view is. SVP B from Engineering Company A tells us that Engineering Company

A has a relatively short term view, which is partially caused by the oil crisis. The informant explains that everyone is measured strictly on Key Performance Indicators (KPIs) like profit and cost reductions, and that managers do not have opportunities to pursue long term goals. However, the company has also had several managers at the top level, who want to set their footprint on the company, according to one informant. The informant claims that this also contributes to the short-term focus of Engineering Company A.

One informant from Shipowner Company similarly states that cost reductions are Shipowner Company's highest priority, and that they cannot consider positioning themselves for when the oil crisis will be over. They simply have to focus on surviving the crisis.

Engineering Company B on the other hand, has a more balanced view on strategic horizons. According to Director A, Engineering Company B is trying to balance change focused on short term and long term goals by cutting costs where they can, but at the same time invest in innovation and future value creation. This will allow Engineering Company B to take a better position in the market once the crisis is over. This long term focus seems to be established in the culture of Engineering Company B. Three different informants talked about the strategic goals of the company, as well as the goals of smaller change projects, and all of the goals were long term goals related to establishing better market positions or becoming more efficient in the future.

Another company with long term strategic goals is Production Company. According to CEO A, the company has very long horizons. They are not after quick earnings, but instead operate to be sustainable with calculated risks and focus on long term results. Project Leader A claims that there are several reasons for this, one of these reasons is that the company has experienced recession and financial crises previously, and has learnt from that. This has, according to Project Leader A, helped create a risk averse culture with focus on contingency planning and long term goals. However, this means that Production Company does not maximise profit in each project, according to Project Leader A.

5.1.8 Owner structure

According to several of our informants, how long-term the companies' strategic views presented in the previous section were depended on the companies' owner structures. One informant from Engineering company A argues that the strict focus on KPIs and scorecards in Engineering

Company A is a result of the company being listed on the stock market, because quarterly reports and short term results impact the company's stock price. Because the company depends on the stock price, the company's goals also tend to be focused on short term financial results.

Similarly, several informants argue that the long term focus of Engineering Company B is possible due to the fact that they are privately owned, by owners who are invested in the company and who cares for the company's future. Union Representative A states that the employees trust the owners, because the owners are passionate about the company, and sincerely want the company to exist in the future as well. Director A, who also owns shares in the company, confirms that the priority of the owners is that the company should still exist in 100 years. Director A argues that it is easier to have a long term view in a privately owned company, because they do not have the same focus on quarterly results that many stock listed companies do. Director A further argues that this makes it easier for privately owned companies to innovate, as innovation rarely will impact the next quarterly results, and cannot be defended in the short term.

Production Company is also privately owned, and as discussed in the previous section, also has long term goals like Engineering Company B. According to Director A, this is also affected by the fact that the owners care about the company. CEO A at Production Company states that when the company turned 50 years, the owners stated that their goal was to make sure that the company should become at least 100 years old. Project Leader A argues that the risk averse strategy might not be the most profitable, but that all strategic choices should be safe for all employees. One informant also argues that another reason for the risk averse strategy, is that private ownership also implies that the owners have their savings invested in the company, and are unwilling to take high risks with them.

As previously discussed, Shipowner Company followed a high-risk strategy involving investing heavily in offshore oil, the market with the highest margins, without diversifying to mitigate risk. They did this even though the majority owner has experienced similar recessions previously, according to one informant at Shipowner Company. One possible explanation for this is the competitive nature in the shipowner market, as previously discussed.

5.2 Drivers

All the companies we interviewed touched on the aspect of who drives the change, if it was bottom-up, top-down or based on experience as a form of middle-out. The findings regarding these aspects will be presented here, as well as findings relating to clear responsibility and local autonomy.

5.2.1 Top-down

According to all of the informants in Shipyard Company change was driven more top-down before, where the management pushed changes and the employees had to deal with it without much influence. Today it is not like that anymore. However, Engineer A emphasises that sometimes they are so busy with projects that they need the management to look at the totality, and initiate changes based on what they observe, which they are not able to see themselves. According to Project Leader A, the 100 day programme was launched to speed up the transformation project. The transformation project had been driven top-down, but the 100 day programme involved more people in order to speed up the process.

In order to cut costs, Shipowner Company reduced staffing all over, according to the informants. This process was driven top-down, where top-management and some of the department directors sat down and decided, and later informed the employees. The reasoning behind this way of driving the change was that it was easier, because by including more people you would get too many opinions and a difficult process. But according to Technical Manager A, the company is moving towards a model where it is not only the department managers who make the decisions.

In Infrastructure company B there are differing opinions on how change should be driven. According to SVP A, the company is driven top-down today, but SVP A wants to involve employees more in the future. EVP A shares the perception that the company is top-down in regards to change. Both mention the people and the culture with a low willingness to change as the main reason for this way of doing change management. This is also supported by Manager B, who believes that in the company's current situation, and in the transformation process, the change has to be driven top-down. According to Manager A, the company is less top-down than

before, but the informant mentions an unsuccessful process from the past which was run very top-down. The informants think that the top management have learnt since then, and think that the top-down way of doing it was one of the main reasons for the failure.

According to SVP A and SVP B in Engineering Company A the processes and the way of working with mostly everything is decided by top management. In addition, according to SVP A and SVP B, change management is driven by top-management with a demand for efficiency. The informants mention a specific merger between two branches of the organisation being top-down, with little room for people outside of top-management to influence the process. According to one of the informants, the company has a top-down approach, driven by short-term motives where middle managers with decades of experience from change processes feel they have little possibility to influence the change processes. The same informant emphasises the importance of totality, and that you maybe have to be at the top before you are able to view the totality of it. EVP A of the same company states that:

"The business transformation programme has been driven by top-management, myself and 3-4 others, so it has been embedded all the way to the top". (EVP A, Engineering Company A)

The informant also states that big transformation programmes must have a top-down approach, and that support from the top-management is a success-criteria for such programmes.

5.2.2 Middle-out

According to Committee Member A in Shipyard Company, their suggestion system is available to all employees: hired workers, functionaries, operators and engineers. The system is formalised to make sure all suggestions are taken care of. This serves as a way for the employees to utilise their experience. Engineer A in Shipyard Company mentions that the one making a suggestion gets to keep working with the suggestion and is involved in the process.

Director A of Engineering Company B emphasises the importance of experience for the employees in industries which tend to have good and bad periods, such as the oil-related industry. He mentions that many of their new employees have never experienced bad times, and that in the future it will be key to be able to utilise the experience they acquire in order to be better

prepared in future. Engineer A explains that they have a dedicated team who use their knowledge and experience to work with capturing new markets. If this team makes a decision, the engineers are responsible for implementing it. The informant states that sometimes the direction changes due to uncertainty. EVP A in Engineering Company B stresses the importance of multidisciplinary employees and teams who with their experience and knowledge are able to see the totality of the projects. EVP A in Engineering Company B notes that one very important factor for the success of their ongoing business transformation project is that the sub-project owners is able to have different perspectives. Such as systems, process, organisation and management. In addition, the informant emphasises that several resources in the project are able to be an interface between the line-organisation and the business-side, this interdisciplinarity is considered very important for the success of the business transformation project.

SVP B of Engineering Company A emphasises that in their effort to capture new markets and customers the knowledge and experience of their great engineers have been very important and have influenced the strategy. This will be further discussed in 5.4.2. SVP states that:

"You are dependent on good engineers who are able to acquire the knowledge needed to win projects in new segments. And we see that we have many who have been in the business for a long time and have a broad knowledge. And I feel that we have many innovative, skilled engineers who are able to develop great concepts and solutions together with our customers." (SVP B, Engineering Company A)

According to Technical Manager A in Shipowner Company, they are now starting up teams they call "management of change" where they decide on processes and implement changes as a team. He describes it as follows:

"Decisions are often made by the department managers who sit together and create plans. But now I think the whole department is involved, and we can discuss cases across departments. ... I think everyone appreciates this, and thinks it is important. Earlier decisions was made inside an office, but now we have a group who sit and run things together." (Technical Manager A, Shipowner Company)

According to the informant, these teams have made them better at inter-disciplinarity.

Project Leader A in Production Company talks about how the competence from a failed project has been very useful for them later on. Even though the project itself was a failure, the competences the company gained in the project was important later on. He mentions that it is important for the company to develop the competences of their employees, and they value the experience their employees have gained throughout their work life and make an effort to utilise this experience in the company. A way of achieving this is that according to Project Engineer A, most of the employees participate in a "Strategy Workshop" every year for where they discuss current and future strategies.

Manager A in Infrastructure Company B describes that a change process in his department, in order to reduce costs, utilised an inter-disciplinary team, where they had participants from all levels of the department. According to Manager A, one of the main success criteria for the project was the experience based knowledge of the employees in the team. He mentions they often see possibilities to become more effective through different measures. He further states that he hopes that it stays that way with a continuous increase of efficiency instead of demands from the top because that often "makes it convulsive".

5.2.3 Bottom-up

In Engineering Company B Union Representative A mentions that he has criticised top-management for not making changes to the organisation after they closed down one of their business areas. He has suggested that they make structural changes to the remaining organisation in order to fit their new value-chain. The informant states that at first the suggestion was met with resistance from the top-management, but the informant believes and sees that they are working with it now. Union Representative A mentions that they (operators and union representatives) notice this need for additional changes better and faster than the top-management. He further emphasises the need for all layers of the organisation to adapt, and he believes cultural changes are needed. In order to get this right the informant questions the implementation, and believes that it will take longer time than estimated, but that they will get it right eventually.

As previously discussed, Shipyard Company has a suggestion system, which takes care of all the change suggestions from the employees. In this system everyone can deliver suggestions.

In IT Consulting Company, Consultant A and Representative A mention that employees can

make suggestions for changes. An example given was changes to the office cafeteria in order to accommodate employees with special needs. This change was initiated by Consultant A and Representative A after they felt a change was needed. According to all informants in the company the process was democratic, where everyone had the opportunity to voice their opinions and a poll was held for the decision to implement these changes. Manager A describes it as a set of negotiations with a focus on involvement where everyone should get their needs taken care of. Additionally, a suggestion box was established to ensure continuous follow-up of the changes.

5.2.4 Clear responsibility

Project Leader A in Shipyard company mentions that a part of their 100 day programme is to have more clarity on what people should deliver, because it has been unclear. A part of this transformation programme is to increase ownership through this increased clarity according to the informant. According to the informant an important aspect of the 100 day programme is clear responsibility or an increase of accountability. He explains that the responsibility for implementations has been put on individuals to make the change process more concrete.

EVP A of Engineering Company A states that an important aspect of their Business Transformation Programme is to create compliance between responsibility and authority and to fix the unclear responsibilities in the organisation. A way of achieving, this according to him, is to give the business units responsibility for profit and loss, as well as authority to do something about it.

"We have to move more resources to the business units, less in the central functions, and give more responsibility and authority to the business units". (EVP A, Engineering Company A)

According to Engineer A in Engineering Company B, it is important to make it clear in the organisations that you are working with change, and make it clear for the organisation what the change means. According to EVP A in the same company, it was unclear before what the different departments were responsible for. EVP A explains how they dealt with this in the Business Transformation:

"The project covered all aspects of the business in a way. So to break it into small sub-projects, but at the same time maintaining coordination between the projects, has been important." (EVP A, Engineering Company B)

The informant confirms that by doing this they have clear responsibility through the divide of tasks. At the same the informant states that the project has

"A flat structure, it is very agile and very flexible." (EVP A, Engineering Company B)

To achieve this, the informant says they started by defining roles and giving the project leader for each sub-project the overall responsibility. The sub-projects have a project owner at the top who owns the project in each business area. In addition, they have a solution manager who is responsible for the technical aspects. The informant states that:

"Having a project owner was maybe the most important thing we did, the fact that we focused so heavily on this. We have mapped processes for years, but the ownership was missing. ... The fact that you have 1 person who owns the project/process across business units is critical. Because when you are in the business units, with different strategies or different ways of thinking, different products, then you do not have the same way of working either. Working so directly with roles was unfamiliar in the beginning, but it has been incredibly effective in this project" (EVP A, Engineering Company B)

According to the informant, they adapt a similar approach with project owners and project leaders (which are different people) in delivery projects as well as in their change projects.

SVP A of Infrastructure Company B mentions that he wants to make some changes in order to get a more clear responsibility in his division. He further mentions that he could have been better at challenging and giving responsibilities, and that the two main reasons for this not happening is the lack of time to think about such aspects, and the lack of formal management knowledge, not a lack of experience. One idea the informant has is giving the level four managers in the organisation responsibility for the area's budgets. He mentions that he has delegated some tasks (hour registration, vacation approval, absence etc.), but according to the informant the persons have not been made responsible for it. He thinks that maybe the managers do not understand when he delegates, in the sense that the job is done, but they do not assume responsibility for it. The informant thinks an increased business understanding might help to get this feeling of responsibility.

On a related note, Manager A of Infrastructure Company B thinks that there is a lack of clear responsibility in the organisation after the structural changes 2-3 years ago. He mentions that the organisation maybe has not settled yet. A similar notion is shared by Manager B who wants a strong manager for the business unit which his area is a part of with a responsibility for change management who represents the unit in top-management. Manager B mentions that the first change he would implement is to create clear responsibilities for who does what.

"Create clear responsibility, that is obvious. People say they have little time. Through creating clear responsibility, create clear boundaries, and get work processes going which are reasonable, we will save much time. We might even have personnel to spare". (Manager B, Infrastructure Company B)

According to both Manager A and Manager B the change where they have roles such as Key Account Manager is suited for their situation, which creates clear responsibilities and interfaces for both the customers and the technical experts.

EVP B explains that the first part of the changes that he is responsible for is creating a dedicated Project Management Office, which will not have a line-organisation, but have the sole purpose of project implementation across the business. He states that this will create clearer responsibility. According to EVP B, this is done because one of the main issues with the previous organisation is bad focus, they have too high spread for what they are responsible for. The unit has been too spread and fragmented according to him. When discussing the reason for the success of another unit (which EVP B was responsible for before) he states that in that unit they had a clear focus and responsibility and that it was an important factor when setting up that unit. EVP B answers as follows when asked how the new structure will increase cooperation across business units:

"Fewer units, similar tasks and competences together in bigger environments. In this way it is clearer where the responsibility lies. And having a manager for each unit which has a clearer focus and a clear responsibility. "This is your responsibility". Not have some of the responsibility here and some of the responsibility there. By making the respective units and respective managers more responsible and by making the borders more clear regarding who is responsible. This is very unclear here today". (EVP B, Infrastructure Company B)

EVP B further mentions that they are looking at their processes in the business units with the goal that everyone shall know why they are doing something and why they are not doing something based on formal descriptions of work processes. He states that when this new model for the organisation and the processes are defined, it will be the responsibility of the process-owners to increase efficiency for their processes. He states that every process in the company has an owner, and that the manager and owner of the processes are the same people. When dealing with projects they utilise a project owner and project leader structure, similar to Engineering Company B.

5.2.5 Local autonomy

Engineer A in Shipyard Company mention that they have received an instruction from the management to make changes to a reporting process, but the management has not instructed on the content of the change, just that a change is needed. Engineer A is then responsible for implementing it in the department. The processes in the project(s) are measured by the management and he thinks that they have an overview over the status and that he talks with his manager multiple times per day. The informant confirms that the implementation of projects is autonomous after they have received an instruction to do something.

Representative A in IT Consulting Company states that if the employees engage in something or have good ideas they have a real possibility to impact. According to the informant, employees have control over their own work when it comes to the development and customer related work. This mentality is transferred to change according to the informant, smaller things they can just implement themselves, but bigger things have to be approved by management.

SVP A of Engineering Company A emphasises the need for local ownership, and to get the ownership back through receiving authority and responsibility in order to be able to decide what they should do in the future.

"If it goes to hell it is my fault, okay, then we have to take the consequences from that. Now there has been a lack of responsibility and all decisions have been taken at the top. ... Now we are starting to give responsibility and authority to the employees and local management, then you have to prove that you deliver. ... To give responsibility down again, to give responsibility to the employees and local management, it is they who must make the decisions, in

cooperation with top management. That is definitely the way to go, that is how Norwegians are made, we wish to have control and we are maybe a bit simple in that aspect." (SVP A, Engineering Company A)

The informant thinks that if they had more local ownership and more responsibility that they could have responded faster to the changes in the market. He states that you have to have people who are responsible for the quality and the cost of the product through the full value-chain, and to make sure that someone is able to see the totality. SVP B in Engineering Company A thinks that self-sufficiency is important for the company and the employees, but sees challenges with autonomy when asked, as follows:

"Yes, of course everyone wants autonomy and that is because you are quite self-conscious and think that you can do this better than everyone else. But there is an element that you have to be at a certain level, and maybe all the way at the top, before you see the full picture, so there are many considerations to take into account. And it is clear that if you are at a certain level in the organisation, you see a relative small picture, which may make some things seem quite simple. Right, because you do not have to take all these other things into consideration." (SVP B, Engineering Company A)

EVP A of Engineering Company A emphasises the risk they face when they are giving the business units more autonomy as a part of their transformation programme is that they create silos or small empires. In order to mitigate this you need a governance model across the units, according to the informant. A part of this is the business reviews, which will be discussed in section [5.4.6](#), and by standardising processes across units.

EVP A and Project Leader A in Engineering Company B talks about the business transformation project and the fact that they "started with a direction, but you are allowed to change it". They go on to explain that the project is embedded in the organisation in the way that it is a focus on the project, but the top management does not interfere with the project, just checking in on the project. This is further discussed in section [5.4.9](#).

CEO A of Production company discusses how they change the way they work and mention that:

"Now I would have happily showed you some nice routines on how we do this, but it is

exactly the fact that we do not have a strict set of routines or rigid methods which is one of the drivers for our innovation." (CEO A, Production Company)

SVP A of Infrastructure Company B emphasises that the business has a challenge because much of the changes happen inside of their projects and not in a group which are able to look at the totality. A similar notion is shared by EVP B who mentions that their project and development section has had a focus on their own work and not necessarily worked so well with the rest of the organisation. According to Manager A, the implementation of changes in his area has been his responsibility. The management wants to increase efficiency, but not much more detailed than that, in order to increase efficiency the area managers, such as Manager A, utilises the knowledge he has himself and his team to make changes. In other words, the goals are set by top-management, while the implementation is done locally by the department. According to Manager B, they could have reacted and changed faster if they had more local autonomy.

5.3 Content

Content is concerned with what is being changed. The identified themes presented in this section is: structure, people, processes, culture, customer and product and technology.

5.3.1 Structure

Infrastructure Company A has changed its structure in order to become more agile. Because Infrastructure Company A maintains critical infrastructure, there are parts of the company that cannot be agile, and that cannot experiment. In order to allow other parts of the organisation to work more agile, they have structurally separated the Agile and innovative parts from the plan-driven parts concerned with operations and maintenance. According to EVP A, this makes sure that the operative parts remain streamlined, while departments concerned with business transformation and finding new directions are able to work more agile. EVP A stresses that the entire organisation has been trained in the two different ways, so that the plan-driven departments understand the agile departments, and vice versa. According to EVP A, this is very important in order for the two types of departments to be able to cooperate and work together.

Infrastructure Company B has also undergone structural changes. Infrastructure Company B used to be part of a larger parent company, but recently became a separate company. This caused large changes to the company management. One informant explains that after the split, there has been a lack of clear responsibilities at the management level, and that the change has yet to settle. In addition, several managers state that they lack information and direction. One informant wishes for a more powerful leader, who is able to make hard decisions and provide a clear direction. However, EVP B states that one of the goals is to establish greater focus, and better defined roles and responsibilities. One of the changes that is meant to help with this, is to separate a project department from the rest of the company. This means that one department will only work on projects, giving them a clear role, and at the same time establish that other departments are not responsible for the projects.

Shipowner Company has been forced to cut costs because of the oil crisis, and as a result of that, they have both sold and laid-up ships, and reorganised and reduced internal departments. This has given some of the remaining employees more work, according to one informant.

Engineering Company A has gone through different structural changes. Over time the company has made several acquisitions. According to one informant, some of the integration processes following the acquisitions were unsuccessful. The informant states that the acquired departments often were put under new management from the parent company, or otherwise directly controlled. The informant claims that this meant that Engineering Company A could not fully utilise the full potential of the acquired companies. These unsuccessful merges resulted in several internal reorganisations, where departments were either split up, or merged into other departments. According to the informants, this often meant that departments which were considered unsuccessful would be put under control and management of another department, losing their own management. In addition to this, the oil crisis has also recently caused more restructurings, as Engineering Company A has been forced to cut costs and downsize.

5.3.2 People

The structural changes to Engineering Company A discussed in the previous section have also had impact on the company's employees. With rapid restructuring and downsizing, employees have been moved around the organisation frequently. One informant states that in the last six

years, the informant has had six different bosses. The downsizing has also taken its toll on the remaining employees. One informant says that the employees feel unprioritised and less valued as a result of the changes. The informant argues that this will cause key employees to leave the company, and thus cause the company to lose valuable competences. One informant also says that the downsizing processes have been very hard on the middle managers. The informant argues that the middle managers have had very little say in the processes, but have just been told how many they need to fire. It is then up to the middle managers to choose which employees to fire. The informant says that many middle managers feel that this weighs heavily on their shoulders, and that many of them feel lonely and alone as a result.

Engineering Company B has also been forced to downsize as a result of the oil crisis. However, employees seem to be somewhat more positive to the way the change has been handled at Engineering Company B. According to Union Representative A, the management was honest about the changes, and communicated clearly to the employees what was going on during the entire process. This created an understanding for the change amongst the employees, which made the process easier according to Union Representative A.

Employees at Production Company seem to have taken a similar approach to their own downsizing during the oil crisis. Project Engineer A from Production Company says that it is "uncomfortable when people are laid off, but at the same time, it is very important to cut costs in a receding market". He states that they have a clear understanding for the need for downsizing.

IT Consulting Company has a simple rule concerning changes involving people. According to Manager A of IT Consulting company, they do not move people before they understand why. Manager A argues that it is impossible to make people change, unless they understand the reasoning behind it.

Manager A from Infrastructure Company B has a similar view, and argues that there would be more resistance to change if employees were not well-informed. As long as the employees understand the importance of the given change, they know that is better to help with the change process, as the alternative will be worse. In addition, Manager A claims that involving employees in the change process makes it easier to embed the change into the organisation, and make it stick. EVP A from Infrastructure Company B argues that another aspect that makes change

easier, is to make employees more used to change. If change happens regularly and becomes part of the day-to-day work, people will get used to it, and it will not seem so dramatic.

5.3.3 Processes

According to Project Leader A of Shipyard Company:

"It is not possible to change processes unless they are standardised and formalised, because one cannot change processes that one does not know how works." (Project Leader A, Shipyard Company)

SVP A and EVP A from Infrastructure Company B also share this opinion. SVP A states that the Infrastructure Company B is currently formalising many of its processes in order to make them more transparent, so that it will be easier to identify cost drivers and make changes accordingly. EVP A argues that this process will help the company better understand what they deliver, how they deliver it, what they are good at, and what can be improved. Manager A in Infrastructure Company B also argues that processes should be designed as simple as possible, to reduce unnecessary complexity.

As previously discussed, Engineering Company A has had problems integrating acquired companies. SVP A argues that strict processes in Engineering Company A has made the integrations more difficult. SVP A explains that the acquired companies were expected to start following the relatively strict processes of Engineering Company A overnight. However, many of the companies were used to more informal processes. The cultural differences therefore made adopting the new processes more difficult according to SVP A, which in turn made the integration more difficult.

EVP A of Engineering Company A claims that criteria for a successful change project, is that one changes the way one works. Director A from Engineering Company B argues that in order to change the way people work, one has to make the people understand why they have to change, and why it is important for the company's future. Director A states that employees are often uncomfortable with new processes, and tend to gravitate towards the old processes instead of adopting the new. This can be mitigated with clear communication according to Director A, but Director A also stresses that this communication is very difficult in practice. This will be further

discussed in section [5.4.7](#).

Engineering Company B has also changed several processes in the business transformation project in order to become more agile. EVP A states that they have adopted agile practises in their processes, because:

"We do not want to construct a solution that is implemented after two years" (EVP A, Engineering Company B)

The new processes in the transformation project includes implementing changes in iterations, daily stand-up meetings, management group meetings every two weeks, and using clear and formal roles and responsibilities to make the process more efficient. EVP A states that the transformation project adopted these agile processes because they worked with an IT company which used an agile methodology, and they found that mirroring their processes was effective.

As previously discussed, Infrastructure Company A has structurally separated agile departments from traditional, plan-driven departments. However, according to Programme Manager A, they are also currently working on implementing more agile processes in the plan-driven departments. A part of this is implementing iterations in change processes. This is important according to EVP A, as it improves efficiency, and helps deal with uncertainty and changes during the change process. However, implementing the iterations proved to be difficult, as Infrastructure Company A plans projects and allocates resources in yearly plans. With a series of iterations of 90 days each, with goals and implementations that changed between iterations, it proved hard to allocate resources to agile projects. This was solved in the transformation project in Infrastructure Company A by having all the iterations work towards a larger, yearly goal. This made the iterations in the transformation project more predictable, according to SVP A. It allowed for allocating resources in the yearly plans to reach the transformation project's yearly goals, which made it easier to execute the changes as the resources was allocated beforehand. The yearly goals are further discussed in section [5.4.10](#).

Infrastructure Company A is also trying to develop better processes for innovation. According to SVP A, this is done experimentally in a lab where they test different ways to work with innovation. After each experiment a report is made that details what worked, and what did not work. In this way, Infrastructure Company can change their innovation efforts to become more efficient, and deliver better results.

5.3.4 Culture

As previously discussed, Engineering Company A failed to integrate newly acquired companies into the parent company efficiently. One informant from the company claims that one of the reasons for this, was that the cultures of the acquired companies were not considered in the integration process. Informants claim Engineering Company A implemented strict procedures and hierarchies in companies which were used to flatter structures, and had more agile cultures. Because of the large cultural difference between the acquired companies and Engineering Company A, some of the value of the acquired companies was lost when Engineering Company A implemented its own procedures in the acquired companies during the integration process according to the informant.

Engineering Company B has similarly found the need to adopt more strict and formal procedures in order to cope with more and more complex work. According to Union Representative A, this will involve a cultural change for the employees. He is confident that they will be able to achieve the change, but argues that it may take longer time than expected due to the cultural aspects of the change process.

Engineering Company B has also focused on establishing a culture for innovation. According to Director A, three components are required for sustaining a culture for innovation. First, one needs the knowledge and competence for innovation. He states that this alone will, however, not be enough. Second, one needs a 'drive' for innovation. Director A describes this as "wanting to challenge the existing" and he argues that this might be the most difficult part. Third, employees must be allowed to innovate. It is important that employees are enabled to work with innovation in practice. Director A argues that you have to utilise other measures than short-term economic goals to enable innovation, this will be discussed in [5.4.10](#).

Infrastructure Company A is currently adopting agile processes, and Programme Manager A stresses the importance of changing the company culture accordingly. He explains that the company is driven by planning and predictability, and when implementing agile processes it is very important that employees learn to cope with uncertainty. He states that the employees have to know what to do when facing changes and obstacles without plans or strict procedures telling them what to do. According to Programme Manager A, this is a difficult process.

Infrastructure Company B is facing many of the same challenges as Infrastructure Com-

pany A. One informant from Infrastructure Company B states that some managers are afraid of change, and are hesitant to discuss new ideas. EVP A argues that in order to make change easier, one has to make the employees used to change processes, as discussed in section 5.3.2. EVP B also argues that in order to enable agile change, one has to change the company culture first, as an agile mindset is a prerequisite. According to him this is a very difficult and time-consuming process, with no clear solution. The reason for this is that such a cultural change is very person-dependent, and thus the process has to be tailored to the company and its employees.

5.3.5 Customer and product

One area where Infrastructure Company A has implemented some agile processes, is in product development and customer relations. Programme Manager A explains that by using agile iterations, the company is able to discover new customer needs, and implement solutions into their products quickly and effectively. This allows Infrastructure Company A to rapidly respond to changing demands from their customers and adapt their products and services accordingly, and thus create additional value.

While Infrastructure Company A has a proactive system for discovering customer needs and adapting product offerings, Shipowner company has a more reactive strategy. According to several informants the company will take on contracts outside their core area of expertise if they prove valuable, but will not actively pursue them. They have taken some contracts outside of the core area with this opportunistic approach. According to one informant, the organisation has not tried to adapt to the changing demand during the oil crisis, because they are a specialised company. He argues that:

"You cannot be good at everything". (Informant, Shipowner Company)

This product strategy follows the company's view on change, as described in section 5.1.4.

Shipyard Company launched its transformation project as an effort to diversify its product portfolio. One of the focus areas of the project was to deliver a new product requiring multi-disciplinary competences. This is, however, a new area for Shipyard Company, because the products they currently deliver do not require these multi-disciplinary competences. Accord-

ing to Engineer A, Shipyard Company did not have the necessary engineering competences, and as a result, they lost several contracts for the new product. As a response to this, the top-management launched the 100 day programme, meant to speed up the transformation process. According to Project Leader A, one of the focus areas of the project is to identify what competences they have, what they lack, and how they should find the competences necessary for the project.

One of the reasons why Engineering Company A has gone through several restructurings has been to gain positive economies of scale, according to one informant. He states that the intention was to cut costs by operating everything under the same administration, but as a result, the company became very complex. The informant exemplifies this with the internal supply purchase systems. He states that because of the size and complexity of the system, it is almost as expensive to just get the supplies through the system as it is to go to the nearest store and buy them. However, another informant points out that by having everything under the same management and administration, the customer will only have one person to communicate with, making the customer relations much easier.

One informant from IT Consulting Company points out that the company is more or less focused on one specific field of technology, because of informal procedures for selecting customers and projects. He states that there are several different competing technologies, and that the majority of the consultants at IT Consulting Company are specialised in one of them. Because of this, the company tends to take on projects requiring that technology over projects requiring competing technologies. He argues that this restricts the company, as it loses flexibility when it focuses so heavily on one technology. He further argues that it has not been a problem so far, because there are plenty of projects to choose from within that field, but if the market demand was to change, it would cause problems. This seems similar to Shipowner Company, which invested only in ships and services related to offshore oil, because that was the most lucrative market. The informant also states that the focus on the specific technological field is a self-reinforcing process, because when the company only takes projects within that field, they only hire new consultants with that competence. In this way, IT Consulting Company becomes more and more specialised, which makes it harder to find opportunities in other fields if it should be necessary to do so.

IT Consulting Company does, however, continuously evaluate the market and possible projects. According to Manager A, the company has weekly "go/no-go meetings", where a group reviews possible projects, and decides which to pursue. If something were to change during the following process, the group would re-evaluate the project. In this way, IT Consulting Company has formalised a process for continuously changing the direction the company takes in regards to what products they deliver, and to which customers. According to Manager A this process has proven to be very successful.

Production Company is also continuously adapting its production systems to the market and to new customers, but in a very different way. According to Project Leader A, Production Company actively uses research projects to build relations with both existing and potential customers. He argues that by using research projects as direct marketing, the projects do not only have the potential to create value through technological development, but also to create relations to new customers. This allows them to get to know industry partners, and at the same time experiment with new technologies and new markets.

5.3.6 Technology

Because Production Company uses research projects for both technological development and customer relation building at the same time, they are able to experiment.

"Even if we don't get something out of a certain project, we have still built a relation to an industry partner for a possible customer relationship". (Project Leader A, Production Company)

This view allows Production Company to take risks and experiment, because a research project can be valuable even if it does not directly deliver results. For example new production methods be applied to future projects, even though it did not work as intended for the current project. This will be discussed further in section 5.5.3. Because the company has room for failure, Production Company can take on high-risk projects, in an effort to deliver some of the most high-tech products in the market. Project Leader A explains that they sometimes start projects they do not know if is possible, to produce technology that is almost considered to be "utopia", according to Project Leader A.

"This is the type of challenges one has to solve in order to get well paid. We often take on projects which we are not 100% certain will result in products that we can deliver". (Project Leader A, Production Company)

In this way, Production Company uses risk-taking to continuously adapt, in an attempt to stay ahead of the rest of the market.

Shipyard Company is also adapting to technological shifts. According to Engineer A, the company is focusing on robotising and automation in order to face future market situations. Similarly, Engineering Company B is investing in technological development and innovation, in order to adapt to the changing market. According to Director A, the company will not survive if it just continues to focus on the oil and gas sector. Thus, they have to invest in developing technologies that allow them to enter new markets. Director A also argues that digitalisation, standardisation, and modularisation all to help improve their competitive capabilities. The focus on digitalisation is evident when Project Leader A states that:

"Everything is IT, because it affects how people work. IT is about establishing processes that simplifies the way people work, and make them more effective". (Project Leader A, Engineering Company B)

Similarly, EVP A states that:

"Innovation and transformation is not only about new markets and new technology, but also equally about method and process innovation". (EVP A, Engineering Company B)

EVP A states that Engineering Company B uses iterations in order to implement these improvements to their processes, which will be discussed in depth in section [5.4.3](#).

Infrastructure Company A also focuses on standardisation. Both informants from the company state that they have to standardise their technological systems in order to be able to use agile methods for change effectively. They argue that in order to scale up successful changes, which is a key point of their agile change process, they have to have a standardised system across all business units so that other business units are able to adopt the changes easily. Because of this, they are currently trying to standardise their IT system across all business units. Manager A from Infrastructure Company B also argues that standardisation makes change easier to implement.

5.4 Process

Process is concerned with how the change is carried out, in this section we present the findings related to: plan-driven, emergent, iterations, feedback, customer collaboration, evaluation, communication, decisions, the role of managers and goals.

5.4.1 Plan-driven

We separate between planned change, and plan-driven change. The changes we have been studying are mostly planned in the sense that they are conscious changes being made to an organisation. However, the plans have only been used as a central driver of the changes in some of the cases. Here we will present the findings where the change process itself follows a form of sequential planned process, where the plans are used to drive the change.

According to EVP A in Engineering Company A the process of the business transformation programme follows a 3 step framework for implementing the programme. The framework consists of: create an understanding for the need to make the change, communicate the goal, and how to do it. EVP A emphasises the importance of focus on such a change programme.

"You have to get attention, set goals and plan. You have to set goals, establish a new organisation, get the right people and establish processes, so Strategy, Structure, People and Processes, in that order. ... A compelling story is important, and a clear and robust plan for implementation and clear goals." (EVP A, Engineering Company A)

Project Leader A in Production Company describes how they make wide plans that can handle uncertainty. Because of their collaboration partners they have to make project plans, but they make the plans as flexible and with as much leeway as possible in order to account for uncertainty and events during the project. According to Project Leader A they then narrow in during the project when they see how it is going. This is done because of the length of the projects (3-4 years) and this allows them to utilise the knowledge they have gained during the project to manage the project process, according to the informant.

According to Manager B in Infrastructure Company B the company needs a clear transformation programme, where someone makes a decision on what should be done and tell the employees: "This is how we do it, and this is where we are going". Manager B emphasises the need

for the programme to include a clear division of tasks and roles so that people do not interfere with each other.

5.4.2 Emergent

SVP B of Engineering Company A describes how they approach new markets or new customers:

"I think that sometimes it is a long-term targeted effort, sometimes it is a bit opportunistic, you just get a project in your lap. A customer approaches us and asks: 'Is this something you can do for me?'. So it is a kind of a mix, and I think maybe we have the most successes from the customers who approach us. ... So not strategy, but opportunistic. I do not know, but maybe we have to look at the possibilities which exist, and see that 'yes, this is an opportunity which matches our capabilities'. And maybe it matches the strategy we have, good, then lets go for that. And sometimes we can experience that yes, we do some things according to the strategy. Other times we see that wow, we did this, maybe we should do more of it and the strategy is developed based on this. So I'm not sure what comes first." (SVP B, Engineering Company A)

According to the informant the situation where an opportunistic project has gone well and shaped the strategy has happened many times.

Director A of Engineering Company B states that some of their cost reductions have been implemented gradually. The reason he gives is that they felt that they did not have enough time for a gradual approach at the start of the oil crisis when the revenues fell. This was done by implementing the simplest cost-reductions first.

Project Leader A from Production Company describes their process with a new customer, where they started with a relatively simple delivery to the customer, and after that went well they were able to scale up their delivery to the customer. He explains that this customer is now one of the largest customers, and the competences from that relation is utilised in other projects. The informant says that they of course wish to deliver the most complex and most expensive at once, but due to the risk involved it is often reasonable for the customer to see that the supplier is good enough before bigger deals are made. This gradual building of a customer relation then influences the strategy. Project Leader A mentions that when creating a market strategy

they define focus areas, and then they have a separate process for finding business partners in a market, where they select some based on different criteria and then try to approach the suited partners. The big customer described above was not a part of the strategy directly, but they used the separate process to select the customer initially. He mentions another customer which was a part of the focus area of the strategy, but the formal process of entering that market was not utilised to engage with the customer. Instead the customer approached the company. During projects the informant explains how they make the plans as flexible as possible in order to be able to account for changes that happens during the project and explains how they started out with a project they thought would be impossible, but still interesting, where they now see that it is possible and have adjusted the project accordingly. According to the informant they are utilising such projects to experiment with products, markets and technologies. CEO A summarises their strategy as following:

"We do not decide the market, we have to adjust to the market". (CEO A, Production Company)

Manager A of Infrastructure Company B mentions that he thinks that a natural streamlining over time is more suited than a forced streamlining. EVP A in the same company describes that because of the uncertainty discussed in 5.1.3, they cannot have a clear planned approach. Rather they have a gradual approach where they adjust accordingly as described:

"The models that we present are not perfect, but we see that we have to start somewhere, and we have to go in a direction which makes things better than it has been. But this is not necessarily perfect from day 1." (EVP A, Infrastructure Company B)

EVP B in the same company mentions that in the change process which he is responsible for, he is implementing the split of the project management office (PMO) first. The reasoning for this is that it clearly has to be done. According to the informant they have not had a goal for the end product, but they have seen that splitting the PMO from the rest was beneficial. However, for the rest of the organisation they need more time and he states:

"We need more time to think and discuss, and design a new organisational solution. ...We have to work more together with the rest (not the PMO), because we see that it affects more units. The problem was not only this spesific unit, but it might be the interaction with other

units. Therefore, we have to involve more people and we have to work through something like a workshop in order to reach a solution, so we have to spend more time on it." (EVP B, Infrastructure Company B)

5.4.3 Iterations

Engineer A in Shipyard Company gives an example of an informal iteration regarding the change in the reporting process. He has not made a plan for the change, as he is not sure where the process will end up. He explains that since they are not sure how the result will be and the result is something they will agree on together with another department. He thinks that they will make some changes in the next report and then receive feedback from the other department, make new changes again, and that the change will be implemented in such a manner.

Manager A in IT Consulting Company explains that they try to work with a defined focus area in Plan, Do, Study, Act cycles (PDSA). Where they work with a focus area using an iterative approach with each iteration being split into Plan, Do, Study, Act (PDSA). According to the informant they are not so good at it yet, because they just started doing it, and are planning to formalise it more. But they try to implement and experiment with different changes, get feedback and then make changes accordingly in a form of spiral. According to the informant it is tempting to go directly from Plan to Act, but he believes that it is important to make hypotheses and to experiment. The informant states that it is much easier to make changes if you define a process first, and then make adjustments on it.

Representative A in IT Consulting Company mentions that the management group likes to experiment and try new changes, however, changes are not always communicated. He states that they are used to it, so it is not a big challenge. The informant explains that this experimenting is a part of the agile mindset in the business. He thinks that the idea is to work in a way where they implement initiatives, get feedback and then make changes to it through iterations. According to the informant it is not always scaled and spread to the rest of the business if an initiative works, and he believes that the system may not be structured enough. He thinks that it would be better if it was formalised, especially the criteria for what is a success and what is not in order to decide on the scaling. The informant feel like they do the first part where they experiment but they are lacking on the structure of the follow-up which includes evaluation

and scaling. The informant warns against too much experimenting, and states that you have to make sure it is done properly.

Manager A in IT Consulting Company explains a recent change in the sales department where they have defined a go/no-go meeting every Monday. In this meeting they decide which offers to go for, and later on the same day they have a "go" meeting where they discuss the offers they have decided on and how to approach the offer. The informant explains that if any unforeseen events happens during the process it is handled by the "go/no-meeting". They have defined criteria (Relations, References, Competences) which the "go/no-meeting" uses to decide. This has been a successful way of organising it for the company, according to the informant.

EVP A of Engineering Company B explains that the Business Transformation Project is utilising a methodology inspired by Agile. The methodology is split into different phases, and within each phase they have small iterative sub-projects which they refer to as "Sprints", and that this has been very important for the project. A focus has been on keeping the coordination between them functioning. EVP A further confirms that they make a project-plan on a sub-project and then they make adjustments based on feedback and experience. An example of a sprint goal can be to establish new routines, create policies, create processes, reveal processes, and map them. Project Leader A of the same company confirms that they are working in iterations, which enable them to try things during the change and experiment to be able to adjust to the (environmental) changes that happen during the process. Project Leader A explains:

"In this project (Business transformation project), we have an overreaching goal. This goal is set, we have to go there. And to go there we have to go by other places on the way, so we break it down, first into big pieces, then into smaller and smaller pieces. When we have suitably sized pieces we call that a sprint. ... In that sprint we split it (the piece) into tasks and then we put a time frame on the tasks at hand. And sometimes we see that a task perhaps has to carry on into the next sprint, it is not a goal to move tasks, but you are allowed to move tasks as long as we have progress in the project. You have to create something, you have to have progress and do something." (Project Leader A, Engineering Company B)

Project Leader A in Production Company explains that they are using their research as a form of experimenting where they can experiment with products, markets and technologies. CEO A of the company says that this experimenting is natural and daily. He points out the fact

that humans are incremental and are more concerned with what is known, but they try to be conscious about this and do "Fail Fast". CEO A emphasises that being fast and dynamic is very important to be able to compete, but that the down-side with being fast and dynamic is that a culture where they dare to try, run the risk of trying too much. He explains that they have been burned by this earlier and have tried so much (taken too big risks) that it has become very expensive. According to the informant they have learnt and are now better at taking the risk into consideration.

Programme Manager A of Infrastructure Company A explains that they originally planned to implement their Business Transformation Programme as 90 day sprints (iterations), where they for each sprint had an ambition to reach some goal within 90 days with a delivery after the 90 day period. The informant further explains that they are still utilising 90 day sprints, but that they have defined yearly goals as well where the 90 day sprints are more sub-goals of the yearly goals instead of independent deliveries as first planned. This goal implementation will be discussed in 5.4.10. The informant explains that the planning of a sprint starts with a problem that needs solving in the project. They look at the overall project plan and goals, and then create a project plan which is divided into sprints. Within each sprint the implementation is more or less agile according to the informant. EVP A of the same company explains how they implement the idea of "Fail Fast":

"The advantage of evaluating after 90 days is that we can see 'Have we reached land? Have we gone as far as we planned?' We say that if we are able to reach 60-70% we are happy, because we know there are obstacles. This is good, because after 1x90 days or 2x 90 days we can stop the project, if it has the wrong course. So we stop at once, instead of running it for a year and waste tons of resources. We have management groups who distribute resources, they evaluate after each 90 day sprint, and see if there is any point to go on, or if we have to stop and re-think. That is very important, because we have a tendency to keep going if we have made a plan for a year or half a year, we keep going with the project and we get no results. Then we would lose tons of time and resources, that is an important aspect of it (the agile methodology)." (EVP A, Infrastructure Company A)

Both informants also stress the other aspect of fail fast, which is to scale fast. They mention that with yearly goals it is easier to deem a sprint a success in order to start a scaling process.

Manager A of Infrastructure Company B describes a form of informal iterations. According to him they have done the project to increase efficiency in his department, and are now thinking about creating a team to keep working with such projects and follow up old ones. One of the reason for this is the positive feedback they have received from the stakeholders in the changes according to the informant. He says that the goal is to be able to continually adjust to the developments. He states that this way of working is something they have done for quite a while but without it being formalised.

EVP A emphasises that because of the uncertainty and how it rules out a plan-driven approach, they have started with the changes they know they have to make no matter how the environment ends up for the company. He confirms that when facing high degree of uncertainty they want to start with the smaller changes and then scale it. In a sense this is a similar approach as described above by Director A of Engineering Company B, by starting with the easy or known changes. A similar approach is described by EVP B in Infrastructure Company B in regards to the change he is responsible for where they have started with the certain change of splitting the PMO office, and are working more with the more uncertain part (the rest of the department).

EVP A describes that they are using a variant of "Balanced Scorecards" to make changes in an iterative manner with a prioritised list of goals. The cards are available to every employee, but each manager has their own card which they report on to their nearest leader and so on, all the way to the top. On the scorecard they list the most important changes/goals which the managers should work towards. Some of the elements of the scorecards are other aspects than change, but now a big part of these scorecards is the changes going on in the company. EVP A mentions that the cards are used to a varying degree, but that the idea is that the cards have a semiannual horizon, and after half a year they have a big review. In the review they present their work for the other managers and make a new card. Sometimes a goal is carried forward to the next card. In addition, they have a "business review" every month where the cards are followed up on. Here they present what they are working on, high-lights and challenges. He says that if a goal is reached before the semiannual period, they add another one to the card. At these business reviews the goals of the cards can also be changed if they see the need due to some unforeseen event or changes. The informant mentions that only 5 items are on the scorecards

but they are dealing with much more than 5 items so sometimes something outside of the card is deemed more important and worked on instead. In addition, EVP A mentions that further down in the organisation the business-review and the follow up on the cards are a bit more varying.

EVP B of Infrastructure Company B mentions another informal iterative approach. After the evaluation of the project he is responsible for, which will be discussed below, if it is unsuccessful, they will have to go another round and keep going until it is successful. He explains that the changes being made now are really a follow-up on the changes which were made during the last re-organising two to three years ago.

"We did a large re-organising of the whole company, and then we said that this is the starting line-up, and when the organisation is settled we have to see if there are departments which need changes. The light fell on Project & Development, which did not work according to how we had planned. So now we are tweaking on it, and we will do that again after one and half to two years if we see that it is still not working. Then we have to go another round."

(EVP B, Infrastructure Company B)

5.4.4 Feedback

IT Consulting Company allows feedback during change processes by involving employees at an early stage. Manager A states that they utilise several communication channels at an early stage in change processes, such as intranet, newsletters, and email. This allows all employees to provide feedback during the processes. Manager A argues that feedback is central to change processes in IT Consulting Company, and that is one of the reasons they use the PDSA-cycles discussed in the previous section.

Engineering Company B has implemented a feedback system, in order for the company to continuously change based on feedback. This system allows employees to send feedback and suggestions to any other employee over the company's intranet. The previously discussed suggestion boxes of IT Consulting Company and Shipyard Company function similarly, but with these systems the feedback goes through a suggestion committee instead of going directly to the recipient of the feedback.

5.4.5 Customer collaboration

For several of our case companies, close collaboration with customers and other business partners are key for changing under uncertainty. Technical Manager A from Shipowner Company states that unexpected changes often occur during operations, as a result of changing customer demands. In order to manage these changes, and satisfy their customers, they have to have good dialogues with their suppliers to be able to change quickly enough.

SVP B from Engineering Company A emphasises the importance of collaboration with other actors in the industry. He points to the very strong environment for collaboration in the maritime sector in Norway. EVP A of the same company argues that this close collaboration is very important when changing in an uncertain environment. He argues that when the market is uncertain, one have to be close to the customer and the rest of the market in order to make the right decisions.

Production Company also regards close customer collaboration as important when changing in uncertain environments. Project Engineer A argues that the collaboration is key, because the customer always has more knowledge about their own market. So when considering to deliver new products to customers in new markets, Production Company has a strategy based on close dialogue with the potential customer. As previously discussed, Production Company also uses research projects actively to get to know these potential customers better. The result of this is, according to Project Engineer A, very close relations to customers, built on mutual trust. Because of this, the customer relations are often long-term focused. The relationships have, for example, made sure that Production Company are still in dialogue with earlier customers who no longer buy products from Production Company due to the oil crisis, according to two informants. The goal is that the customers will resume to buy products once the oil market stabilises.

5.4.6 Evaluation

Engineer A of Shipyard Company explains that when they tried to enter a new market they were lacking some competences in order to be successful in the new market, which lost them contracts. He explains that he thinks "everyone knew", but that a lack of feedback and formal evaluation when trying to enter the new market was the reason for the oversight. He explains that

they have a Project Execution Model (PEM) which includes "Gate Reviews", where they stop after a while and go through a checklist for each gate review to make sure that everything is OK before moving on. And according to him if everything is not OK, but you go on, you are at least aware of the risk. If not you have to do it before you go on. The informant believes this is a very good practice, but it was not used in the project where they tried to enter a new market. It is used in design and in other projects, but he believes there should have been gate reviews in the change project as well. He emphasises that it is important to:

"To stop, have a breather and check if you are where you should be". (Engineer A, Shipyard Company)

He explains that if competences were a part of the gate reviews, they would at least have had a conscious relation to it, instead of "everyone knowing it", the review would have forced a conscious choice. Project Leader A of Shipyard Company supports the idea of implementing "gate reviews" in change projects as well. He emphasises the fact that the reviews can serve as a form of experience summary during the project. He explains that they have experimented with collecting the full project team and to have a summary during the project instead of after the project, and that was a positive experience. In addition, he states that they can run parallel projects, and that formal reviews during the projects can benefit the other projects. He states that this may happen today because people talk with each other, but that the reviews will formalise it.

Committee Member A in Shipyard Company mentions that the suggestion committee is planning to start following up on the suggestions that have been handled. They plan to create routines or systems to get feedback on how the suggestion went and make changes if necessary based on the feedback. He thinks it is an important aspect which they have not focused on earlier, but are planning on implementing this year. He mentions that a possibility when doing this is when they see something that works based on a suggestion in a department, they can implement it in other departments if they are able to follow up on it. Another aspect that he mentions is that sometimes the committee gives a department responsibility for implementing a suggestion, but due to various reasons it is not done and is forgotten about. By following up on the suggestion they can ensure the suggestion is given the focus it needs. Another situation is where the department has kept improving a suggestion without the committee being informed,

and this may lead to the employees not being rightfully compensated for their contribution and this makes scaling the suggestion harder.

Manager A from IT Consulting Company mentions that today they are looking at evaluation of different change initiatives as kind of a waste, but they try to make structures for continuous evaluation of changes which makes sure that the success of the initiatives are more visible. This will make it clearer which initiatives are kept and which are discarded.

One of the informants in Engineering Company A says that they have not been so good at following up and evaluating changes, and explains that:

"I think that maybe there has been so many things going on during a short time period so we are not able to see 'is this good or bad?' We do not have time to digest changes before the next round arrives." (Informant, Engineering Company A)

He states that they do not evaluate enough, and says that the tempo is so high that they do not prioritise looking backward, but he thinks that they should evaluate more after changes have been made and after contracts they deliver. He mentions that they are trying to evaluate more now than before and do "lessons learned" where they look at what went well and what went wrong.

EVP A of the same company explains that they have a continuous evaluation of the business transformation project. The evaluation consists of a tracker which create monthly reports on the cost cuts. In the reports they see when the cuts will be effective, how big they are, where the cuts are and which kind of cuts. In addition, they report on their (top-management's) communication. EVP A explains that in the Business Transformation Programme they have had "lessons learned" after each sub-project as a part of the programme. In "lessons learned" they sum up what was good, what would have even better if and so on, and this is used to take care of the experience and transfer it to the organisation. According to the informant the business transformation programme is split into phases where they have "gate-reviews" between the phases to make sure everything is OK before they move on. If they do not reach the goals they go another round in that phase. He mentions that early gate reviews give a confidence for the participants that they will reach their goals. The gate-reviews in the programme have been attended by the programme management (top-management) and the goals/conditions for the reviews have been set by the same group. He explains that they also have go/no-go-meetings on some

aspects of the business transformation programme. An example he mentions is that when they are communicating something they have a gate to evaluate communication which makes sure they are where they should be, if it is good enough. If it is good enough they keep going, if not they spend another day communicating.

Engineer A in Engineering Company B explains that when entering new markets with new customers and/or new products they have not spent enough time evaluating while doing the project with the new product or customers. The informant explains that the lack of evaluation is due to the time pressure which the organisation is under, but that they have focus on learning afterwards when they do not have time during the project. The informant mentions feedback from the operators as an important source for learning during and after projects.

EVP A in Engineering Company B explains that a part of the project methodology they use is "decision gates". The informant explains that in the gates the project or process is handed over to another owner. At the gate they define a checklist for the projects for the decision gate, and the project stays in that phase until the checklist is met and they can have a handover. He explains that this methodology applies to all projects or processes in the company. Project Leader A of the business transformation project explains that at the end of each sprint the delivery is evaluated up against the goals for the sprint and accepted if the goals are met, or some goals are moved to another sprint if they are not met.

Project Leader A in Production Company thinks that they have a big potential for improvement on evaluating projects and to get experience and knowledge from a project into the organisation. He believes that they are better on evaluating during a project due to informal processes, simply talking to each other, than they are on evaluating after a project. A potential he sees is to include more of the employees in such evaluations, because the engineers and operators might see more possibilities and solutions. They do, however, have status meetings once or twice a month where they review the projects according to the informant.

EVP B in Infrastructure Company B explains that after the change process in the department they follow-up and evaluate in a multitude of ways. With the split and establishment of the Project Management Office (PMO) they will evaluate if they have become better at running projects. According to him they will evaluate if they deliver more projects within the time and cost frames. In addition, they will have an external audit (through a consultancy firm) to give

the PMO a project maturity score, a score which they already have for the current organisation, so they can compare the maturity. They will then have another evaluation of the rest of the department and the changes made one and half to two years afterwards when the organisation is settled. He states that the evaluation and follow-up on how the units work (together) have been lacking and that problems have now become so obvious that they have to do something about it. They are unsure on how they will do the evaluation of such aspects after the change. He states that they will work on it, and that they have started working on some checklists, but that it is not formalised yet.

5.4.7 Communication

When talking about the difficult situation the company is in and how they deal with it SVP A in Engineering Company A states that:

"Communication is extremely important, and to be open, but only to a certain degree is important. So there are very many things you have to take into consideration." (SVP A, Engineering Company A)

Consultant A in IT Consulting Company explains that they focus on informing everyone early in change projects and discussing how to proceed with the change in a democratic fashion. The informants also mentions that they have a Monday meeting every week where the management informs the employees and ask for advice.

When talking about experimentation done by the management in IT Consulting Company as discussed in section 5.4.2, Representative A thinks that the lack of information and a somewhat confusing information-structure with different channels (intranet, meetings, newsletter and mail) is a hindrance when scaling, because the initiatives that work have to be communicated to be able to scale it. The informant explains that maybe someone is not at a meeting where something is mentioned or do not check the channel where the information is posted at the correct time.

Director A of Engineering Company B says that change management is hard, and expands on it:

"We in the top-management can have our discussions and we can agree. And then the question is, for the managers who are responsible for the different areas, the shipyard, design or any of the other departments, they have to communicate to their management group. And then the next level, and then it is exciting to see how much the story has changed just one level down. How engaged and how strong the initiative stands, or how much weaker it has become just one level down. Because if they are unsure as well and shall begin working in a new way, but they not fully know how to do it, then the message will become weaker again in their management group. And what does that mean for those in that group who shall communicate it to their department managers in the next level. ... So very quickly an initiative which is embedded in the top-management begins to deteriorate further down in the organisation." (Director A, Engineering Company B)

Director A emphasises that they do not know how to "solve" this, because it is difficult, but they are working on it. He also mentions that he believes that a large part of the 70 % failure to implement changes is due to the lack of communication. A similar notion is shared by Engineer A in the same company, who mentions that sometimes their (the engineers') feedback to the management does not go all the way because the message is distorted on the way up. Engineer A emphasises that the management is responsive to good feedback. The informant explains that the communication channels are more formal and systematic than before. He states that he thinks there is too little communication both ways (from engineers to management and vice versa). He explains that it has been hard now during the changes, but that it is getting better, and states that he thinks involvement and communication are key when making changes. Union Representative A has a similar perspective, and states that:

"Everything is about information, it is not always the people who are the problem. It can be middle-management and management who should inform people about new routines. And there I have criticised many of the middle-managers, especially those who have reached the point of the last 5 years before they retire. They say 'We have done it this way, and we have good routines and we can do this, and this is not that important'. But when the whole system is changing there as well, they have to spread the information, and that is change. And that is the key to getting it right." (Union Representative A, Engineering Company B)

Union Representative A explains that they are not good enough at communicating what is ex-

pected, and what does the management expect. He mentions that he has been in meetings during the changes where they decide on different matters and then later on he sees that this information has not been spread down into the organisation through the middle-management. He refers to some of the middle-managers as "brake pads for information". And he thinks that spreading the information and communicating is the most important aspect of change. This picture of the situation is similar to the one presented by Director A above. Union Representative A explains that they have at least four meetings a year where some of the union representatives meet, the owners, and all of the top-management and directors. The informant explains that these meetings are based largely on trust, and they write a "limited report" after the meetings. At these meetings they can discuss honestly and openly, and the representatives gain a lot of information both ways about all aspects of the company, and if they disagree they discuss it there. He says it is fantastic to be able to have these meetings and this relation to the management.

EVP A in the same company explains that they have had a focus on increasing cooperation and communication in the projects that EVP A owns where they have meeting biweekly with all the project managers (the leaders of the sub-projects in the business transformation project). At these meetings the managers present their projects and the status, this is done to spread the information and gain new knowledge according to the informant. Project Leader A in Engineering Company B explains that creating an understanding that they are working towards a common goal has been very important. He mentions that some has become a bit frustrated because of the changes that have occurred during the project due to the experimenting and uncertainty. So they have had to communicate that the result is better by "taking the detour". He further explains that they have had stand-up meetings in the main project (business transformation project), every morning for 15 minutes. In these meetings they have focused on what needs to be dealt with that day, any problems, and a focus on solving the challenges and the things that went well.

EVP A of Shipowner Company explains that when doing the down-sizing in the company it did not come as a surprise to the employees. He explains that when the oil-crisis hit they put the ships in lay-up and hoped it would solve itself, but it kept on going down, and more ships were put in lay-up. So he believes the employees knew it, but when the decision was made they held a meeting where the CEO informed the employees formally. Technical Manager A in the same

company believes the situation was well communicated, but that due to the uncertainty they have often not had information before the media. He states that especially his technical department was heavily involved because they knew about the ships coming in for lay-up. He thinks it was handled well, and they got the information they had the right to get. He explains that they have now started having weekly meetings in some projects where they discuss problems, status and so on.

CEO A in Production Company states that communication, honesty and openness is important when dealing with crises such as the oil-crisis. This applies to the relation with banks and the employees, to communicate both ups and downs.

One informant in Infrastructure Company B thinks that there is a lack of information from the top-management and that suggestions are not followed up on. The informant also thinks that a lot of discussions and decisions are not communicated to the lower levels of the organisation and emphasises that this is important. EVP A of Infrastructure Company B states that it is important that the employees understand the changes, the content and the reasoning behind it. The way the informant does this is through communication, which involves talking with the employees. They talk with the employees in different settings and travel around to the different departments and discuss it. An important setting for this is the two management gatherings they have each year. There they talk about what they do, what they think, everything from an overall strategic level to concrete examples. In these gatherings a goal is to make those managers able to explain and answer questions about the change to their employees. EVP A states that not all of the managers are conscious enough about this aspect, and therefore the communication to the lower levels of the organisation is varying and different for each department. Therefore, the top-management tries to participate in regional gatherings to inform the employees. In these gatherings the communication is two-way where the employees have suggestions, questions and they discuss the changes, according to EVP A. He mentions that in his unit they have management meetings every second week, where EVP A and the SVPs in the unit meet. In these meetings they each write a small report on what they are working on and spend quite a bit of time going through them. According to EVP A this is done to coordinate across departments and to make sure that everyone is up to speed on what is going on.

5.4.8 Decisions

According to all informants from IT Consulting Company, the company has many informal and democratic decision processes based on discussions. Consultant A states that such informal decision processes could be problematic if people feel like things are decided behind their backs, but that he personally does not feel that way. He says that the focus is on involving everyone to avoid negativity. Representative A also thinks the informal decision processes are a good thing, as it reduces bureaucracy. He does, however, point out that if an employee are not at the right place at the right time, the employee does not get involved in the processes. He also points out that large processes where everyone get involved are rare, and that this approach could have been used more frequently. One decision process that has been formalised in IT Consulting Company, is the project selection process. As previously discussed in section 5.4.3, this is done by 'go/no-go' meetings, which has made the process more efficient.

Production Company on the other hand, has informal processes for deciding which projects to pursue. According to Project Leader A, potential business cases are presented to the CEO, who then decides either 'go' or 'no-go'. One informant claims that this is not optimal, as the decision making tended to be more lax before the oil crisis, as the company did very well economically. Thus, the company committed to projects that would not even have been considered under the recession. The informant therefore argues that more formal decision processes could make it easier to focus on the most valuable projects. Even though the processes are informal, the company has a set of criteria that should be met in order to take on a project. The informant argues that such criteria should be a central part of a more formalised process.

Not every company involves the employees in the decision-making in every type of change. Informants from two different case companies state that middle managers during the oil crisis were told by the top management how many they needed to fire, without middle managers having the ability to affect the decisions.

5.4.9 The role of managers

According to all informants in IT Consulting Company, the role of managers is to take care of the needs of the employees, and facilitate the employees. This description is shared by both the

managers and the employees. Consultant A mentions that it is the customers who decide and not the managers, and, therefore, the managers facilitate.

Project Leader A of the business transformation project in Engineering Company B describes the role being about facilitation as follows:

"My role in this project is to make sure that everyone is well, that the conditions are there for doing good work and to make sure that the employees have the needed resources. Try to whip as little as possible and rather push and pull. With an attitude of: This is agile, we're having fun, and we're looking forward to going to work." (Project Leader A, Engineering Company B)

He also describes the role of top-management as just making sure everything is OK in the project. Project leader A emphasises that the focus on the project from the top-management and the communication from the top-management is important. He states that the attitude in top-management is "This is important and something we shall do", and that this attitude has been important to ensure the trust for the project owners, the participants in the project, and the people who are affected by the changes.

CEO A of Production Company mentions that trust is important, and that the top-management has the possibility to have frequent conversations with the employees and spend time together. He does emphasise that this is easier because they are small. According to CEO A this trust and the fact the employees know they are experienced make it easier when unpopular decisions have to be made. CEO A emphasises that trust is important, and that when people trust each other in a business they also trust the decisions made, this goes both ways, in a way that he trusts his employees when they make decisions as well.

EVP A of Infrastructure Company A mentions that managers need to be able to have both the planned perspective and the agile perspective. If you have managers who are only working with the agile perspective or the planned perspective it will result in collisions. Therefore, according to EVP A, managers have to mix the two perspectives.

5.4.10 Goals

According to Committee Member A at Shipyard Company the suggestions from their suggestion system are evaluated based on whether the suggestion contributes to one of two goals: it has to

either increase profitability or Health and Safety. These goals are mainly set by the management.

In IT Consulting Company, according to Manager A, the goals for change processes are set by the top-management, but are presented and discussed with the department managers before they are given responsibility for the implementation.

In Engineering Company A several informants state that cost focus has to be a goal, even in good times. By doing this they think they can handle or avoid future crises better. According to EVP A in Engineering Company A their business transformation project has two main goals. Firstly, reduce costs. Second, reduce bureaucracy, more enable rapid decisions, and create consistency between responsibility and authority because of unclear responsibilities. EVP A states that reducing costs was the most important thing they did.

As discussed in section 5.1.1, Engineering Company B has a three-way strategy in order to make it through the oil-crisis. The first one is sales and winning the contracts that exists, the second one is costs by adapting the costs to the market, and lastly they focus on innovation. They focus on balancing the cost reductions with investing in the future. Director A also emphasises creating "actionable items" when creating goals. Such an "actionable item" is referred to as a sprint by Project Leader A. According to the informant this is necessary in order to evaluate, to create concrete goals, and Director A states that if you do not do this you lose the control. They measure this by not only using financial instruments, which Director A states implies managing based on the history. Instead they try to use indicators which can say something about the future, based on many different indicators such as sales leads, sales projects, number of contracts, number of innovations, number of new products, customers, process efficiency, quality, and HR. They try to measure both the human side and the economic side in order to follow up on the goals. Director A also states that the costs have to be a goal in good times as well, and states that many of the leaders today have not experienced such hard times before. According to EVP A and Project Leader A the goals of the business transformation project are referred to as a "Backlog". This "Backlog" consists of a set of goals for the project. This "Backlog" of goals has been changed during the project because the project has changed form.

In Shipowner Company, according to EVP A, they focus purely on cutting costs in their current change process and they do not have an economic situation which permits them to be ready for the future after the oil-crisis. This perspective with a purely costs based focus is shared

by the other informants in the company.

In Infrastructure Company A, according to Programme Manager A, they started out with the transformation programme with 90-days sprints, which should include an independent delivery after 90 days. The transformation has a main goal or vision for year 2020. This has been changed to have yearly goals where these 90-day sprints should be sub-goals of these yearly goals. This was changed because of feedback from the employees that they wanted the contours of a goal between 90 days and the year 2020. Another reason for the change, according to Programme Manager A, was that resource allocation and project planning in the company are done at a yearly basis. The yearly goals are more overarching goals, while the 90-day sprints work towards sub-goals. EVP A also emphasises that this structure makes it easier to evaluate if a sprint is successful or not. According to Programme Manager A they also made the goals more concrete when they made this change, so it is easier to measure. According to EVP A, they focus on both the cost aspect and on innovation and development in order to balance the planned and the agile aspects of the business. The goals are set by the top-management.

Manager B in Infrastructure Company B believes it has been difficult to create continuous change because people have not had concrete goals. The informant thinks that if they used a model with local responsibility for the changes, with goals on what the changes should accomplish, then the change could be done continuously and better. According to EVP A in Infrastructure Company B has defined overreaching goals for 2020, within technology, competences, resources, processes, new customers, and new markets. In addition to this, according to EVP A, they utilise semiannual goals based on "Balanced Scorecards". According to EVP A these scorecards have elements from the 2020 goals. The scorecards have already been discussed in section 5.4.3. According to EVP B the change project has not had goals for how the end product of the change should be. According to the informant:

"We have to discuss in order to reach a verdict on the end product of the change". (EVP B, Infrastructure Company B)

5.5 Outcome

Outcome is concerned with the result(s) of change, this is split into: positive outcomes, negative outcomes, and learning. Since most of the change processes we have studied are on-going, it is hard to identify positive and negative outcomes from the changes. In addition, most of the negative outcomes and learning we have identified are from older changes. Learning can also be looked at as a positive outcome, but we have separated it for clarity.

5.5.1 Positive outcomes

According to Committee Member A in Shipyard Company the Suggestion Committee is a success, because the employees have given feedback on the fact that they use the system because they see that it works. Committee Member A emphasises that the different departments have a budgeted amount of money to spend on change, and that this has been a positive addition to the system. In addition, the Committee is able to follow up on the suggestions.

According to both EVP A and Programme Manager A of Infrastructure Company A having a budgeted amount for change is very important and is a success. In Infrastructure Company A they have a set amount of money that is used for change that is not measured by profitability by traditional methods such as NPV (net-present-value). This is a change which was made to their division, but is now being implemented in the rest of the company because it has been deemed a success. This has been done because it is hard to measure the profitability of some changes, and according to Programme Manager it is about top-management taking some risks.

5.5.2 Negative outcomes

Changes can be rough for employees. One of our informants illustrated his feelings resulting from multiple rapid changes without employee participation as following:

"You are in a boxing ring, and you are down but you feel like you are on your way back up again, and when you get up on your knees you get a punch in the face, and you are back on the floor"

In this section we will present our findings related to negative outcomes of change.

Manager A from Infrastructure Company B mentions a major change programme in the past, which was not successful, where according to the manager, the division that he worked in was negatively affected for years. The reasons he gave for this was that the change had been implemented top-down where the employees were not heard when they tried to give input. According to the manager it was a combination of top-management which lacked knowledge of how the organisation worked, with a focus on costs, too simple solutions and the change was too big and implemented too fast. The result was that the production was hurt for years according to the informant.

One of the informants from Engineering Company A talks about how several structural changes in the company, including merging, splitting, buying and integrating divisions and companies have been difficult changes. Where, according to the informant, the due diligence process before making the changes have not been thorough enough in regards to what should be done in the implementation of the changes, naming cultural differences as an underestimated aspect. According to the informant the problem had been in the implementation of these changes and not in the decision to make the changes. The way of making the changes had been controlled by top-management, and typically only one of the parties who was affected (i.e one division) was included. This notion was supported by several informants in the company.

Project Leader A in Production Company talks about how they had a project, which was deemed a failure for 5-10 years, before they understood that it was a very successful project instead. The reason for the initial status as a failure was, according to CEO A, that before the project was finished the macroeconomic conditions had been changed and they were not able to adjust the project to take these changes into consideration. Later on they managed to utilise the knowledge from the project, so that it was deemed a success. This will be further discusses in the next section.

5.5.3 Learning

Learning is separated from positive and negative outcomes because you can learn from both. The companies have many different approaches to learning, and are able to utilise their experiences to a varying degree. As one of the informants from one of the companies put it:

"We have learnt, and we have clearly become better at downsizing, through learning by doing."

As seen in the previous section, and according to CEO A of Production Company, they focus on being able to use the knowledge from their projects in other projects, and learn from it, no matter the outcome of the project. This is exemplified by the failed project where knowledge from the project has been very important in the years afterwards. They are also focused on cross-over learning. Since the projects of Production Company often are done in larger networks, they cooperate with people they might work with again later. Thus, they forge potentially important relationships no matter the outcome of the project. This view is also shared by the other informants. Project Engineer A emphasises that they have a basis of knowledge and technology, which they utilise to serve different markets and different customers, but they use this basis for all of them. CEO A emphasises that they have continuity in both board and management which is important in regards to learning from experience from earlier crises and mistakes.

Several informants from Engineering Company A mention that the company has not been able to utilise the experience and knowledge from previous changes when new changes are made. The informants give several reasons for this. One of them is the fact that there have been little continuity in top-management, with frequent changes, and many of the new leaders wishing to put their footprint on the organisation, driven by short term objectives. Another reason which was given was that the people with experience from previous changes do not feel that there is a possibility for them to contribute in new changes. In addition, many of the people with this experience are no longer in the company.

In regards to learning, Project Leader A in Shipyard Company mentions that they have had "Lessons learned" during their projects in order to learn from the project before it is done, and not wait until after the project is finished. He emphasises the fact that you can have more than one project in the organisation at the same time, and that it is important to have this experience available to other projects. A similar point is mentioned by Committee Member A in the same company, who mentions that they are working on making sure they are able to do a form of cross-learning from one department to another. If a suggestion is implemented in one department and it is successful, then that knowledge should be utilised by other departments and businesses.

Director A in Engineering Company B talks about how they try to follow up learning through the use of different measurements to try to gauge their efficiency. The learning needs to be part of the culture, but they still use the measurements to check if it is working and that they are learning and increasing their performance. Project Leader A and EVP A of the same company mention that since they are running multiple projects as a part of their business transformation project they use some of the same people in multiple projects in order to utilise the experience from each project at the same time.

One of the informants of Shipowner Company thinks that the oil crisis and the changes that have been made to the company following the crisis will create lasting change, and he hopes and thinks that the company will learn and be ready for new crises. It has not been implemented any formal processes for learning, according to the informant.

According to EVP A of Infrastructure Company A you have to have an attitude of:

"Not all projects succeed, but sometimes you have to launch big, complex projects, and we learn a lot from it. We get something out of it, it is maybe an expensive form of learning, but we got something out of it." (EVP A, Infrastructure Company A)

According to EVP A they have focused on the agile processes and the relation to the plan driven way of working and symbiosis between them. And given the people from both sides of the company a language to speak with each other.

According to EVP A of Infrastructure Company B too much of their strategic development happens in the strategic projects, and they are not good at looking at the totality and learning from these projects. This is something they are currently working on improving through changes being made by EVP B with creating a PMO. According to EVP A the company is bad at learning from changes and projects. They create final reports from projects, but they are put directly into some drawer and only the people directly involved in the project are able to bring that experience to the next project. According to EVP A they have an ambition to be able to learn from projects and changes, but they are not successful.

Chapter 6

Discussion of the Findings

This chapter is concerned with discussing the implications of our findings, and compare them to the theory from chapter 3 in order to further develop our framework for agile change management. We will first discuss each individual case, before we abstract the data in order to discuss key concepts related to agile change management.

6.1 Key findings

In this section we condense the data from chapter 5 into key findings from each change case. These key findings are used to identify the most important factors and variables to consider in the analysis in the next section. When selecting key findings we methodically summarised every paragraph in chapter 5 into keywords. Thus, the key findings represent all of our empirical data. The key findings from each case are presented in a series of tables. The tables are organised similar to 5 by dividing them into the five change aspects: context, drivers, content, process, and outcome. Note that some cells of some tables are left empty, as not every case has key findings from every aspect.

6.1.1 Infrastructure Company A: Transformation programme

The transformation programme case in Infrastructure Company A is one of the cases where the company has used an agile and continuous approach to change management, which is very similar to our agile change management framework. Because of this, one of the main takeaways

from the case data is their experience with the agile change. In particular, how they have designed their agile process based on experience and the prerequisites they have identified for agile change will be focus points in the analysis in section 6.2. Table 6.1 summarises the key takeaways which will be used in the analysis.

Aspect	Findings
Context	<ul style="list-style-type: none"> • Change is a continuous process because of unpredictable markets • Business change and technology development are closely related • Agile processes enable flexibility, and deal with uncertainty
Drivers	
Content	<ul style="list-style-type: none"> • Structural separation between agile units and the rest of the organisation • Understanding of Agile important for cooperation with agile units • Agile iterative processes improve efficiency, and help deal with uncertainty • Predictability is maintained by focusing all the agile change iterations toward a yearly goal • Processes are changed experimentally, using a lab for studying the processes • Agile processes require a culture for embracing uncertainty • Agile allows rapid response to changing customer demands • Standardised systems necessary for implementing and scaling small and rapid agile changes
Process	<ul style="list-style-type: none"> • Agile process with 90-day iterations working towards yearly goals • Fail fast implemented through iterations, prevents waste of time and resources • Yearly goals make it easier to measure success, which makes scaling easier • Managers need both planned and agile perspective • 90 day sprint goals work towards yearly goals, set by top management, which work towards a change vision • Yearly goals make resource allocation easier and make sprints easier to evaluate • Yearly goals a result of employee feedback • Goals balance cost and innovation aspects
Outcome	<ul style="list-style-type: none"> • Dedicated innovation budgets improve risk-taking in change, scaled up • Learning from failures

Table 6.1: Key findings: Infrastructure Company A: Transformation Programme

6.1.2 Infrastructure Company B: Increasing competition

One of the most important aspects for Infrastructure Company B, in regards to the increasing competition they are facing, is managing the uncertainty involved. Because of this, one of the main takeaways from this case will be the company's experiences with uncertainty including how they have dealt with the uncertainty and as the results of this strategy. The findings which will be used in the concept analysis are listed in table 6.2.

Aspect	Findings
Context	<ul style="list-style-type: none"> • Continuous adaption, not big leaps • Technology, business change and strategy closely related • Frustration due to uncertainty and lack of information • Easier to deal with uncertainty with experience and with scenario planning
Drivers	<ul style="list-style-type: none"> • Change driven top-down, because of low willingness to change • Experience with failed top-down driven processes, increasing focus on involvement • Experienced inter-disciplinary team for improving efficiency • Clear responsibilities are needed for change • Change goals are set by top management, and implemented locally by departments • Autonomy enables quicker change
Content	<ul style="list-style-type: none"> • Restructuring caused lack of direction and unclear responsibilities • Understanding for change reduces change resistance, and makes the change stick • Regular change reduces change resistance • Processes must be standardised and formalised to be changed
Process	<ul style="list-style-type: none"> • Desire for top-down transformation programme with clear direction and responsibilities • Uncertainty makes plan-driven approaches impossible • Management implements iterations based on a prioritised list of semi-annual goals, and reviewed monthly

	<ul style="list-style-type: none"> • Informal use of iterative processes and autonomous change teams further down in the organisation • Plans to formalise the iterative approach due to positive feedback • When facing uncertainty, change is implemented by starting small and scaling up • Large structural changes are implemented iteratively, with cycles of 2-3 years • Varying and different communication in the lower levels of the organisation • Feedback is not followed up on • Communication as a tool for creating understanding about changes to all levels in the organisation • Biweekly status meetings • Important that top-management understands the business sector • Continuous change difficult because of lack of concrete goals • Semiannual goals, working towards overreaching goals
Outcome	<ul style="list-style-type: none"> • Past failed change due to simple, cost focused top-down solutions • Lack of learning from projects due to no follow-up

Table 6.2: Key findings: Infrastructure Company B: Increasing competition

6.1.3 Infrastructure Company B: Increasing division performance

The case of increasing the division performance in Infrastructure Company B is an example of an evolutionary change process, where the overreaching goal is defined, but the specifics are unclear. The main takeaway for the concept analysis will, therefore, be focused on how Infrastructure Company has approached this kind of change. Our main findings from the case are listed in table 6.3.

Aspect	Findings
Context	<ul style="list-style-type: none"> • Continuous change important to get used to change • Involving unions makes implementation easier
Drivers	<ul style="list-style-type: none"> • Division dedicated to change creates clearer responsibilities, and improves cooperation between business units

	<ul style="list-style-type: none"> • Clear roles and ownerships of change projects • Localised change without totality creates silos
Content	<ul style="list-style-type: none"> • Structural change to clarify responsibilities • Agile change requires an agile culture and an agile mindset
Process	<ul style="list-style-type: none"> • The goal of the process emerges along the way through continuous discussions • Formalised evaluation after change project made easier by clear responsibility • Difficult to formally evaluate division performance, but important • Formal decisions by management team in cooperation with union • No clear goal of end product, goal emerging through discussions
Outcome	

Table 6.3: Key findings: Infrastructure Company B: Increasing division performance

6.1.4 IT Consulting Company: Experimentation

The focus of this case is, as the name of the case suggests, how IT Consulting Company uses experimentation in its change management. The specifics of the experimentation process and the way it is used are particularly important findings. The key findings are listed in table 6.4.

Aspect	Findings
Context	<ul style="list-style-type: none"> • Continuous process to deal with uncertainty • Agile company • Culture for employee participation • Norwegian model as competitive advantage • "Tyranny of the majority" • Flexible, enabled by small size • Focus on handling uncertainty by iterative experimentation
Drivers	<ul style="list-style-type: none"> • Complete autonomy for smaller changes, but need approval for larger change projects • Changes often implemented democratically, through negotiations and involvement
Content	<ul style="list-style-type: none"> • Impossible to make people change unless they understand the change • Specialisation in one technology may reduce flexibility

	<ul style="list-style-type: none"> • Formalised and successful process for continuously evaluating the market
Process	<ul style="list-style-type: none"> • PDSA-cycles to iteratively experiment and implement change • Experimentation lacks structure, evaluation, scaling and communication • Potential contracts are evaluated iteratively • Early broad communication and involvement allow feedback • Feedback central to cyclic change • Evaluation makes successes visible • Continuous evaluation to make sure the change sticks • Lack of scaling due to unclear communication • Informal decision processes based on involvement which reduce bureaucracy • Manager's main task is to facilitate • Change goals set by management, implemented locally
Outcome	

Table 6.4: Key findings: IT Consulting Company: Experimentation

6.1.5 Production Company: Loss of customers

One of the interesting factors concerning Production Company's reaction to the oil crisis is that they, unlike most of the other case companies, were relatively prepared for it. One of the insights from this case will, therefore, be related to how they diversified their product portfolio ahead of the crisis in order to mitigate the risk for market crashes. The most relevant data is presented in table 6.5.

Aspect	Findings
Context	<ul style="list-style-type: none"> • Involvement reduces change resistance • Oil sector did not want to see the oil crisis • Diversification before the crisis hit, experiences from previous crises • Low power distance, and trust in the management
Drivers	<ul style="list-style-type: none"> • Understanding for downsizing
Content	

Process	<ul style="list-style-type: none"> • Close, long term relations built on mutual trust with partners • Honest and open communication important when dealing with crises • Trust important and makes unpopular decisions easier
Outcome	<ul style="list-style-type: none"> • Continuity in management allows for learning from earlier crises and mistakes

Table 6.5: Key findings: Production Company: Loss of customers

6.1.6 Production Company: Research

The research case in Production Company is interesting, as it provides data on experimentation, evolutionary change, and dealing with uncertainty, among other subjects. The key findings from the case are presented in table 6.6

Aspect	Findings
Context	<ul style="list-style-type: none"> • Continuous change to adapt to an ever-changing market • Technology development is central to change • Change through innovation in order to stay ahead of the market • Necessary to innovate in high-cost countries • Involvement creates willingness to change • Focus on flexibility, enabled by small size • Focus on long-term results and not quick earnings, enabled by private ownership
Drivers	<ul style="list-style-type: none"> • Experienced employees help forming the company strategy • Lack of strict routines drives innovation
Content	<ul style="list-style-type: none"> • Use of research projects for marketing and building relationships to potential customers • High-risk projects allow staying ahead of the market
Process	<ul style="list-style-type: none"> • Loose plans to deal with uncertainty and utilise knowledge gained • Gradually up-scaled deliveries to a customer, which also gradually evolved company strategy over time • Flexible process, for adjusting to the market • Use of the research projects to experiment with products, markets and technology • Fail fast in order to be able to compete • Experimenting involves financial risk

	<ul style="list-style-type: none"> • Customers know more about their own markets • Informal evaluation during projects • Lack of formal involvement-based evaluation after projects • Project decisions made informally, but criteria based, by top management • Desire for more formalised criteria based project decisions
Outcome	<ul style="list-style-type: none"> • Unexpected macro-economical changes led to failed project • Learning from both successful and unsuccessful projects to build knowledge base

Table 6.6: Key findings: Production Company: Research

6.1.7 Shipyard Company: Suggestion system

The suggestion system from Shipyard Company is interesting first and foremost because it exemplifies a continuous change process based on experience driven by employees. 6.7 shows the most important of the findings from the case.

Aspect	Findings
Context	<ul style="list-style-type: none"> • Involvement is a prerequisite for improvement • Suggestion committee lead by union, union responsible for follow-up
Drivers	<ul style="list-style-type: none"> • Suggestion system enables employee-driven change, based on experience
Content	
Process	<ul style="list-style-type: none"> • Follow-up enables change based on feedback • Evaluation enables scaling of successful changes • Suggestions evaluated against goals set by management
Outcome	<ul style="list-style-type: none"> • System works and is used by both engineers and operators • Budgeted amount of money to spend on change is important • Cross-learning requires formalised learning mechanisms

Table 6.7: Key findings: Shipyard Company: Suggestion system

6.1.8 Shipyard Company: Transformation project

The transformation case in Shipyard Company is a case where several informants believe that better feedback mechanisms could have improved the change process. The main findings from the are, therefore, related to the factors which delayed the process, and on the measures the management has taken to improve these. The key takeaways from the data are presented in table 6.8

Aspect	Findings
Context	<ul style="list-style-type: none"> • New products as response to the crisis • Employees want more involvement in the process
Drivers	<ul style="list-style-type: none"> • Transformation driven top-down, but recently more focus on involvement • Clear responsibilities, involvement and ownership speed up change
Content	<ul style="list-style-type: none"> • Processes must be standardised and formalised to be changed • New technology allows facing future market situations • Diversification of product portfolio, • Change towards product requiring multi-disciplinary competences
Process	<ul style="list-style-type: none"> • Lack of competences led to loss of contracts • Formal evaluation through gate reviews was not used in the transformation project <ul style="list-style-type: none"> • Formal evaluation during change projects, enables experience transfer between projects
Outcome	<ul style="list-style-type: none"> • Formalised learning process to learn during projects

Table 6.8: Key findings: Shipyard Company: Transformation project

6.1.9 Shipowner Company: Reaction to oil crisis

Shipowner Company is the case company with arguably the most passive reaction to the oil crisis. The reason for this, is the company's strategy of not actively pursuing alternative markets, and their financial standing. This finding, as well as the causes and consequences related to it, will be used in the concept analysis. The main findings are presented in table 6.9.

Aspect	Findings
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Context	<ul style="list-style-type: none"> • Change is focused on taking and holding market positions • Cannot change, limited by their financial situation • Did not see the crisis, in spite of warning signals • Advanced/specialised ships necessary to compete • Specialisation reduces flexibility • Could have diversified the fleet more • Focus on surviving the crisis, unable to position for the future • Short-term view, due to competitive market • Did not react to uncertainty, hoped the crisis would blow over
Drivers	<ul style="list-style-type: none"> • Downsizing driven top-down • Moving towards more involvement • New change management teams enable involvement and inter-disciplinary
Content	<ul style="list-style-type: none"> • Sold and laid-up ships, and downsized across the company • Does not actively pursue contracts outside the oil sector, but an opportunistic approach
Process	<ul style="list-style-type: none"> • Close collaboration with partners allows rapid change • Employees realised the imminent down-sizing before it was formally communicated • Recently started having weekly status meetings • Purely focused on cutting costs, due to economic situation
Outcome	<ul style="list-style-type: none"> • No formal processes to learn from crises

Table 6.9: Key findings: Shipowner Company: Reaction to oil crisis

6.1.10 Engineering Company A: Restructuring

The rapid restructurings in Engineering Company A is seemingly the most unsuccessful case of continuous change we study. The main takeaways from this case will be focused on the factors that seemingly caused the restructurings to be unsuccessful. These factors are presented in table 6.10

Aspect	Findings
Context	<ul style="list-style-type: none"> • Decisions made by top management, little involvement

	<ul style="list-style-type: none"> • Short-term view, focus on profit-related KPIs and stock market impact
Drivers	<ul style="list-style-type: none"> • Top-down approach necessary in order to see the entire picture • Experienced middle managers are unable to influence the changes
Content	<ul style="list-style-type: none"> • Several internal splits, department merges, and downsizing over time • Unsuccessful post-merger integrations • Differences in culture and processes made integration harder • Employees feel unprioritised • Centralised administration gives economies of scale, but increases complexity
Process	<ul style="list-style-type: none"> • No time for evaluation between restructurings • Need for managers who understand the sector
Outcome	<ul style="list-style-type: none"> • Unsuccessful restructurings due to a top-down implementation • Lack of learning due to lack of continuity in a management driven by short term goals • Lack of learning due to lack of involvement

Table 6.10: Key findings: Engineering Company A: Restructuring

6.1.11 Engineering Company A: Transformation project

Engineering Company A's transformation project is one of the cases where the Norwegian model has seemingly not been followed to a great extent when reacting to the oil crisis. In addition, the process has been driven top-down. The main findings from this case are focused on the results of this strategy. The most relevant findings from the case are presented in table 6.11.

Aspect	Findings
Context	<ul style="list-style-type: none"> • Change is sequential and plan-driven • Did not see the oil crisis • Did not diversify, because of large margins in oil • Specialised niche market, difficult to find similar markets • Down-sizing not in compliance with the Norwegian model • Moving towards the Norwegian model • Strict procedures reduce flexibility
Drivers	<ul style="list-style-type: none"> • The transformation programme is driven top-down

	<ul style="list-style-type: none"> • Experienced engineers are key to capturing new markets • Those responsible for change want/need the authority to carry it out • Autonomy creates risk for silos, need for governance
Content	<ul style="list-style-type: none"> • Downsizing is hard on middle managers • In order to change, one has to change the way people work
Process	<ul style="list-style-type: none"> • Three-step sequential process for implementing change • Mix of opportunistic and planned approach to finding new markets, adjusts the plan to successful opportunistic projects • Strong environment for collaboration in the Maritime sector • Need to be close to the market to deal with uncertainty • Continuous formal evaluation during the project • Evaluation between phases creates confidence • Need for cost focus in good periods, to handle crises • Cost reduction as primary goal, reducing bureaucracy as secondary goal
Outcome	

Table 6.11: Key findings: Engineering Company A: Transformation project

6.1.12 Engineering Company B: Reaction to oil crisis

On the contrary to Engineering Company A, Engineering Company B has focused on employee involvement in its reaction to the oil crisis. In addition, Engineering Company B has a long-term strategic view, as cost reductions are balanced with investments in innovation, in order to position the company for the future. These factors will be key in the concept analysis in the next section. The main findings of the case are presented in table 6.12.

Aspect	Findings
Context	<ul style="list-style-type: none"> • Did not see the crisis coming • People have to practice change to accept it • Focus on innovation, sales and cost cutting • Balance short-term and long-term goals, enabled by private ownership

	<ul style="list-style-type: none"> • Involvement and communication are keys to change • Union and management on the same team • Entering new markets involve challenges with uncertainty
Drivers	<ul style="list-style-type: none"> • Experience key to adapt in cyclic industries • Team dedicated to find new markets • Union drives structural change, able to discover need for change quicker than management
Content	<ul style="list-style-type: none"> • Downsizing and change in general is made easier by clear communication, honesty, and understanding • Innovation requires knowledge, drive, and authority • Technology enables entering new markets
Process	<ul style="list-style-type: none"> • Desire to use gradual processes, but not possible in downsizing due to time constraints • Time constraint limits evaluation during projects, but try to learn afterwards • Communication deteriorates on the way down and up the organisation • Change failure often caused by lack of communication and involvement • Trust and direct communication between union and top-management • Need for managers to understand the sector • Cost focus in good times as well • Does not only manage based on financial instruments, but also long-term indicators
Outcome	<ul style="list-style-type: none"> • Unsuccessful change often due to bad implementation • Learning needs to be part of the culture • Make sure the organisation is learning through measurements

Table 6.12: Key findings: Engineering Company B: Reaction to oil crisis

6.1.13 Engineering Company B: Transformation project

The transformation project in Engineering Company B is another example of an agile change process seemingly similar to our own framework. The key takeaways from the case are related to Engineering Company B's framework for agile change management, and the aspects of it that can be used to develop our own framework. The key findings from the case are presented in

table 6.13.

Aspect	Findings
Context	<ul style="list-style-type: none"> • A continuous agile change process ensures flexibility and clear responsibility • Change and technology closely related • Broad involvement • Flexibility enabled by close coupling between technology and business
Drivers	<ul style="list-style-type: none"> • Multi-disciplinary teams key to see the entire picture • Agile project structure with clearly defined responsibilities and ownerships • Autonomous team with support from the top-management
Content	<ul style="list-style-type: none"> • Processes in the transformation project are changed in order to become more agile • Changes involving culture take longer time than expected
Process	<ul style="list-style-type: none"> • Agile process with sub-goals, iterations, and feedback in order to adjust to unforeseen changes • System for direct feedback • Formal handover with evaluation between project phases • Frequent status meetings with all sub-projects • Communication important when dealing with uncertainty and the resulting frustration • Daily stand-up meetings • Interface between line-organisation and business-side as success factor for change • Managers as facilitators in the change processes • Goals (backlog) broken down into measurable actionable items implemented in sprints
Outcome	

Table 6.13: Key findings: Engineering Company B: Transformation project

6.2 Concept analysis

Based on our key findings presented in the previous section we created *causal networks*, as described by Miles and Huberman (1994) and discussed in section 2.4. These networks can be found in appendix A. From these causal network models we created aggregated models, each

focusing on one key concept identified by the causal networks. The key concepts were chosen based on the variables in the case networks that had the most impact, and the most relations to other variables. In this way, the aggregated networks should cover most of the relations from the initial case networks in appendix A. The aggregating is done by finding all elements related to a given key concept across all of the cases, and illustrating these relations in one aggregated model, as discussed in section 2.4. In this section we present all our aggregated models, and discuss the different elements and relations in them based on the literature presented in chapter 3.

We first present the concept of Agile in general. This will serve as a basis for discussing most of the other concepts. Then, we present the other concepts ordered by the five aspects of change: context, drivers, content, process and outcome. Some of the concepts will, however, cover multiple aspects.

6.2.1 Agile

One of our most important findings is that several of our case companies use variations of agile change management. Infrastructure Company A and Engineering Company B both use the terminology 'Agile' to describe their change management methodology, and use frameworks similar to the one we proposed in our project thesis. In addition, several of the other case companies use elements of Agile to manage change. Figure 6.1 summarises all of our findings related to Agile, from all of the companies. The figure is derived by aggregating all relations related to 'Agile' and "Agile Processes" from the relation models presented in appendix A.

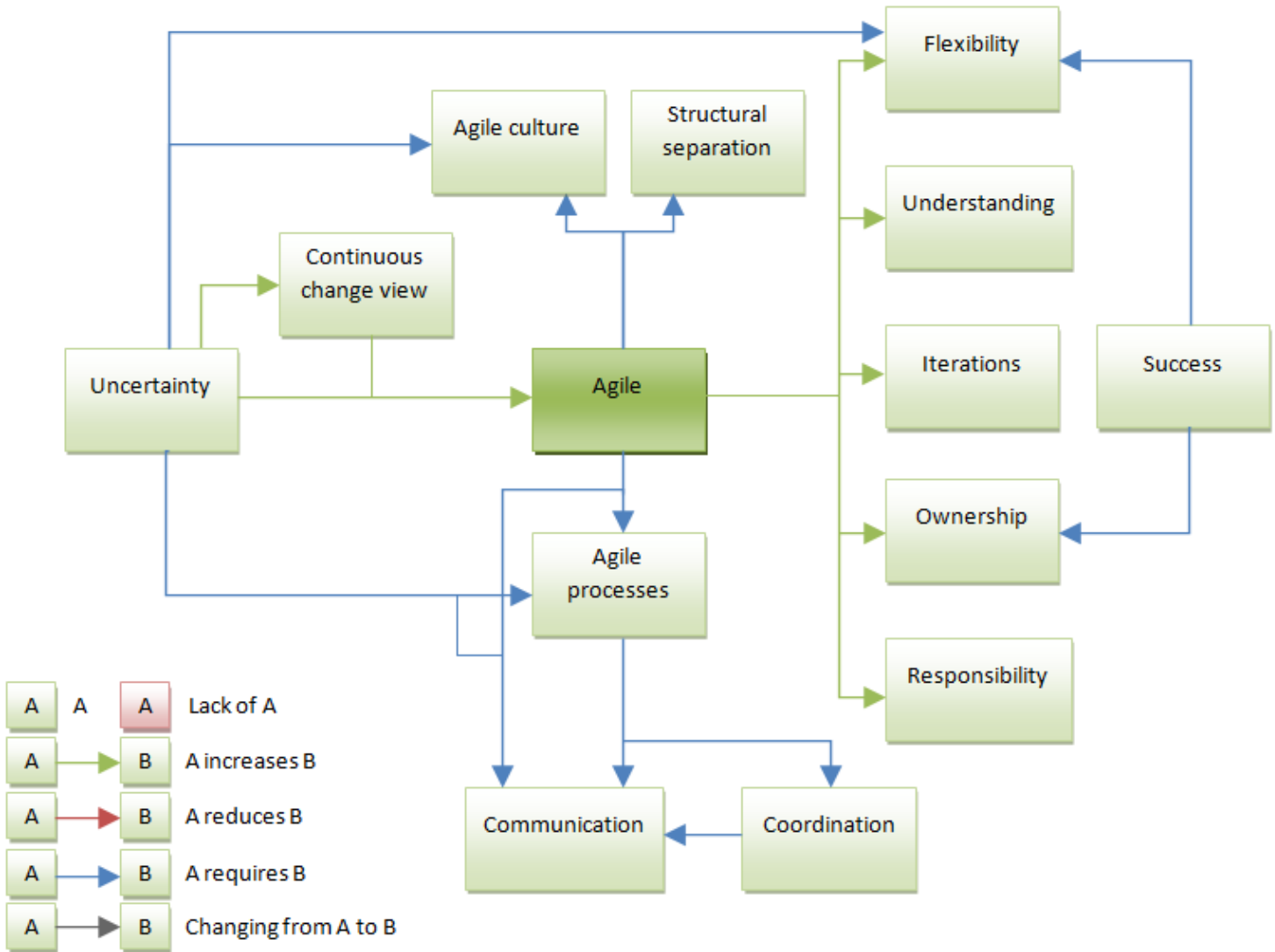


Figure 6.1: Agile

One of the findings from the companies that use agile change management, was that just implementing agile processes for change management is not enough. In order to use Agile, one has to have an agile culture as well. This is apparent from figure 6.1, in that Agile requires both an agile culture, and agile processes. This finding corresponds with the literature on Agile discussed in section 3.3.7. Denning (2016) and Sahota (2012) argue that Agile is more than a set of methodologies, and one needs the culture as well in order to gain the benefits of Agile. As discussed in the same section agile culture is mapped into "Cultivation", "Collaboration" and "Competence", and Sahota (2012) argue that cultures with a degree of these elements is fit for

Agile. The main focus for agile culture among our informants seem to be about accepting uncertainty, being used to change as a regular event. Using the definition by [Grendstad \(1997, p.124\)](#) of culture¹ presented in section 3.3.7, the agile culture seemingly consists attitudes focused on the following: accepting uncertainty, accepting regular change, learning, freedom, working together with common goals, seeking to make a contribution and most likely several other factors. The social relations aspect of the agile culture on the other hand is focused on: everyone being equals, trust, cooperation, communication and probably more factors. This seems to be relatively close to the values of the Norwegian model, which could explain why the companies we studied seemingly had cultures similar to the agile culture. It should be noted that our basis for characterising the culture of our case companies is relatively limited, due to our relatively small sample size within the companies, a limited time-span, and culture not being the main focus of our empirical work. However, we argue that we are able to gain an impression and observe differences between the companies, and that this culture is most likely not present in all our case companies.

Another factor which was found to be required for Agile is structural separation, as shown in figure 6.1. This means that the agile parts of the organisation have to be structurally separated from the rest of the organisation due to the fundamentally different way of working. This is apparent from the experiences of Infrastructure Company A, in that structural mechanisms were needed to allow the agile parts of the organisations to cooperate with the plan-driven parts of the organisation efficiently. In this way Infrastructure Company A has created a structural barrier between the agile and the plan-driven departments of the company, in a way similar to what [Englehardt and Simmons \(2002, as cited in Tan and Tan, 2005\)](#) suggest. [Englehardt and Simmons \(2002, as cited in Tan and Tan, 2005\)](#) propose that an organisation can have two different layers, where flexible teams are separated from the plan-driven operational level, as discussed in section 3.2.4. [Sahota \(2012\)](#) suggests that a separation between the agile part and the rest of the organisation is necessary for adopting Agile in parts of an organisation where the rest of the organisation does not have an agile culture. This solution to adopting Agile was discussed in section 3.3.6. The example from Infrastructure Company A shows that it is possible to have

¹Culture is about attitude and ideologies on one side, social relations on the other, and where these two sides mutually support each other one can speak of culture as a way of living.

different management systems in the same organisation as Dawson (1996) suggests, as seen in 3.3.6. The concept of structural separation is also apparent in Infrastructure Company B, in that they chose to separate a 'project department' from the rest of the organisation, to enable them to work more flexible and to clearly define their role in the organisation.

The final factors shown in figure 6.1 to be requirements for Agile, are communication and coordination. Several informants argue that good communication is necessary to implement changes, but it is difficult to achieve in practice. Communication is discussed in-depth in section 6.2.12. Coordination is also shown important for the agile processes, as different iterations and sub-projects have to be closely coordinated. An example of this is the transformation project in Engineering Company B, where informants point to both close communication and coordination as success factors for the project.

One variable shown to be closely related to Agile in figure 6.1, is uncertainty. This is not surprising, as the agile methodology is designed to handle uncertainty, as discussed in section 3.3. As shown in the figure, informants from our case companies claim that agile culture, agile processes, and flexibility are all required when changing under uncertain environments. The reason they give for this is that it is impossible to manage change in a plan-driven fashion when dealing with a certain degree of uncertainty, because the change process needs to be able to adapt to the uncertain and changing environments. This notion is also reflected in the literature, as discussed in section 3.3, Agile is found to be well-suited for managing change in uncertain environments. Uncertainty will be discussed further in the next section.

Some of the possible effects of using agile change management, identified from the change cases, are also shown in figure 6.1. These include a greater degree of flexibility, greater understanding for the change, and clear responsibility and ownership for the change. The flexibility is mentioned by several informants as a success criteria, as it is required for changing under uncertain environments as discussed in section 3.2.4. Ownership to the change is also referred to as an important success criteria, as it can help reduce resistance to the change. These factors will all be analysed further later in this chapter.

6.2.2 Uncertainty

As discussed in the previous section, our analysis indicate that uncertainty is closely related to Agile, as it is the 'raison d'etre' for the agile methodology in that Agile was designed specifically to handle uncertainty. Our findings related to uncertainty are shown in figure 6.2. As shown in the figure, uncertainty requires an agile approach to change, while it makes plan-driven change significantly more difficult. This is, as discussed in the previous section, caused by the fact that it is impossible to plan for the unpredictable, and by the need for change processes which are able to adapt to the changing environment.

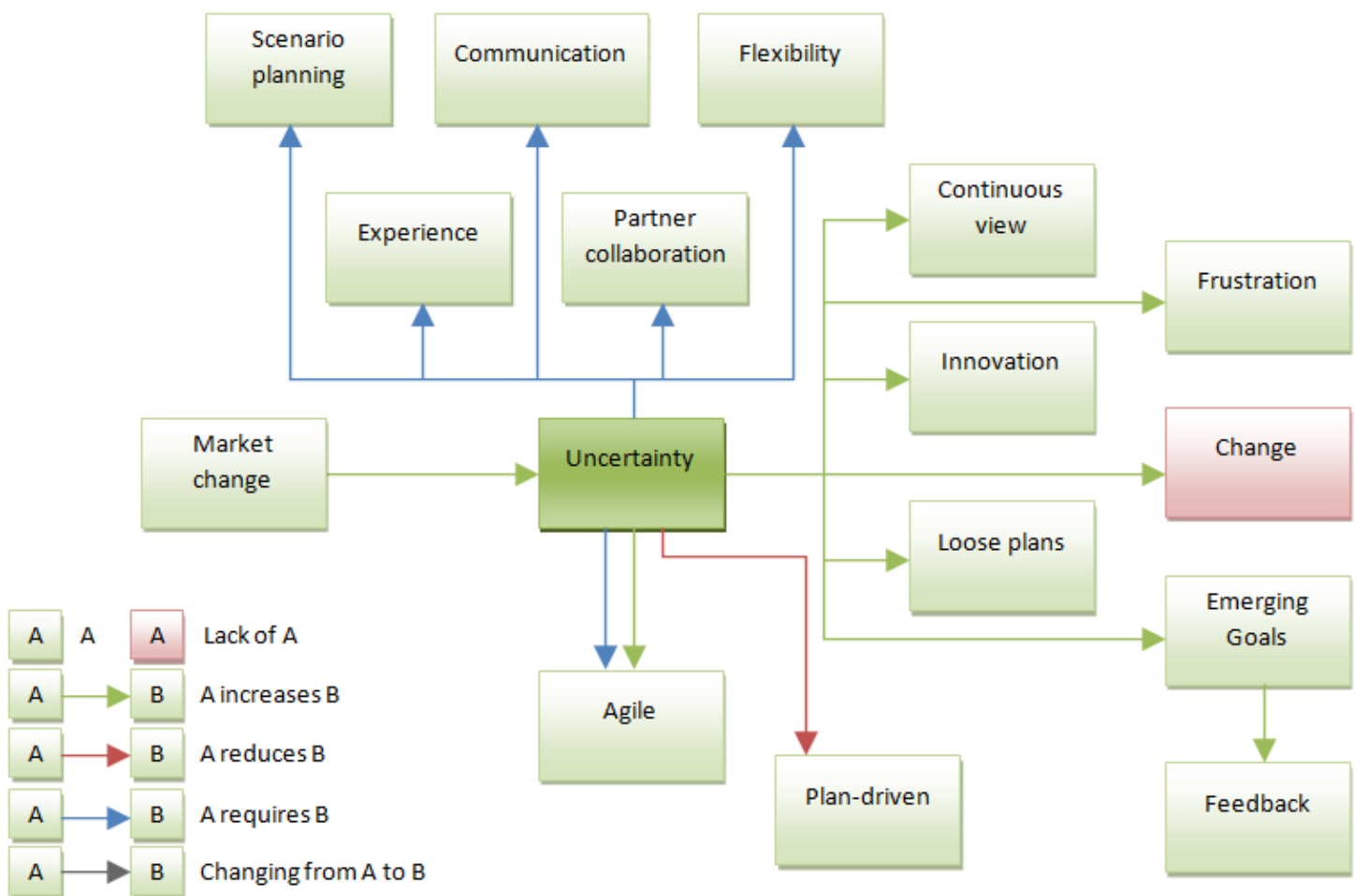


Figure 6.2: Uncertainty

As shown in figure 6.2, five different elements were identified as requirements for change during uncertain environments, aside from an agile mindset. These are: good communication,

flexibility, scenario planning, experience, and partner collaboration. As discussed in the previous section, communication is key to all types of change, but it is particularly important under uncertain environments due to the frustration caused by uncertainty discussed in section 3.1.8. Communication will be discussed further in section 6.2.12.

Flexibility is key to manage change in uncertain environments, because the company needs to be able to quickly adapt to changes, as discussed in section 3.2.4. This is also apparent from our findings, as several informants emphasise the need for flexibility when facing uncertainty. How this flexibility can be achieved is discussed in the next section.

Scenario planning is actively used by Infrastructure Company B, because of the uncertainty they are facing. By planning for different scenarios, they can quickly adapt when more information is acquired. This scenario planning is similar to the hypothesis planning that D'Souza and Renner (2016, p.248-252) propose, as discussed in section 3.2.6. They argue that by using several hypotheses, or planning for several different scenarios, one avoids jumping to conclusions.

Several informants from different companies claim that experience was key for them when dealing with uncertainty. An example of this is Production Company, that diversified its product portfolio before the oil crisis hit, because they had experienced similar crises before, and learnt from them. They argue that both learning and a continuity in the management are important factors that enable the company to deal with unpredictable and changing markets. As discussed in section 3.3.2 there is an increasing need for systematic learning from change. This will be further discussed in section 6.2.15

Finally, close partner collaboration is also found to be a requirement for handling uncertainty. As one informant from Production Company argues, the partners know their own markets best. Thus, a company which collaborates closely with its partners will be able to react and adapt quickly to changes in its partners' markets. As discussed in section 3.2.4, Byrkjeflot (1997, p.11-13) argues that Norwegian companies need the knowledge of their customers for handling uncertainty. According to Rigby et al. (2016) and Dingsøy et al. (2012), close customer collaboration is a central aspect of agile, as discussed in section 3.3.5. Thus, close collaboration with business partners appears to be important for managing agile change in uncertain environments. However, this will not necessarily be applicable for all types of changes.

Our findings suggest that uncertainty to a certain degree forces companies to adopt a con-

tinuous view on change, which is shown in figure 6.2 as one of the outcomes from uncertainty. The reason for this is that it is difficult to plan out clearly defined change initiatives when the market situation at the end of the initiative is unknown due to the uncertainty. Informants from both Infrastructure Company A and Production Company argue that such change initiatives are often rendered useless at the end of the process, because the market situation has changed along the way. Instead, the companies have to continuously adapt to the unpredictable changes in the environment. This is reflected in section 3.2.2, where we discuss how it is impossible to make detailed plans when the future of the market is characterised by a large degree of uncertainty. Thus, it seems like uncertainty forces companies to have an emergent change strategy perspective as opposed to a deliberate perspective when considering the paradox of deliberate and emergent change, discussed in section 3.1.2.

We also find that uncertainty makes innovation more important, as shown in the figure, as it helps with continuously adapting to the changing market. This continuous adaptation will help managing the uncertainty, because as previously discussed, an emergent change perspective is necessary when dealing with uncertainty. Similarly, loose plans and emerging goals based on feedback are other mechanisms that can be used to deal with the uncertainty, as shown in the figure.

The two final outcomes of change in uncertain environments that were found and shown in the figure, are frustration and inaction. It was apparent that the uncertainty many of the case companies are facing caused frustration among both employees and managers, to varying degrees. This is not surprising, as D'Souza and Renner (2016) state that changing without knowing is uncomfortable, while Lecraw (1992) states that it is natural to fear the unknown, and to be concerned when the future is uncertain. According to Lecraw (1992) and van den Heuvel et al. (2013) communication and involvement are key factors for reducing frustration caused by uncertainty, as discussed in section 3.1.8. Communication and involvement will be further discussed later in this chapter.

Shipowner Company did not actively change or adapt in response to the oil crisis, as they hoped the crisis would blow over quickly. This could be explained by several factors. One is by a fear of the unknown, as discussed in sections 3.1.8 and 3.2. This fear of the unknown can lead to passivity, paralysis and change inertia, as one does not know what to do. A related factor, is

the fear of failure. However, this fear may be legitimate if the consequences of failure are big enough. As discussed by [Rigby et al. \(2016\)](#) an experimental (agile) approach is suited when the impact of interim mistakes are relatively low, and there is a possibility of learning from these. Being a shipowner the consequence of making the wrong decision in response to a crisis is severe. Due to the financial impact of investing in ships which they are not able to gain value from, an experimental approach seems less suited for shipowners. An alternative seems to be a proactive diversification in the form suggested by [Eppink \(1978\)](#) where different departments are dependent on different markets. In practise, this would involve diversifying the fleet, so that it would not be as exposed to the oil industry. Even though this would not necessarily be the most profitable short-term strategy, it could help to proactively decrease the effects of crises in a cyclic market. This discussion is outside the scope of this thesis.

6.2.3 Flexibility

As discussed in the previous section, flexibility is found to be a requirement for changing in uncertain environments. [Figure 6.3](#) shows that flexibility is found to be required for changing in uncertain environments, and for changing along with a market in change. One informant goes so far as to claim that flexibility is a success factor for change in general. In this section we discuss the factors we found to both increase and prevent flexibility, shown in [figure 6.3](#).

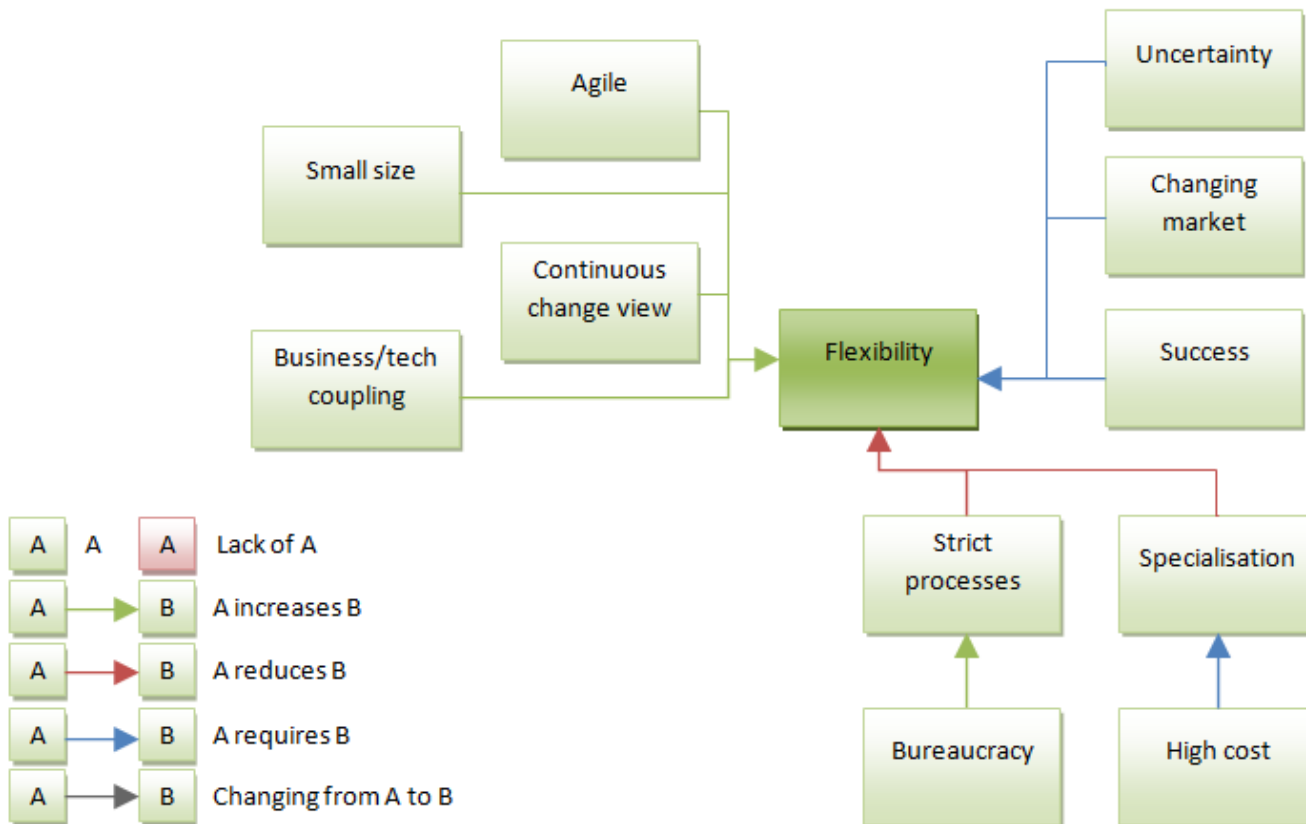


Figure 6.3: Flexibility

We identified four different factors from our findings that helped increase the flexibility of our case companies. These factors, as shown in figure 6.3, are Agile, a continuous view of change, a close coupling between the business and technology departments of the organisation, and a small size. First of all, informants from the companies that have adopted agile change management claim that Agile provides more flexibility than traditional, plan-driven change management. They argue that the use of iterations enables them to respond quickly to changes. This is not surprising, as it is this flexibility that enables Agile to deal with uncertainty, as previously discussed.

A continuous view on change also helps increase flexibility in a similar way, as it involves continuously adapting to a changing market. This also enables quick change, because the company is focused on continuously changing rather than holding a certain market position. View on change will be discussed in-depth in the next section. As discussed in section 3.2.4, flexibility is closely related to an emergent and continuous view on change. The discussion implies

that flexibility enables strategic emergency. However, the informants in our study seem to suggest that the relation is the other way around, where they view change and change management as an ongoing activity, in accordance with the view of Dawson (1996). According to the informants, this results in flexibility. Thus, it appears that flexibility and strategic emergence are self-reinforcing factors. Flexibility enables emergence, while emergence requires flexibility.

In order to be able to continuously adapt to the market in this way, several of our informants argue that a close coupling between business departments and technology departments are necessary. This seems closely related to the idea behind BizDev (Fitzgerald and Stol, 2015) as presented in section 3.3. With this close coupling, the business side of the organisation is able to quickly adapt to technological shifts, while at the same time the technology departments are able to develop new technologies that fit the company's business model and market position. Because of this, several of the case companies have established multi-disciplinary change teams with both business and technology competences. These multi-disciplinary teams will be discussed further in section 6.2.9.

A small size can also enable flexibility. Production Company is an example of this, as informants argue that one of the reasons they are able to quickly change and adapt, is their relatively small size. Because they are small, they can change relatively easily, as communication and coordination are informal and direct. The same factor was also found in IT Consulting Company, where informants similarly state that they would have been less flexible if they were larger, as coordination would be more difficult.

As a consequence of a small size being advantageous in achieving quick changes, it seems like bureaucracy and strict processes can be detrimental to a company's flexibility, as shown in the figure. We found that bureaucracy was problematic for implementing quick change in several of the case companies. An example of this is Engineering Company A. Reducing bureaucracy to enable more efficient change is a major goal for them. In order to accomplish this, they have removed an entire layer of management to make processes more efficient. This finding is expected, as several sources indicate that hierarchies and bureaucracy reduce flexibility, as discussed in section 3.2.4.

Another factor we found that could limit a company's flexibility, is specialisation. An informant from Engineering Company A argues that they have difficulties adapting to market

changes, because they are specialised on a niche market. This makes entering new markets difficult, as their competences are not necessarily suited for other markets. This is an important factor to consider in a Norwegian context, as we also found that this kind of specialisation is needed in high-cost countries like Norway to be able to compete. Informants from both Production Company and Engineering Company A argue that this is a necessity. Production Company has, however, managed to stay flexible by continuously innovating and thus staying ahead of the market. In this way, their specialisation on high-tech production methods has not limited their ability to adapt. This is a very interesting finding, as [Byrkjeflot \(1997, p.11-13\)](#) argues that flexibility is particularly important for Norwegian companies because they are so specialised. Thus, it might seem like specialisation requires flexibility, while also making flexibility more difficult. This indicates that flexibility is a very important success factor for Norwegian companies, and may imply that they have to find other means of increasing flexibility than diversification. As discussed in this section, Agile can provide Norwegian companies with an alternative way of achieving this flexibility.

6.2.4 View on change

As we have seen in this chapter, a continuous view on change is found to be closely related to agile change management and uncertainty. As discussed, a continuous view on change can help companies become more flexible, as it involves continuously adapting to an unpredictable market. [Figure 6.4](#) shows these relations that were found in our cases.

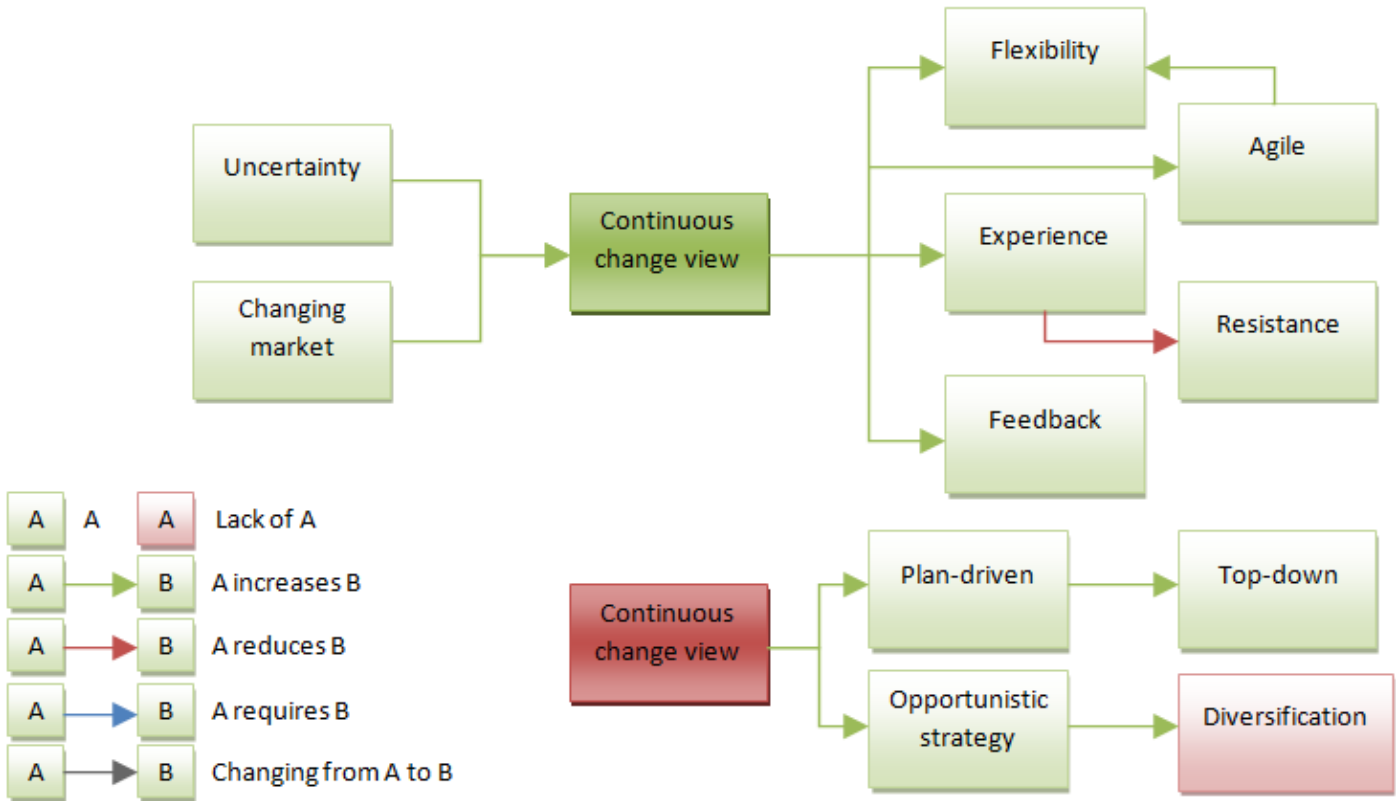


Figure 6.4: Change view

Figure 6.4 shows how uncertainty and changing markets increases the need for a continuous view on change, which again enables agile change and flexibility, as previously discussed. The figure also shows three other possible outcomes of a continuous change view that were found in the different change cases: Experience, feedback, and less change resistance.

Several informants argue that continuous change ensures that employees get used to change. This experience with change could make changes easier to implement, and informants argue that it reduces change resistance. This can be seen as a way of embracing uncertainty, as discussed in section 3.2.3 Thus, it seems like most of the companies adopt an evolutionary perspective to organisational development, as discussed in section 3.1.2, in that they prefer to continuously change and adapt rather than making larger, sudden changes. However, it is possible that continuous change could also be stressful for employees, regardless of how much experience they have with change. Thus, we argue that companies need to address this potential downside for employees through involvement and understanding. This will be further discussed in

sections 6.2.10 and 6.2.13. We also find that continuous change enables feedback in some of the cases, in that continuous change also allows for continuous feedback. Feedback will be analysed further in section 6.2.16.

The companies that did not view change as a continuous process, but rather as separate disconnected initiatives, tended to also have a plan-driven and top-down approach to change management, as shown in figure 6.4. This indicates that the companies that favoured the revolutionary side of the paradox of evolution and revolution, as described in section 3.1.2, also favoured the deliberate and control perspectives of their respective paradoxes.

One of the companies that did not continuously adapt also had a very opportunistic strategy. The company did not actively try to change in order to adapt to the oil crisis, but instead seized opportunities that presented themselves. The company did therefore not actively try to diversify its product portfolio, or enter new markets, but would take profitable contracts outside of its usual area of expertise if faced with the opportunity to do so. This seems to be a more reactionary approach. However, it is unclear if this is caused by the view on change or not.

6.2.5 Horizon

Another factor which was found to be central to change, was the strategic horizon of the case companies. In other words, how the case companies balanced long-term and short-term focus in their change processes. Our key findings related to change horizons are presented in figure 6.5.

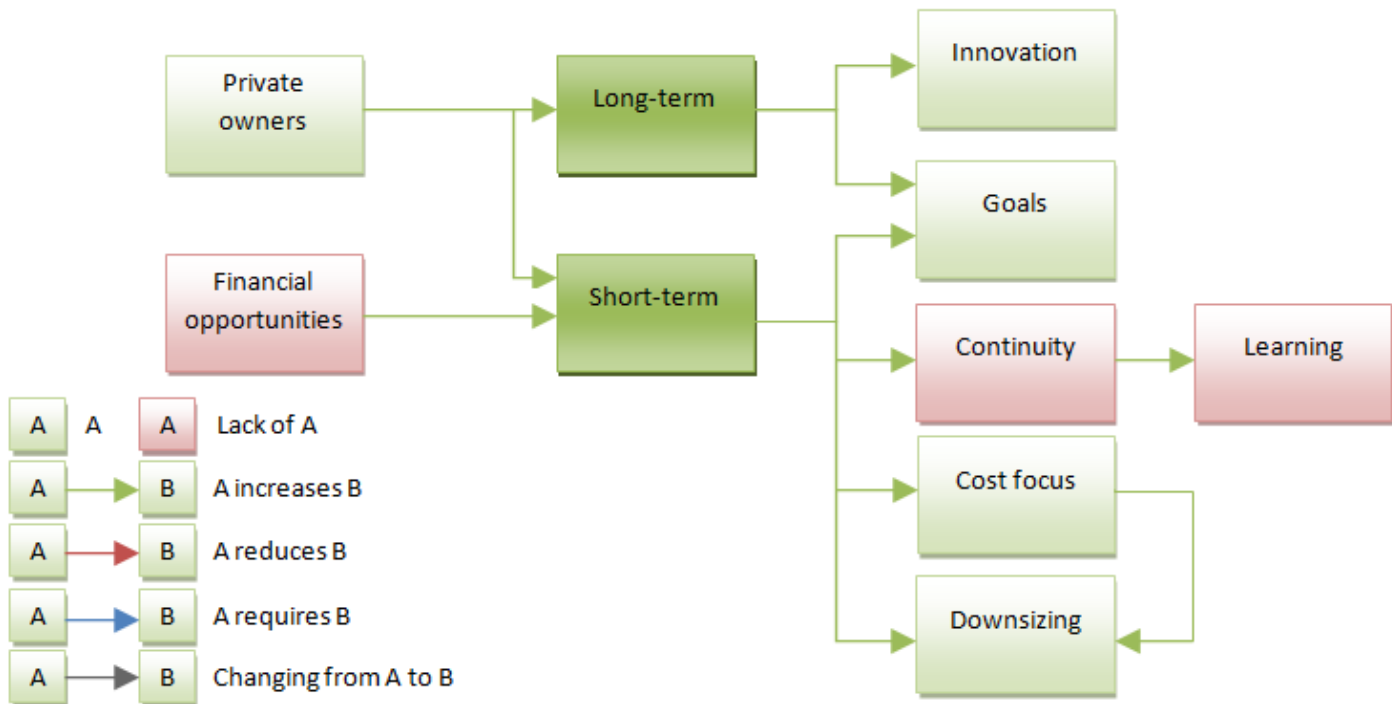


Figure 6.5: Horizon

As shown in figure 6.5, a company's balance of long-term and short-term focus is unsurprisingly reflected in the company's goals. Companies with short-term views and focus on immediate costs were found to have goals related to cost reduction and profit margins, while companies with more long-term views were found to have goals centred around innovation. Engineering Company B is an example of a company which have balanced long-term and short-term focuses when handling the oil crisis. This is apparent from their three goals; cost reduction, sales, and innovation. Here, cost reduction represents a short-term goal, while innovation is a goal that enables long-term positioning. These three goals seem to fit with the model [Brooks and Saltzman \(2016, p.72\)](#) propose, as discussed in section 3.1.7, where the companies need to measure current performance (cost reduction), future potential (innovation), and how the future potential can be turned into current performance (sales). Infrastructure Company A and Shipyard Company have both set aside a budgeted amount for change. As seen, Infrastructure Company A argue that it is hard to measure change only by current performance, and has therefore chosen this solution. While this means that they do not measure future potential as [Brooks and Saltzman \(2016, p.72\)](#) suggest, they do not measure long-term investments by short-term goals.

In Engineering Company A, their goals are, as discussed in section 5.4.10, primarily focused on cost. Their progress measurements are mainly focused on cost as well, with a secondary focus on measuring communication. Thus, they do not measure future potential as Brooks and Saltzman (2016, p.72) suggest. This might cause problems for Engineering Company A in the long-term, as much of their knowledge base and competences will be lost during the downsizing processes. As stated by Bossidy and Charan (2002, p94), "You get what you measure for". Thus, when Engineering Company A does not actively measure for future potential, they might end up losing future competitiveness.

A finding which shows the importance of a balance between short-term and long-term focus is that an excessive focus on short-term result can result in a lack of continuity, which again can prevent the company from learning. As we found in the restructuring case in Engineering Company A, a focus on short term efficiency caused a series of unsuccessful restructurings. These restructurings did not appear to have been seen in context of each other, but rather as a discontinuous set of separate initiatives. An indication of this is that the company did not seem to learn from one restructuring to the next. This might have been caused by a lack of long-term focus, and thus also a lack of focus on the bigger picture. As stated by Teare and Monk (2002), pressure to perform often overshadow opportunities to learn.

Many informants from different companies argued that private ownership can help enable this balance between long-term and short-term focus. This is because privately owned companies are not incentivised to focus on short-term financial results in the same way as listed companies are, due to their quarterly results affecting the company's stock value. This tendency was discussed in section 3.1.7. Here, we discussed how several sources claim that listed companies are incentives to forgo investing in long-term opportunities in favour of short-term results. As seen, Aspara et al. (2014) argue that this short-termism is caused by a feedback-loop in communication between managers and shareholders. Thus, it might be possible to break the cycle if managers consciously communicate the importance of long-term focus to their shareholders. Infrastructure Company A, a listed company, seems to do this with relative success, because, as discussed in 6.2.5, they have a balance between long-term and short-term goals. Several public sources that cannot be referenced in order to preserve anonymity, show that the company has communicated the importance of their long-term focuses, and that they might prioritise these

over short-term results. It can be argued that potential investors therefore expect the company to deliver weaker results in the short-term, and that this allows them to focus on the long-term opportunities.

Another factor that affects a company’s ability to focus on long-term goals, is the company’s financial situation. If the company’s financial opportunities are limited, then the company will to a certain degree be forced to prioritise short-term goals. An example of this is Shipowner Company, which is unable to position itself for future markets because of the financial impacts of the oil crisis.

6.2.6 Goals

As discussed in the previous section, a company’s goals will reflect the company’s balance of short-term and long-term focus. In this section we discuss different types of goals, and how they affect change. Figure 6.6 shows our findings related to change goals.

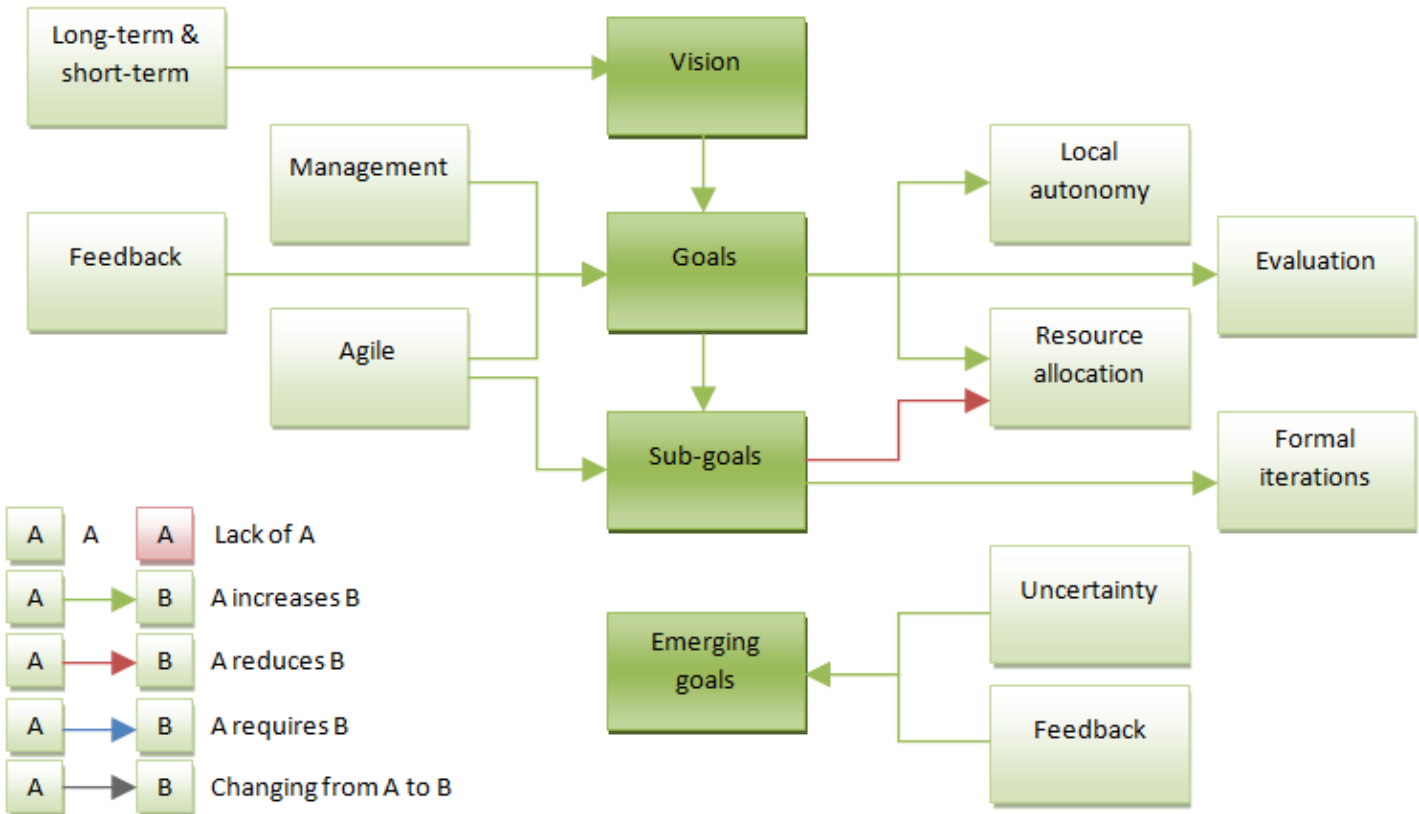


Figure 6.6: Goals

We found that many companies use different tiers of goals in their change project. When aggregating our data we therefore split goals into three different tiers shown in figure 6.6: visions, goals, and sub-goals. Here, vision represent an abstract change vision, that says something about what the company wants to change into, but that is not directly measurable. The goals are derived from the change vision. These are concrete, and allow the company to measure progress towards the change vision. Even though the goals are concrete and measurable, they can often be complex. Therefore, the goals can then be broken down into sub-goals, which are actionable items that are more straight-forward to implement. These three tiers are also based on [Bossidy and Charan \(2002\)](#), as discussed in section 3.1.6, who suggest breaking down goals based on time-frame. [Bossidy and Charan \(2002\)](#) argues that the three different tiers of goals need a connection between them, as it makes it easier to respond to changes that happen during the project ([Bossidy and Charan, 2002](#), p.227). Breaking the long term change vision into goals and sub-goals is hard, according to [Eriksen \(1997, p.397\)](#). One has to be careful and avoid creating too abstract goals which cannot be evaluated as discussed by [Eriksen \(1997\)](#) and [Bossidy and Charan \(2002\)](#). The process of creating these goals is outside the scope of this thesis.

In addition to the three tiers of goals, we also identified a separate type of goals; the emerging goals. This type of goals are used in for example the transformation project in Infrastructure Company B, where they are facing so much uncertainty that it is impossible to set conventional goals for the change process. Instead, the goals emerge along the way based on feedback, as shown in figure 6.6. In this case, the overall vision of the process is to increase performance in the division, but the goals and sub-goals are unclear. The creation of goals will emerge through continuous discussions between the stakeholders, according to the informants. This approach is similar to the "negotiation approach" ([Baldersheim and Øgard, 1997](#)) discussed in section 3.1.2, where the goals and sub-goals emerge through continuous cooperation between top-management, employees and the union. Thus, it can seem like involvement and cooperation with foundation in the Norwegian model can be important when companies are facing so much uncertainty that it is difficult to create goals.

The three tiers of goals were found to support agile change, as shown in the figure. Several companies that used variations of agile change management had goals set by management, while the sub-goals were defined by an agile change management team. Then, the team could

execute change iterations where each iteration implemented a sub-goal, so that all iterations worked towards the goals set by the management. We also found elements of feedback, meaning that the goals could be changed along the way based on experiences from earlier iterations. The three-tier goal structure was found to help create a sense of direction for agile units. In Infrastructure Company A they had, as previously discussed, first used a two-tier goal structure with 90 day iterations based on sub-goals, and a change vision. This led to frustration and lack of direction among the employees. [Bahrama \(1992\)](#) argues that organisations need to balance flexibility and direction in order to avoid confusion and stress for the employees. Similarly, [Lecraw \(1992\)](#) argues that an aspect of managing employee stress during change is clear goals and direction, while [van den Heuvel et al. \(2013\)](#) argue that employees need to be able to make sense of the changes. It seems like the gap between a vision and 90 day sub goals was too wide and that this led to frustration, stress, lack of direction and lack of meaning-making. Introducing one-year goals thus seem to have balanced the needs for flexibility and direction better in the context of Infrastructure Company A.

Another reason for having both goals and sub-goals when working in agile change iterations is resource allocation. Infrastructure Company A originally tried to have all iterations work toward the change vision, without concrete overall goals between the sub-goals of each iteration and their 2020 change vision. The result was that they had difficulty acquiring resources for the 90 days iterations, as resources in Infrastructure Company A are allocated on an annual basis. Therefore they incorporated yearly goals into their model, so that each iteration worked towards the yearly goal, which again worked towards the 2020 change vision. In this way it is easier to allocate resources to the agile change process, as the iterations are more structured and predictable.

Many informants from different companies argued that concrete and well-defined goals are important for evaluating the process after the change is implemented, as shown in the figure. Such evaluation will be discussed in section 6.2.15. The need for clear concrete goals in order to evaluate is supported by [Eriksen \(1997, p.397\)](#) as discussed in section 3.1.6.

Finally, goals set by management could also be used as a tool for top management to control change implemented locally. With independent and self managed departments, change goals can help the top management guide the direction of a change process, even if the change is

implemented locally by the department. Local autonomy will be discussed further in section 6.2.8.

6.2.7 Top-down

As discussed in section 6.2.4, while the companies with a continuous view on change tended to use agile methods for managing change, companies that do not view change as a continuous process tended to use plan-driven change management, and top-down control. This is shown in figure 6.7 along with the rest of our findings related to top-down change management.

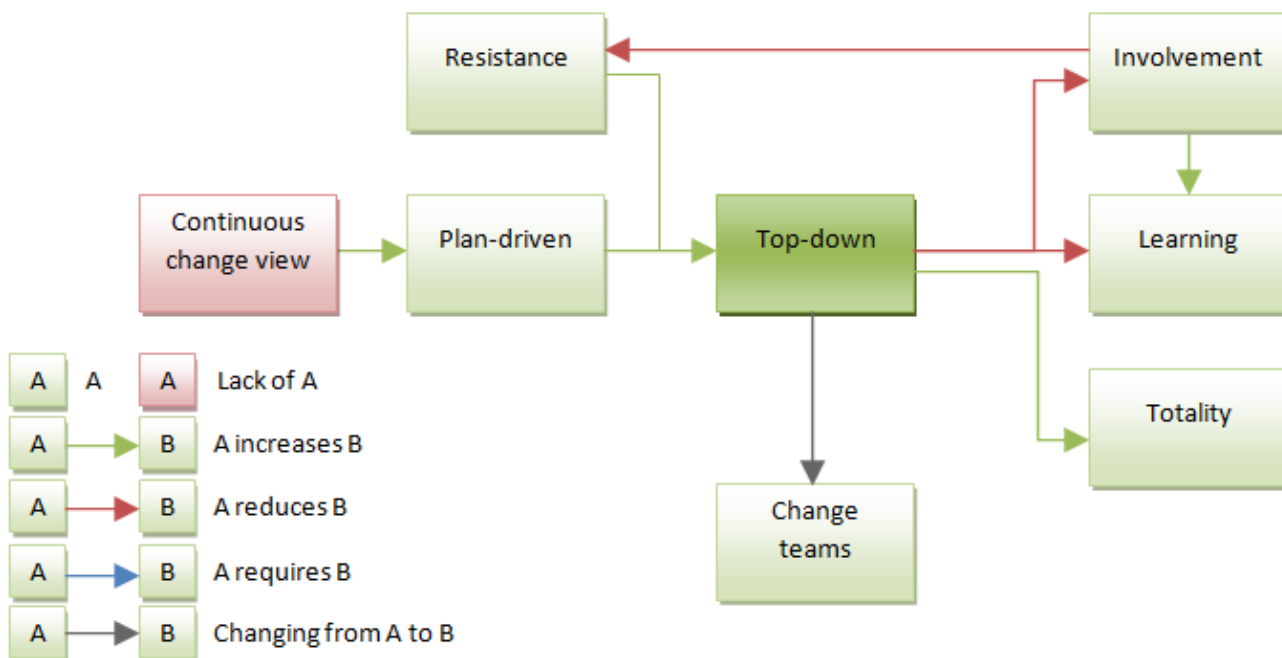


Figure 6.7: Top-down

One interesting finding is that top-down change management indirectly can cause change resistance. As shown in figure 6.7, change driven top-down does by design lack involvement as the change is driven by the management. This could be explained by [Lecraw \(1992\)](#), who argues that lack of participation can lead to frustration, as employees feel like they have no control of the situation, as discussed in section 3.1.8. Involvement was, as shown in the figure, found to reduce change resistance. Thus, when top-down change management implies less involvement than change driven more bottom-up, it indirectly also increases change resistance. This relation

can also be understood by looking at the Norwegian model discussed in section 3.1.3 and the role of managers in a Norwegian context as discussed in section 3.1.4. In the Norwegian model employee participation is the rule rather than the exception (Levin et al., 2012, p.22), and as argued by Sejersted (1997, p.40), leadership in Norway, therefore demands that the Norwegian model is followed. This implies broad involvement, and not meeting these expectations might result in change resistance based on the aforementioned frustration. This might indicate that a top-down approach to change is less suited in Norway, because of the resulting resistance to such an approach. In addition, one informant claims that top-down change is necessary when employees show change resistance. This creates a negative feedback-loop, shown in the figure, where top-down management reduces involvement, which increases resistance, which again leads to more top-down control.

In much of the same way, top-down change management was found to impair the organisation's ability to learn. As shown in the figure, involvement was also found to have a positive impact on learning. Thus, when the involvement is restricted by top-down management, this effect could be lost. Some informants also point out that they have experienced a lack of learning in change projects driven top-down. The connections between involvement and both change resistance and learning will be discussed further in section 6.2.10.

One positive aspect of top-down management we found, was totality. Several informants argued that only the top-management are able to see the 'big picture', in that they have a better overview of the organisation than the employees and middle managers. Therefore, they argue that change should primarily be driven top-down, in order to prevent silo optimisation. This phenomenon will be discussed further in the next section.

Finally, we found that some companies that either use or previously used top-down change management to varying degrees are changing from top-down driven change to change driven by change teams. Examples of this are Shipowner Company and Infrastructure Company B. Such change teams will be discussed further in section 6.2.9.

6.2.8 Local autonomy

Local autonomy is a more bottom-up approach to change management, contrasting with the previously discussed top-down control. By local autonomy we mean that local departments of

a given company are given the responsibility of implementing change locally. [Bleiklie \(1997, p.229\)](#) and [Byrkjeflot \(1997, p.428\)](#) argue that employees need such autonomy due to increasing complexity in organisations and their environments. As shown in figure 6.8 which depicts our findings related to local autonomy, the local departments must not only be given responsibility for the change, but also the authority to carry it out and implement it according to some informants. The reasoning behind this is that department management are often given responsibility for their own department, without the necessary mean to implement the change they desire. Thus, the informants argue that it is important for the local autonomy to ensure that the local management has the resources needed available and that it has the needed authority. [Eriksen \(1997, p.414\)](#) similarly argues matching influence with responsibility is key when implementing local autonomy as discussed in section 3.3.3. The goals of the process are set by top-management, which helps guide the change implemented by the local department. In this way, the top-management still retains the ability to guide the general direction of the change.

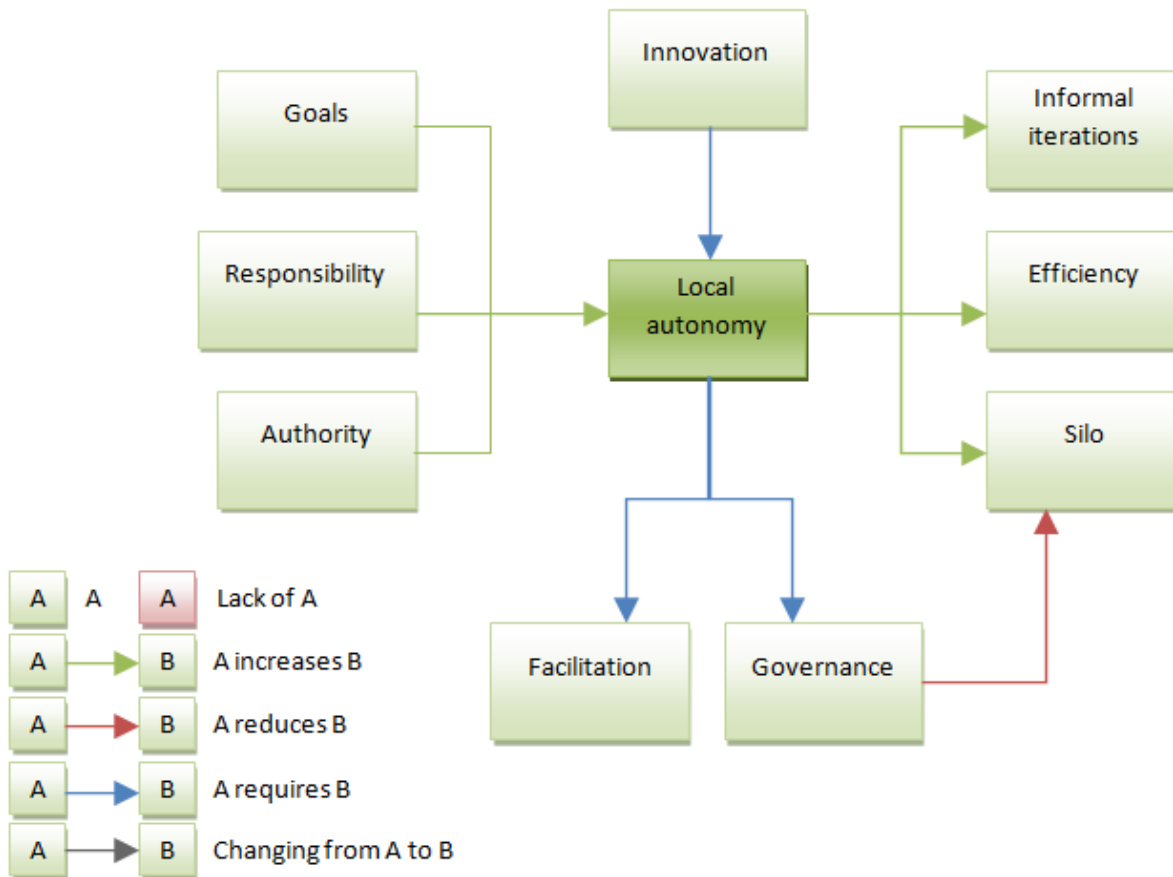


Figure 6.8: Local autonomy

As shown in figure 6.8, some informants claimed that local autonomy is a requirement for innovation. The reason for this is that local departments need a certain degree of autonomy to be able to experiment and innovate, as top-down control could prevent local departments from trying out new things. This is related to the connection we found between local autonomy and efficiency. Informants claim that an autonomous department is able to change quicker and more efficiently because it does not need 'permission' from top-management in order to implement changes that are seen as necessary. Both Eriksen (1997, 414) and Sushil (2014, p.12) state that local autonomy increases adaptability and flexibility for the same reasons.

According to Vallas (2003), a change initiative in the organisation is easier to implement with local autonomy, where the department managers are able to adjust the initiatives to fit their specific departments. We found that change implemented by autonomous departments in this way tended to be implemented as informal iterations, in that change was implemented one small

part at a time, without formal processes. An example of such informal iterations is found in the increasing competition case from Infrastructure Company B. It could be natural to implement change in this fashion in small, local departments, but there are problems with implementing change without formalised processes. This will be discussed in-depth in section 6.2.14. Some informants from Infrastructure Company B expressed a desire for more formalised change processes.

As shown in figure 6.8 we found two partly contradictory factors that different informants claimed was required for using local autonomy to drive change: facilitation and governance. On one hand, facilitation is required for efficient local autonomy in that the top-management have to ensure that the departments have the necessary means to carry out change by themselves. Hackman (1986) argues that such facilitation is key for self-management, as discussed in section 3.3.3. This is closely related to the previously discussed need for the authority to carry out changes. On the other hand, governance is required to ensure totality and to prevent silo optimisation as shown in the figure. Eriksen (1997, p.414) state that vertical cooperation and communication is needed to avoid silos when using local autonomy. This means that without control from the top-management, each department might change in a way that optimises their own performance while forgetting the bigger picture, which can deteriorate the efficiency of the organisation as a whole. Thus, some form of governance is required to ensure that the changes in the different departments align. Because of this, it can be argued that there must be a trade-off between the top-management facilitating local autonomy in departments, and the management imposing governance over the departments.

6.2.9 Change teams

As we have seen in the two previous sections, there is a need for autonomy to ensure efficiency and innovation, but there is also a need for top-down control to ensure totality and prevent silo optimisation. One possible way to satisfy both of these need is by using autonomous and multi-disciplinary teams to implement change. Our findings related to such autonomous change teams are shown in figure 6.9.

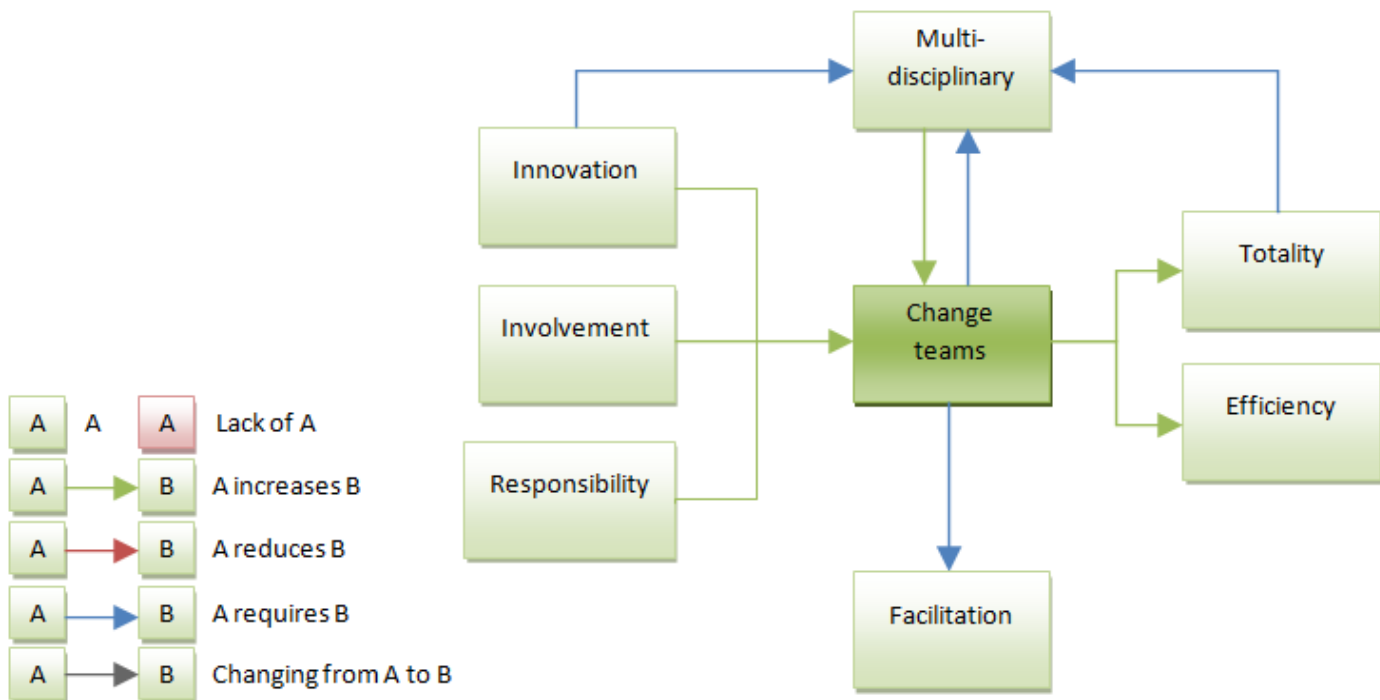


Figure 6.9: Change teams

As shown in the figure, our findings suggest that an autonomous team can provide efficiency in the same way as local autonomy, discussed in the previous section. Given the same levels of responsibility and authority, the autonomous change team is also able to implement quick changes in an experimental fashion. At the same time, our findings indicate that the change team can provide the totality that might be lacking in local autonomy because the change team can be composed of representatives from different positions and departments in the organisation. Thus, the team is able to consider many different points of view. According to [Bossidy and Charan \(2002, 105-106\)](#), frequent meetings with a broad management group ensures totality. The management group will, in this case, be the team responsible for the change. Therefore, it can be argued that in order for the change teams to ensure totality, they need to be broad and multi-disciplinary. A part of achieving this totality is involving representatives of both managers and employees in the teams. Thus, the teams will have elements of both top-down and bottom-up drivers. This will be a form of embracing the paradox of control and chaos, described in section [3.1.2](#). In our project thesis we argue that in addition to the top-down and bottom-up aspects, the change team will also be driven by experience, as the change is based on trial and

error through experimentation as discussed in section 3.3.8. We call this "middle-out" driven change. In this way, the experience of the employees can be channelised and utilised, similarly to the involvement model described by Baldersheim and Øgard (1997, p.346), discussed in section 3.1.2.

The totality that a change team can provide is closely linked to both involvement and multi-disciplinary. Many informants argue that it is important to involve employees in change processes, as they often have a different perspective than the management. In Engineering Company B, we even found an instance of employee-driven structural change, which was initiated because employees discovered a need for change. An informant from the company argues that employees often discover such change needs before the management because they are closer to the day-to-day operations. Involvement will be discussed further in the next section. As discussed in section 3.3.4, self-managed change management teams with shared leadership appear to be well suited for driving change in a Norwegian context, where involvement in the change processes is central. Thus, we argue that the change teams should not only be autonomous and self-managed but also involve shared leadership.

Multi-disciplinary was also shown to be very central to autonomous change teams in our case companies. Many informants from different companies argue that a close coupling between business and technology is key to fast and efficient change, as well as flexibility, as discussed in section 6.2.3. As shown in figure 6.9, this multi-disciplinary is shown to be required for both the innovation and the totality of the change team. The totality this gives the team can reduce the tendency for silo optimisation as discussed in the previous section.

Finally, as shown in the figure, the change team require facilitation from the top-management. This is similar to the facilitation needed for local autonomy, as described in the previous section, as the change team needs resources and authority, in the same way, to be able to implement change efficiently and autonomously. As discussed in the previous section, Hackman (1986) argues that when using self-managed teams, the primary role of the manager is to facilitate for the team. The role of managers as facilitators is also supported by Grønner (1997, p.191). An example of this in practise is the transformation project in Engineering Company B, where a project manager states that his primary role in the project is to ensure that the employees under him have all the resources they need.

6.2.10 Involvement

Many of our informants stress the importance of involving employees in change processes. As discussed in the previous section, involvement can help discover change needs and even drive change. According to Levin et al. (2012, p.103) one of the main advantages of the Norwegian model and the resulting involvement, is the ability to change and improve based on the knowledge of the employees. Our main findings related to involvement are shown in figure 6.10.

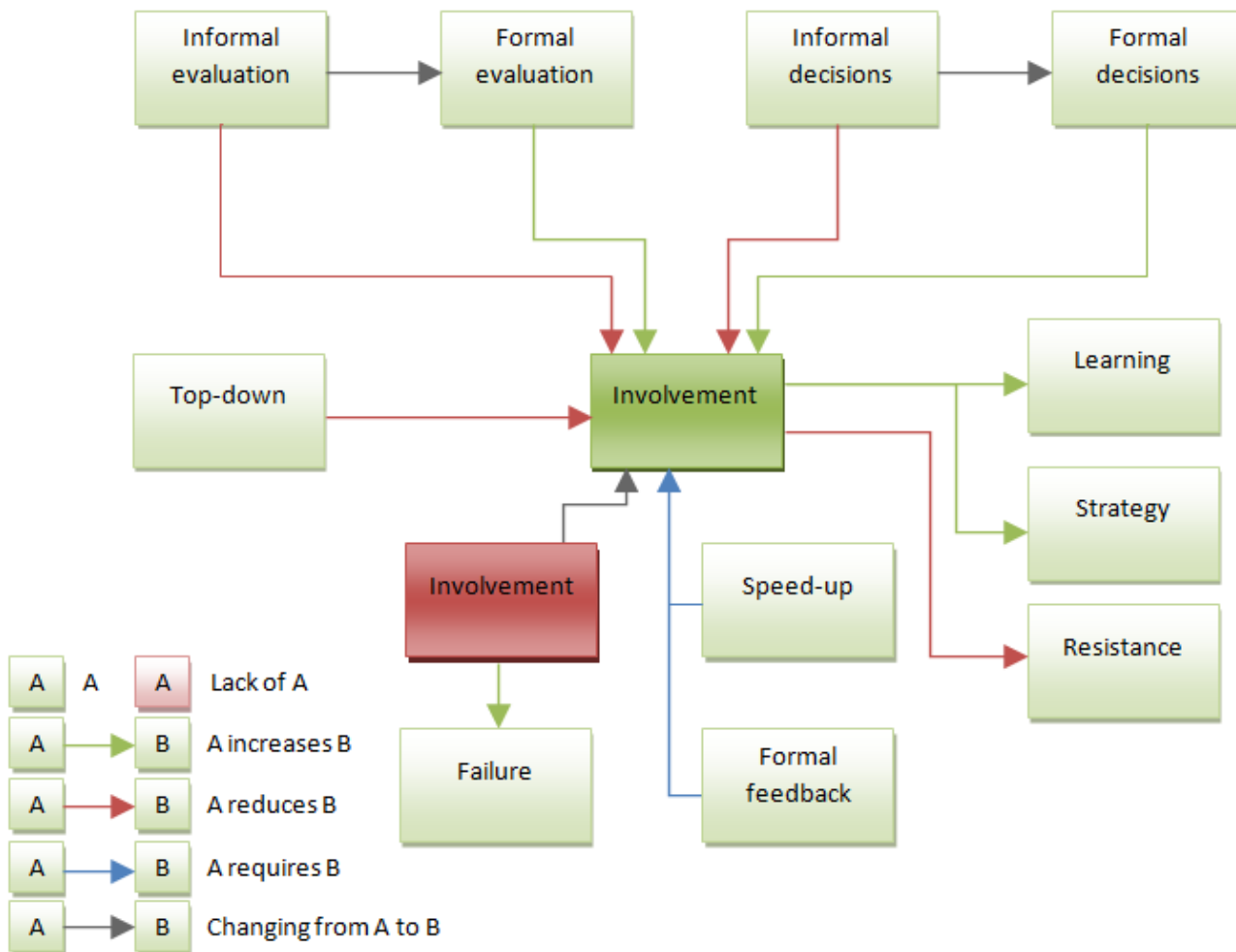


Figure 6.10: Involvement

First of all, the importance of involvement is made apparent from the figure in that those of our case companies that lacked involvement are currently moving towards change processes with more focus on involvement. In addition, one informant claimed that change efforts with-

out involvement fail. Some of the reasons for this will be discussed in this section. In companies where involvement is a focus, it appears like the union representatives know how changes have to be implemented, as discussed in section 3.1.3. This might be caused by the fact that union representatives and employees may know more than the management, due to being closer to the operations and having a lower turnover compared to managers, as argued by Finnestrand (2012).

One of the reasons why involvement is important for many of our change cases, is that involvement can help reduce change resistance, as discussed in section 6.2.7. Here we also discussed how a top-down driven change process could impair the involvement in the process, as shown in the figure. Two other potential positive outcomes of involvement shown in the figure, are learning and strategy development. According to several informants, employees learn a great deal from being directly involved in the change process. This learning can benefit both the employee and the company. In addition, employees involved in change processes can offer a different perspective than management. This can, as shown in the figure, help develop both change strategy, and company strategy. When the employees both learn through involvement and contribute to the company strategy, this might lead to a positive re-enforcing mechanism. Levin et al. (2012, p.102) argue that decisions made through broad involvement are better because a larger degree of the company's competences is utilised. When the involvement seem to increase the competences of the employees as well, this creates a positive self re-enforcing cycle. It improves the competences of the people involved in the next change, which enables even better decisions, and better strategic development.

Two related factors are shown in figure 6.10 which both impact involvement, are evaluations and decision-making. As shown in the figure, we found that both informal evaluation and informal decision-making reduced the amount of involvement in change processes, while formal evaluation and formal decision-making often included involvement. The reason for this, as we found in cases like Production Company, is that when the company does not have formal routines that ensure involvement in evaluation and decision processes, then it is easy for the management to just do this themselves behind closed doors. Because of this, we found that several companies want more formalised processes, as it can help involving employees. One informant state that this is very important, as employees with different competences can provide

other perspectives to evaluation and decision processes. Thus, involving these employees can help provide a better decision basis. Evaluation will be discussed further in section 6.2.15.

Finally, figure 6.10 shows two factors that require involvement: formal feedback, and change speed-up. Feedback requires involvement in that employees need to be sufficiently involved in a change process to be able to give valuable feedback. Feedback will be discussed in-depth in section 6.2.16. The element of "Speed-up" is one of the findings from the transformation project at Shipyard Company. This project was originally lacking in involvement, which contributed to the process taking longer time than expected according to one informant. One part of the speed-up process will, therefore, be more involvement. Another important and related part of the speed-up process is clear responsibility for different parts of the project, which will be discussed in the next section. This finding is interesting, due to the productivity argument of Levin et al. (2012, p.102) discussed in section 3.1.3, where they argue that involvement makes decisions take longer time, but makes implementation easier. The finding from Shipyard Company seems to indicate that they think more involvement will actually speed-up the process, instead of slowing it down as Levin et al. (2012) suggest.

6.2.11 Responsibility

As mentioned in the previous section, delegating clear responsibilities is an important part of Shipyard Company's effort to speed up its transformation project. They experienced that when no one in particular was responsible for driving the change, then the change process took significantly longer time. Shipyard Company is not the only one of the case companies to emphasise the importance of clear responsibilities in change projects. Infrastructure Company B and Engineering Company B are other examples of companies where clearly defined roles and responsibilities proved to be central for change. Figure 6.11 shows our aggregate findings related to responsibility.

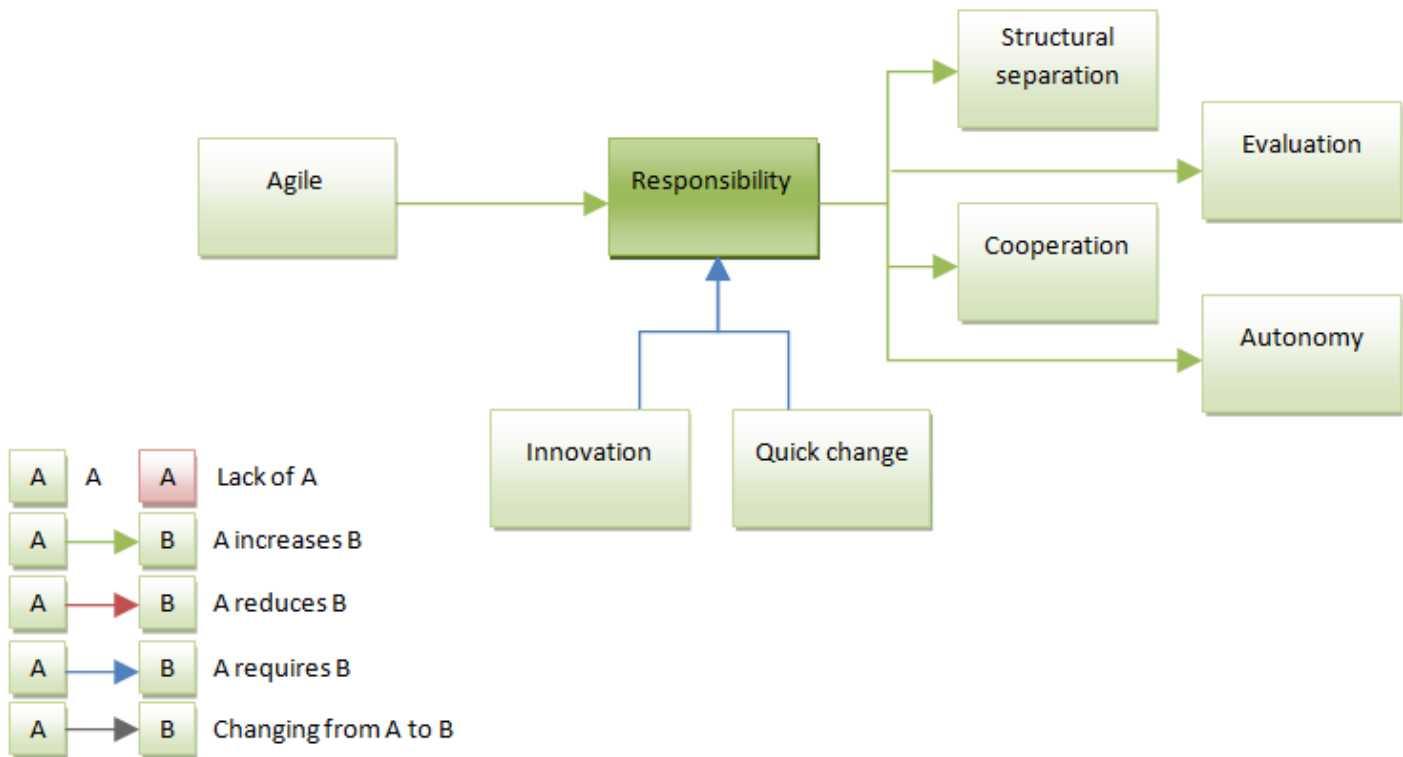


Figure 6.11: Responsibility

As shown in figure 6.11, Agile was found to help clarify roles and responsibilities. An example of this is the transformation project in Engineering Company B, where the agile change project structure clearly defined both project owners and project managers, as well as who was responsible for what parts of both the overall project and its sub-projects. Informants from Engineering Company B argues that this helped make the process efficient and transparent.

One way to ensure clear responsibilities is through structural separation. As discussed in section 6.2.1, we found that agile business units and departments need to be structurally separated from the rest of the organisation. This is a way of clarifying the responsibilities of the different departments, which ensures that they are able to focus on the tasks they are responsible for. An example of this is the project department in Infrastructure Company B, which have been structurally separated from the rest of the company to clarify their role and responsibility. In this way, they can focus solely on executing projects.

Two reasons we found in several companies for why responsibility was important to them are that it simplifies evaluation and cooperation. When it is clear which people and which de-

partments are responsible for which parts of the change process, then we found that evaluating what went well and what went wrong was made much easier. Informants argue that without this responsibility, it is more difficult to identify where things went wrong during change processes. Evaluation will be discussed further in section 6.2.15. In much of the same way, we found that clear roles and responsibilities can make cooperation easier because it is clear to everyone involved who they should be cooperating with at a given time. Without clear responsibilities, it could be more difficult to find the right people at the right time, according to informants.

The last possible outcome of responsibility shown in figure 6.11, is autonomy. As discussed in section 6.2.8, both responsibility and authority are needed for autonomous change processes.

The two factors shown in the figure that we found required clear responsibilities are quick change and innovation. At the beginning of this section, we discussed how Shipyard Company experienced how their change process was slowed down by a lack of clear responsibility. Thus, quick change appears to require clarification of the different roles and responsibilities involved in the process. Similar to how we found that both authority and responsibility are needed for autonomy, one informant argues that the same two factors are needed for innovation in the same way. The informant argues that people and departments need to be clearly responsible for driving innovation, and have the necessary resources and authority to do so. The reasoning for this is that innovation seldom generates immediate short-term results, and if it is not clarified that someone is responsible for the innovation, then the innovation is often not prioritised.

6.2.12 Communication

As we have seen previously in this chapter, communication is key for managing agile change in uncertain environments. [Levin et al. \(2012, p.153\)](#) and [Kotter \(2007\)](#) both argue that communication and sharing information are key success factors of change management. This notion is reflected by informants from all of the case companies. In this section, we will discuss other factors related to communication in change processes. The aggregate of our findings related to communication is shown in figure 6.12.

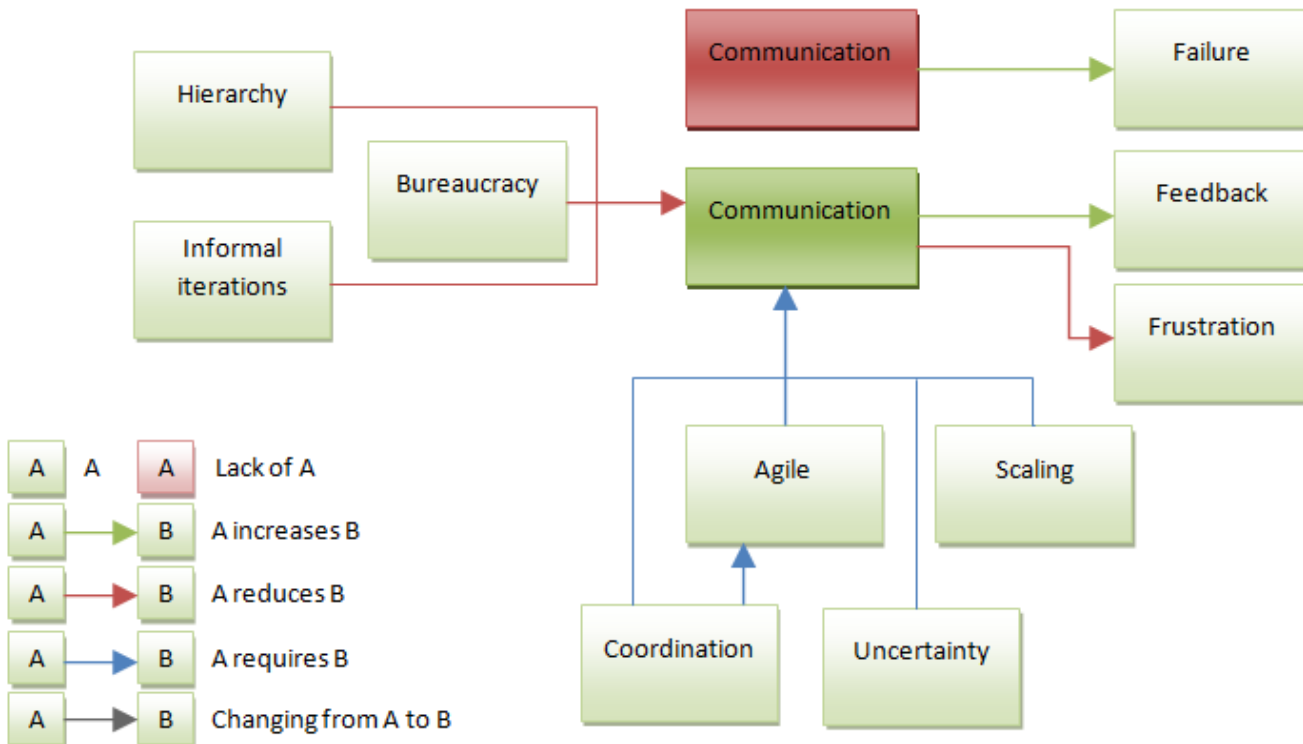


Figure 6.12: Communication

One of the reasons why communication is important in change processes is that it can help reduce frustration and therefore also change resistance. This was discussed in section 6.2.2, when considering possible ways to deal with frustration from changing in uncertain environments. As shown in the figure, feedback is also a possible benefit from clear communication. Informants argue that employees cannot provide valuable feedback unless they are well informed of different aspects of the given change process, which requires clear communication. Feedback will be discussed in-depth in section 6.2.16. In addition, [Kotter \(2007\)](#) argues that one should utilise all available communication channels to increase chance of the success and increase employee understanding during changes. The effect communication has on understanding is shown by [van den Heuvel et al. \(2013\)](#), who find that good communication before a change initiative is correlated with understanding during the change, as well as lasting change as discussed in section 3.1.8.

Another finding which illustrates the importance of clear communication in change processes is that one informant claimed that a lack of communication could cause a change initia-

tive to fail. The reason for this is that communication is necessary for several other elements of the change process. As shown in figure 6.12, we identified four such elements requiring clear communication: Agile, coordination, scaling, and uncertainty.

Several informants from the companies using agile change management argue that communication is very important for agile change. This might be explained by the fact that moving authority and influence down in the hierarchy creates a need for coordination between teams. As discussed in section 6.2.8, a risk with autonomy is the creation of silos. Eriksen (1997, p.414) argues that vertical communication is a way of reducing this risk. Coordination is also found to be important for the agile change process. We found that in change processes with several parallel sub-processes, coordination was key to the overall success of the change process. Informants argue that clear communication is key to achieve this coordination.

Our findings suggest that communication is key for scaling up successful changes from agile experimental iterations. This is linked to the previous point, in that this is also another reason why communication is important for agile change. A large part of this is communicating the success of the iteration, and thus creating an understanding in the rest of the organisation for why this change should be adopted by the entire organisation. Informants argue that experimental change fails unless results of the experimentation are properly communicated so that other departments can adapt the successful changes. Scaling will be discussed further in section 6.2.17.

The fourth factor found to require close communication is change under uncertainty. Uncertainty, and the need for communication to deal with uncertainty, was discussed in section 6.2.2. Communication was found to be particularly important when facing uncertainty, as it helped deal with frustration from facing uncertainty.

We also found three factors, shown in the figure, that hindered communication in change processes: hierarchy, bureaucracy, and informal iterations. Hierarchy and bureaucracy are related factors, and were found to hinder communication in similar ways. Informants argue that hierarchy hinders communication in that communication deteriorates on the way up and down the organisation. The more hierarchical the company is, and the longer the way up and down is, the more the communication will deteriorate. Similarly, long bureaucratic processes could also deteriorate communication in the same way. Informal iterations, on the other hand, can

prevent communication in that managers often tend to not involve as many employees in informal processes, as discussed in section 6.2.10. Therefore, informants argue that formalised processes can be beneficial, as formalised channels for communication and involvement can be integrated into the process.

6.2.13 Understanding

Many of our informants argue that the communication discussed in the previous section is important, but not enough. The employees also have to understand the reasons for the change. Thus, it is not enough to simply communicate the content of the change to the employees, but managers have to ensure that they understand the reasoning behind it as well. Figure 6.13 shows our findings related to this.

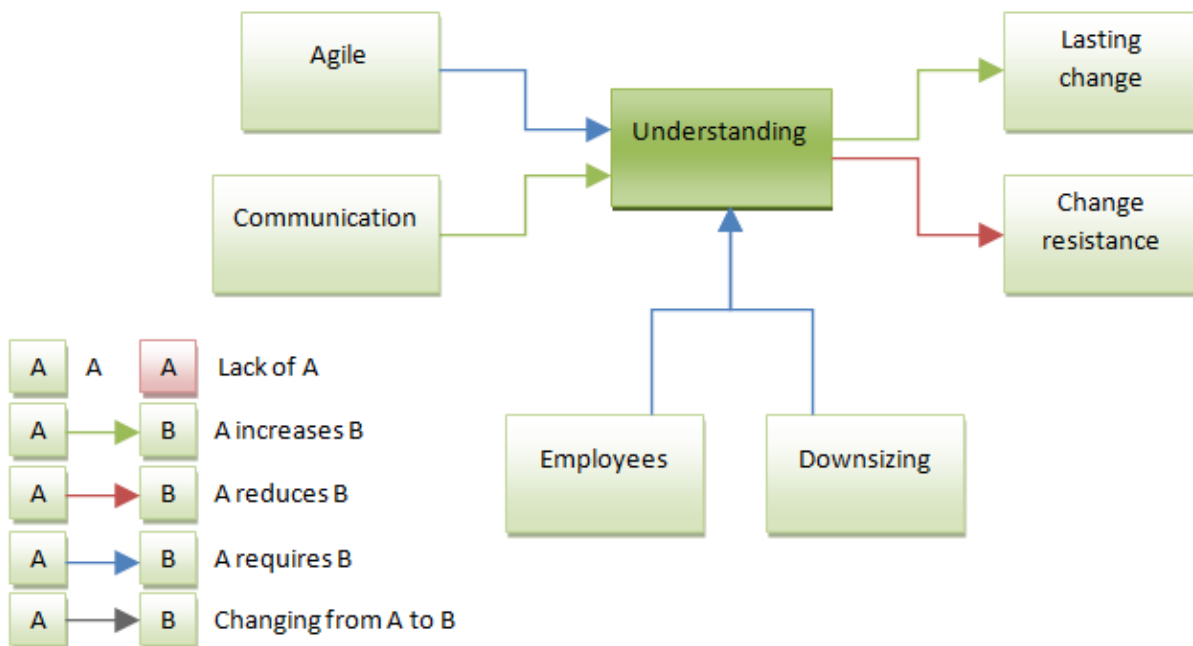


Figure 6.13: Understanding

As shown in the figure, many informants state that an understanding for the change is important for employees in general. In particular, it was found to be very important for downsizing processes. In companies where employees showed an understanding for the downsizing, they often tended to show less resistance to the change. This is also shown in the figure. Several of

the informants in manager roles also claimed that understanding for the change reduces change resistance in general.

Informants also claim that understanding can lead to lasting change. They argue that without a deep understanding for the change, employees often go back to working the way they are used to, which effectively reverses the change. Having employees understand why they have to work differently will therefore greatly increase the chance of the change sticking, according to the informants. This claim is supported by the quantitative findings of [van den Heuvel et al. \(2013\)](#), as discussed both in section [3.1.8](#) and the previous section. Here, it is shown that understanding during the change process is positively correlated with lasting change.

Finally, we found that agile change demands understanding. As discussed in section [3.3.1](#), [Rigby et al. \(2016\)](#) state that executives have to understand agile. This notion is shared by the informants from Infrastructure Company A, who claim that managers need to understand both the plan-driven and the agile approach, in order for the different parts of the organisation to cooperate. Additionally, they state that it is important for the plan-driven and agile departments to understand each other as well, to be able to cooperate efficiently with each other. Thus, creating an understanding for Agile is a large part of adopting agile change management, which will be discussed in chapter [7](#).

6.2.14 Iterations

Iterations are one of the most important aspects related to agile, as iterative change is the basis for the agile change process. One of the things we discovered about iterations, is that there are several large differences between formal and informal iterations. Thus, we will discuss the two versions separately. Figure [6.14](#) shows our key findings related to formal iterations, while figure [6.15](#) shows the findings related to informal iterations.

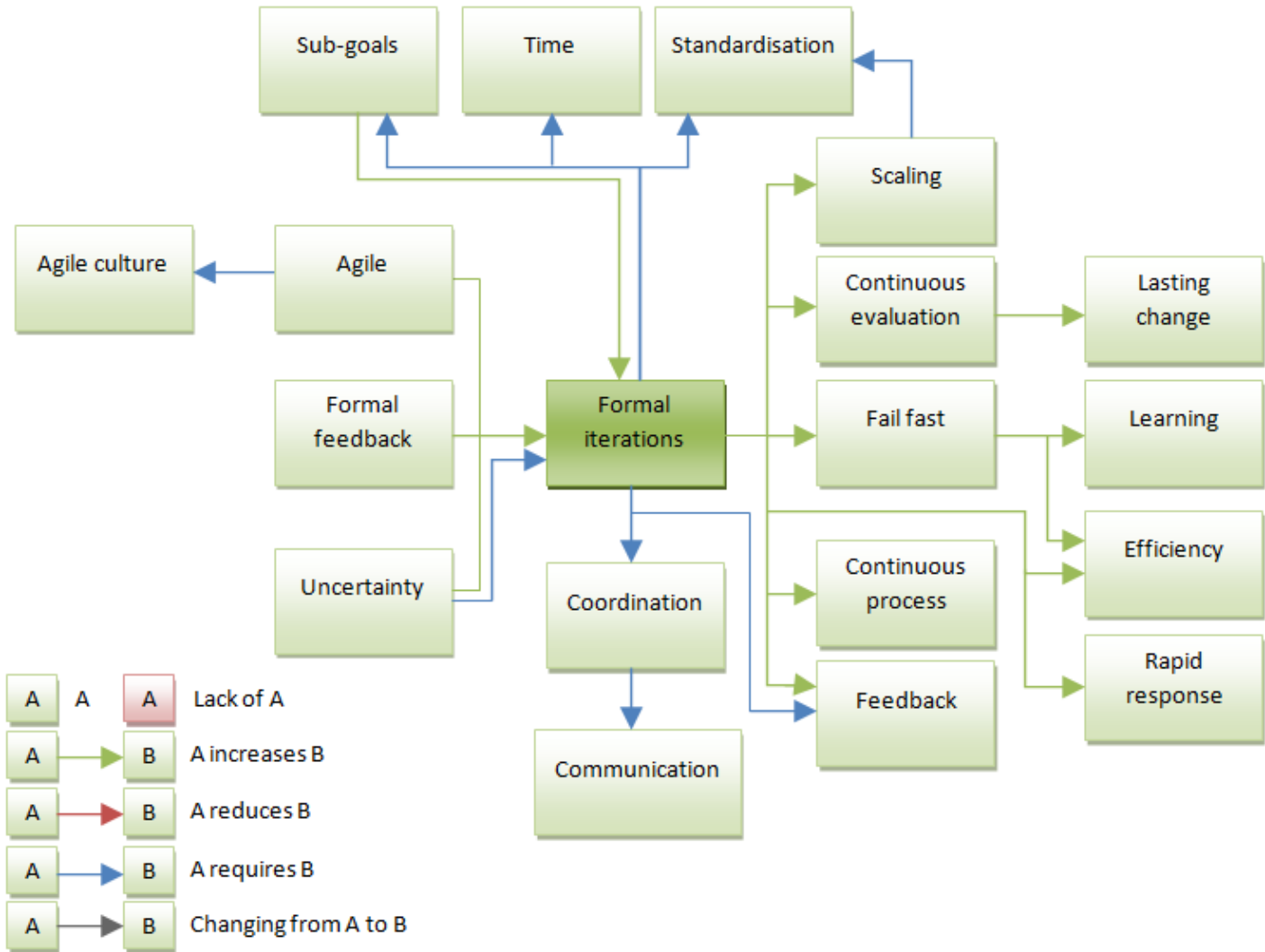


Figure 6.14: Formal iterations

As shown in figure 6.14, formal iterations are central to agile change, as it is a key part of the agile change process. As previously discussed in section 6.2.1, implementing change in this iterative manner requires a culture which supports it. According to informants, using iterative change without an agile change culture will not have the same effect, but rather create uncertainty and frustration. As discussed in section 6.2.1 agile culture is a prerequisite for adopting agile.

Another key part of agile related to the formal iterations is formalised feedback mechanisms. One of the main benefits of iterative change is the ability to quickly adapt to change between iterations based on feedback. Therefore, it is important that formal feedback mechanisms are

in place to ensure the flexibility of the process. Feedback will be further discussed in section 6.2.16.

Uncertainty is also found to be closely related to the use of formal iterations. As discussed in section 6.2.2, we found that an agile and experimental approach to change is necessary when facing unpredictable and uncertain environments. As discussed, formal iterations are key to agile change and can help enable experimental change.

As shown in figure 6.14, we found four other factors required for using formal iterations for change: sub-goals, time, standardisation, and coordination. As discussed in section 6.2.6, the overall goals of the change project need to be broken down into sub-goals, or 'actionable items', where each item can be implemented in a single iteration. This makes the iterations relatively independent from each other, while they still work towards the same overall goals.

One potential downside of using iterations to implement change is that it can take longer time to implement one iteration at a time, as opposed to implementing all parts of the change simultaneously. However, this is as discussed what makes agile processes flexible and able to react to uncertainty. If the entire change is implemented as one large process, instead of several smaller iterations, there would be limited opportunities for feedback, evaluation, and re-considerations. Thus, agile iterations trade off time in favour of flexibility. This trade-off is well illustrated by one informant from Engineering Company B who admits that their agile change process might take more time than a traditional plan-driven process, but argues that using the agile approach is well worth it because of the benefits it provides.

Informants from Infrastructure Company A, Infrastructure Company B, and Shipyard Company argue that standardisation is an important prerequisite for iterative change. This is because the standardisation makes implementing changes easier and more efficient, as the processes that need to be changed are analysed and mapped out beforehand. This is related to the discussion in section 3.2.5, where we find that a systematisation of the processes which are being changed can help making sense of the situation and prevent premature decision-making. The increased efficiency from having processes systematised and mapped out beforehand is arguably particularly important when implementing change through short iterations, as there is not enough time to start analysing company processes from scratch in each iteration. However, as discussed in section 3.2.5, Jacobsen (2012, p.95-96) argues that standardisation reduces

the ability to change continuously as changes that break the rules of the standardisation are rejected. Therefore, it seems like a balance is needed. If companies standardise too much they lose flexibility and the ability to adapt continuously. On the other hand, processes and systems still need to be systematised and mapped out in order to make short and fast change iterations easier as discussed in section 3.2.5. Thus, companies need a balance where systems and processes are standardised to a certain degree, but without rules that restrict the company's ability to change and experiment.

Standardisation was also found to be required for scaling up successful change from the iterations. Informants from Infrastructure Company A argue that it is much easier to scale up successful change to the entire organisation if all departments in the organisation use the same standardised systems and processes. If, however, different departments use different systems or processes, then the successful change might need to be tailored to fit the different departments. It can also happen that change which is considered successful in one department is unsuited for another department, because of the differences between them. This will, of course, make scaling successful change up to cover the entire organisation much more difficult. This is another factor that will impact the previously discussed balance of standardisation. Companies need enough standardisation to scale up successful results of experimentation, but not so much that it restricts the companies' ability to experiment in the first place. Scaling will be discussed further in section 6.2.17.

The final requirement we found for formal iterations, is coordination. As shown in the figure, this is closely linked to communication, as discussed in section 6.2.12. In section 6.2.12 we also found that coordination was required for iterative change as both iterations and potential simultaneous sub-projects need to be coordinated with each other. Communication was shown to help with the coordination, and also be required for communicating successful changes to the rest of the organisation and thus help with the aforementioned scaling.

Figure 6.14 shows seven other potential outcomes of formal iterations: continuous processes, continuous evaluation, lasting change, fast failure, learning, efficiency, and rapid responses. First of all, we found that agile processes can be used for managing both continuous change and non-continuous change. The transformation projects in Infrastructure Company A and Engineering Company B are examples of agile and iterative processes with clearly defined

time frames, while the experimentation in IT Consulting Company and the research projects in Production Company are examples of more open-ended and experimenting change processes, driven in an iterative fashion. While these two companies both have informal elements in their iterations to different degrees, informants from the companies express desires to make these two processes more formalised. This will be discussed later in this section. This development indicates that formal iterations can also be suited for managing continuous change.

Closely related to the aspect of continuous change is continuous evaluation. When agile iterations are used for continuous change, the iterations can also be used to evaluate changes over time. In this way, one can monitor the long-term effects of the change, and make alterations if necessary. Informants argue that such continuous evaluation can help ensure that the change sticks, and ensure that employees do not go back to old ways of working. Thus, using future iterations to also monitor and evaluate past changes can help create more lasting change according to informants. Continuous evaluation will be further discussed in the next section. The ability to 'fail fast' is found to be one of the benefits of using iterative change processes. [DiPiro and Chisholm-Burns \(2013\)](#) define "fail fast" as the ability to identify failure at an early point in time, in order to save expenses. Many informants have experiences with failed changes that were not stopped early enough, often due to lack of evaluation during the process. Thus, large amounts of both time and resources are wasted on change projects that should have been cancelled at an earlier point in the process. The informants argue that by using agile iterations and formalised evaluation at the end of each iteration, one is able to discover that a change project is likely to fail at a much earlier point in time. Terminating a failing change early based on feedback from the iterations can, therefore, save the company valuable time and resources. As [DiPiro and Chisholm-Burns \(2013\)](#) state that in order to have a "fail fast" mentality, one needs a culture which is comfortable with admitting failure. Informants from both Production Company and Infrastructure Company A also argue that such an open culture is needed in order to effectively fail fast. However, for some companies, failure might be too expensive or have too much risk involved. An example of this is Shipyard Company. If failed changes cause them to fail a contract, the financial consequences could be severe. Thus, a culture for embracing failure could be beneficial, but might not be suited for every company.

In addition, many informants argue that trying out changes in an iterative manner and ter-

minating failed projects early can help the company learn, as shown in the figure because this experimentation approach to change helps lower the bar for trying out new things. [D'Souza and Renner \(2016, p.264-270\)](#) argue that such an experimental approach with focus on learning is necessary when dealing with uncertainty. This approach is implemented by Production Company where they consciously experiment in order to learn. We find that they try to learn from both successful and unsuccessful projects, which will be discussed further in the next section. A similar notion is shared by the informants of Infrastructure Company A.

Finally, using formalised change iterations allows the company to respond quickly to unforeseen changes. As we found in section [6.2.3](#), agile iterations are very flexible in that one is able to change the direction of the change process in between iterations, based on changes in the environment. This is what makes the iterative approach advantageous for change projects when facing uncertainty, as discussed in section [6.2.2](#).

As previously mentioned, we found several key differences between formal and informal iterations. However, many of the factors we have discussed so far in this section are valid for informal iterations as well. In the rest of this section we will focus on the differences we found between the two and on potential consequences of using an informal iterative change process instead of a formalised one. Our main findings related to informal iterations are shown in figure [6.15](#).

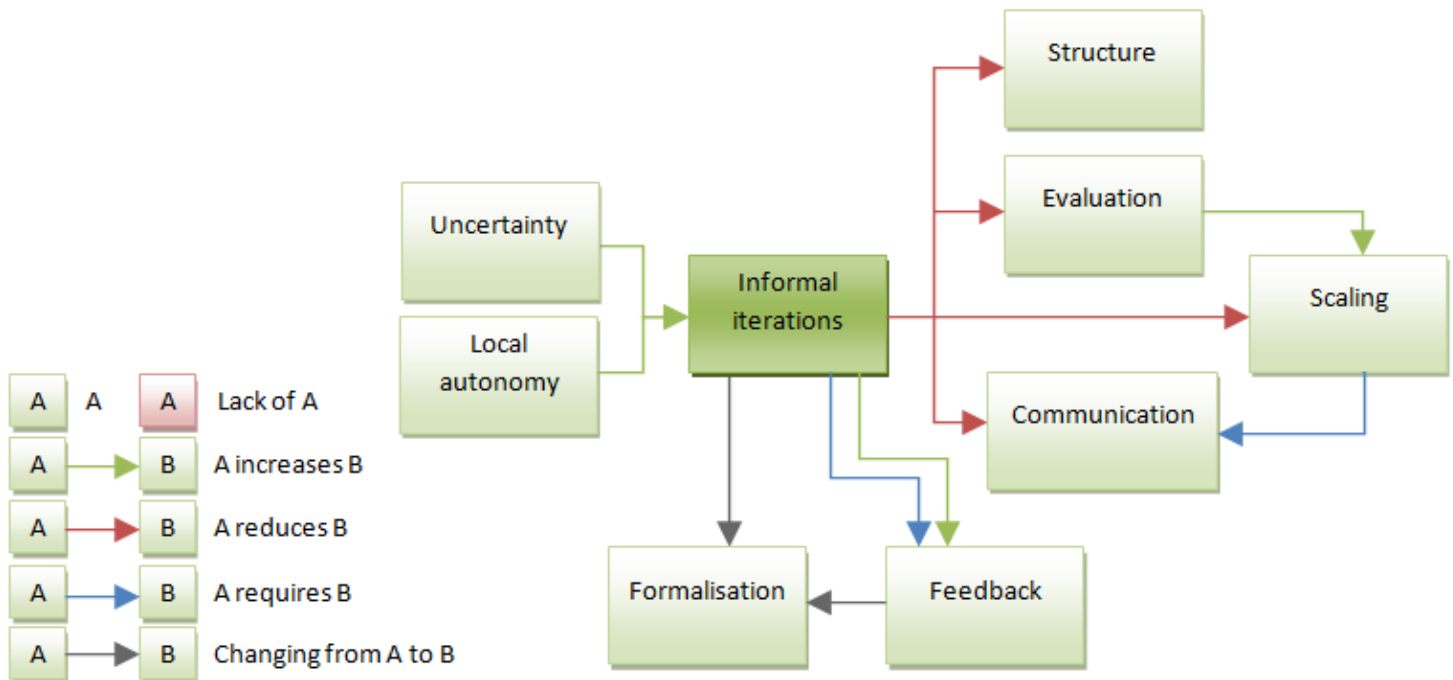


Figure 6.15: Informal iterations

As mentioned in section 6.2.8, we found that informal iterations were often used in cases with local autonomy. Often, departments with autonomy to implement their own changes used iterative approaches when faced with uncertainty, but without formalising the iterative change process. Informants from several companies state that they have experienced different problems with this. As shown in figure 6.15, we identified four main problems: lack of structure, lack of communication, lack of evaluation, and difficulty with scaling successful change.

First of all, informal iterations are not part of the company's structure and processes in the same way as formalised iterations. Often, they are only driven by department managers with autonomy over local changes as previously discussed. This can lead to a lack of transparency, as integral parts of such informal processes can tend to happen behind closed doors without involvement as discussed in section 6.2.12. This can happen unintentionally, but because the iterations lack formalised mechanisms for involvement and feedback, it is as discussed often easy and simple for the manager to evaluate and make decisions alone. In doing this, different perspectives that could be relevant for the decision-making are lost.

This lack of transparency is closely related to the two next problems we identified: communi-

cation and evaluation. In the exact same way, it could happen that central aspects of the changes are not well communicated to the employees unintentionally, simply because of the lack of formalised mechanisms and communication channels. An example of this is the informal experimental change in IT Consulting Company. Here we found that employees lacked insight in the experimentation done by the management. This could possibly be improved with formalised communication channels and mechanisms for involving employees in the experimentation to a greater degree. Improved communication will also enable employees to provide better feedback. Taken one step further, formalised mechanisms for involvement and feedback can also enable employees to provide new perspectives to the evaluation and decision processes of the experiments. As discussed in section 6.2.10, we found that employees in Production Company were often not involved in the informal evaluation and decision processes, even though one informant expressed a need for involving employees with different perspectives in order to make better decisions.

Finally, informal iterations were found to make scaling successful changes up to the rest of the organisation more difficult. This is closely related to the aforementioned problems with communication and involvement. Because of the lack of transparency in the process, it can be significantly harder to implement the same change in other parts of the organisation. In addition, if aspects of the change are not well communicated, as previously discussed, it can also be harder to scale the successful change. This is simply because the results of the change and the reasoning behind it are not communicated to other parts of the organisation. This can potentially be solved with formal channels for communication and feedback, that can help ensure that successful changes in one part of the organisation are communicated to the rest of the organisation, enabling other departments or business units to adopt the changes as well.

All of these problems with informal iterations caused several informants to express desires for more formalised processes. As illustrated in figure 6.15, we found that several managers want to formalise their informal iterative change processes because of the problems with the informal processes highlighted in this section. An intuitive challenge with formalisation of processes is that it could reduce flexibility, as flexibility is traded off for formalisation as discussed in section 3.2.5. However, we find that formalisation does not necessarily limit flexibility. Rather, it seems like formalisation "facilitates rather than hampers procedures" (Mattes, 2014), similar to what

our informants argue as seen in this section. Thus, it seems like a formalised change process is needed, but it is crucial that the members of the change team are given freedom and flexibility within the structure of the formalised process. This freedom is arguably achieved by the autonomy and authority we argue that the change team should have in section 6.2.9.

6.2.15 Evaluation

As we have seen several times in this chapter, evaluation is a central aspect of agile change. When discussing evaluation, we will distinguish between two different forms of evaluation: Evaluation conducted at the end of a change process to assess what went right and wrong, and continuous evaluation conducted during the entire change process to assess the process itself. The key difference is that 'ordinary' evaluation is retrospective, while continuous evaluation affects the process through feedback. In this section, we will first discuss evaluation at the end of change processes. Our findings related to this form of evaluation are shown in figure 6.16. We will then discuss our findings related to continuous evaluation, which are presented in figure 6.17.

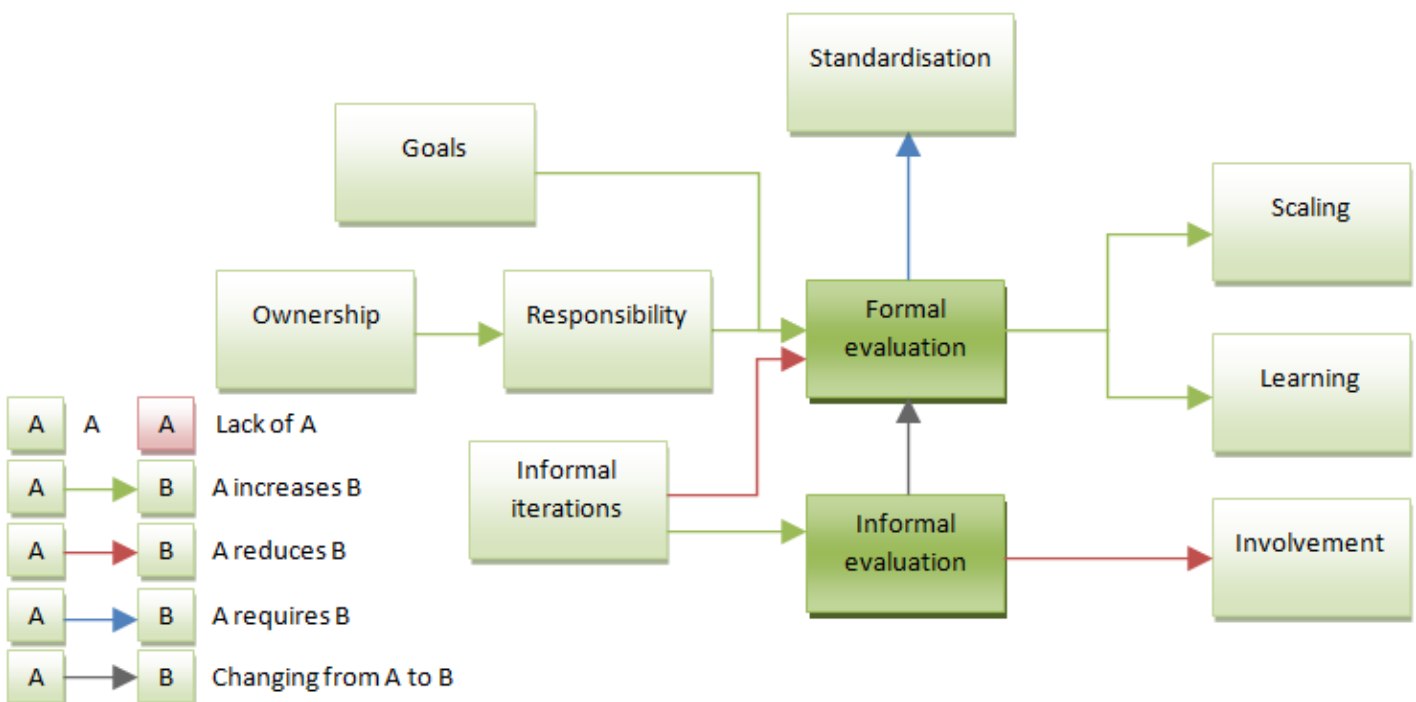


Figure 6.16: Evaluation

When considering evaluating a completed change process, we will differentiate between formal and informal evaluation as shown in figure 6.17, because our findings indicates some differences between the two.

According to one informant, processes have to be standardised in order to evaluate them. This is related to the discussion in section 6.2.14 about the need for systematising and standardising processes in order to make change easier. In the same way, as discussed in section 6.2.14, systematisation will help make sense of the different processes subject to change, making an evaluation of the changes possible.

As shown in figure 6.17, we found that good change goals are needed for evaluating change processes. We found that if the goals are clear and measurable then it will be easy to assess how successful the change process has been, simply by comparing the results of the process to the predetermined goals, which is also argued by Eriksen (1997, p.396). The difficulty in this process is formulating the goals in a clear enough manner. This is discussed in section 6.2.6. Clear responsibilities can also help make evaluation easier in a similar way. If responsibilities and ownership for different parts of the change process are clearly defined, then it will be easier to assess where in the organisation different failures happen.

Two potential benefits of formal evaluation are scaling and learning. Several informants argue the importance of good evaluation for scaling. In order to scale up successful change, one first have to determine which changes are successful. Thus, if the evaluation process is skewed, biased, or lacking in another way, then there is a risk of trying to scale up the wrong changes. This is of course also dependent on the goals used for the evaluation. For example, as discussed in section 6.2.5, the goals have to reflect the desired balance between long-term value creation and short-term profit.

Evaluation is also needed for learning. One cannot learn from either successful or unsuccessful projects unless one understands why the given project was successful or unsuccessful. Maurer (2013), Longenecker et al. (2008), and Teare and Monk (2002) all argue that organisations need to evaluate both successful and unsuccessful change in order to learn. In particular, Longenecker et al. (2008) argue that many organisations claim to learn, while not really understanding the root causes for failure or success. This notion is reflected in some of our case companies. An example of this is Shipowner Company, where informants claim they have learned from the oil

crisis. The informants claim that a lack of focus on cost was the reason that the crisis hit them as hard as it did. However, they did not seem to know why they did not have this cost focus before, and they do not have mechanisms for keeping this focus in the future. Thus, they claim to have learned, while seemingly not understanding the underlying root causes of the failure. A similar discussion was had with an informant in Engineering Company B, who explains a similar need for cost focus in the future. The informant claims that a part of the cause for this was the fact that a lot of their managers had not previously experienced a crisis, and they have had a focus on being able to use this experience in the future. Thus, it seems like they have identified at least parts of the root causes. Other companies clearly state that they are not good enough at learning from projects. An example is project reports being put in drawers, and not followed up on. A common problem the companies seem to face is the scaling of this learning to other projects and departments. Scaling will be discussed in section 6.2.17. We argue that a conscious approach, with formal evaluation after each change project, can facilitate learning. In this way, companies can be forced to identify the discussed root causes for successes and failures, which can help them gain a deeper understanding, increase learning, and thus also increase the likelihood of success in future change projects.

When it comes to informal evaluation, we found that it unsurprisingly often is used for evaluating informal change processes. After all, it would be hard to implement formalised evaluation procedures for evaluating a change process which is not formalised. An effect we found of informal evaluation was, as shown in figure 6.17, a lack of involvement. This is similar to the lack of communication and involvement we found in informal iterations in the previous section, in that it is easy for managers to simply do the evaluation themselves when there are not established routines ensuring involvement in the evaluation process. As discussed in the previous section, a lack of involvement can lead to important perspectives not being considered in the evaluation process, which potentially can cause managers to make wrong decisions. Because of this, several informants expressed desires for more formalised evaluation processes.

As previously discussed, we define continuous evaluation as evaluation during the entire change process, giving feedback which can alter the process. Figure 6.17 shows our findings related to continuous evaluation.

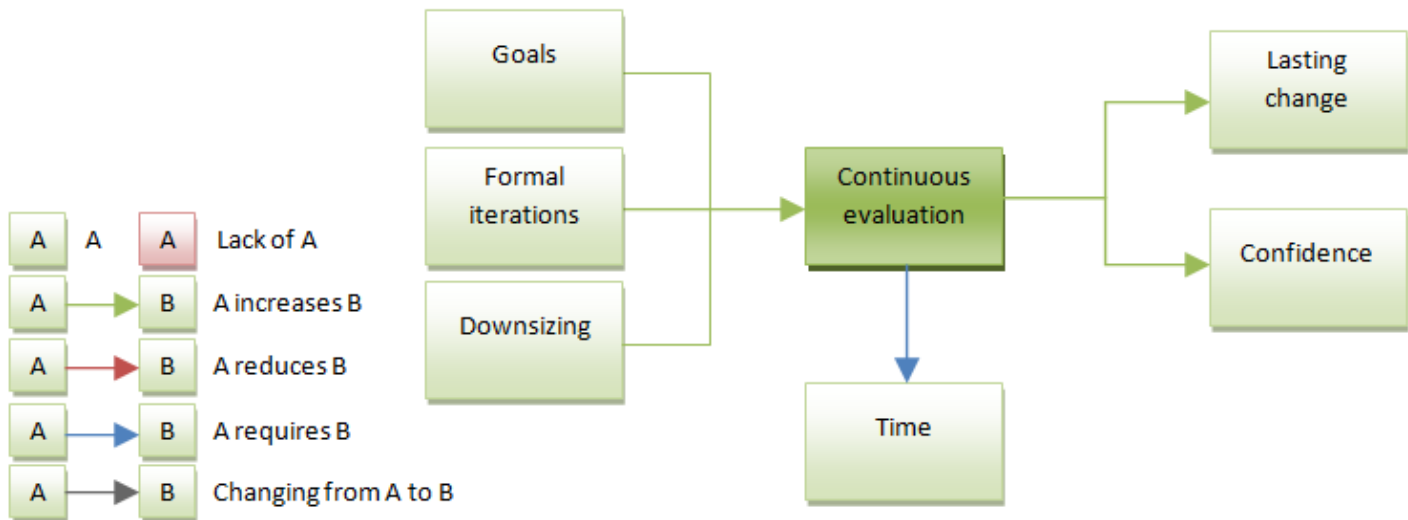


Figure 6.17: Continuous evaluation

Just as evaluation at the end of a change process, continuous evaluation also need well-defined goals to compare the development in the change process to. In the case of agile iterations, the sub-goals discussed in section 6.2.6 are natural to use for the continuous evaluation, as one can evaluate each iteration based on how well it met the sub-goal it set out to meet. This evaluation that can be done at the end of each iteration can help identify things that could have been done differently, which future iterations can learn from. This feedback from one iteration to the next makes continuous evaluation a central part of formal iterative change, as shown in the figure.

Two potential outcomes from continuous evaluation, are lasting change and confidence, as shown in the figure. Informants argue that when important aspects of the change process are continuously monitored, one can make sure that the change works as intended, and the possibility for feedback enables one to make quick alterations that can help make the change stick. Several informants argue that the evaluation has to continue after the change is completed as well, to ensure that the change really sticks over time.

One informant also argues that continuous evaluation during the change process helps create confidence, as the people involved in the process has a way of confirming that they are doing the right thing. The alternative, according to the informant, is that people involved in the process feel uncertain, as the success of the change is only made apparent at the very end of the

process. One aspect of this is that downsizing processes can be easier to manage. We find that several informants state that downsizing is particularly hard on middle-managers, who have to make tough decisions without much control over the situation. Continuous evaluation is found to make this easier, as it can be reassuring to know that they are on track, and making the right decisions.

A potential drawback of continuously evaluating the change process is that it requires additional time. However, several informants argue that investing time in evaluation is completely worth it. As discussed in section 3.3.2, several authors suggest the same. One informant also suggests that even if time is very limited during a change process, simply having 15-minute meetings to quickly evaluate the progress of the process can be very beneficial. The problem with this is that the evaluation easily could become unprioritised. [Teare and Monk \(2002\)](#) argue that pressure to perform often overshadow opportunities to learn, and because of this, formalised systems for evaluation are required. We argue that formal and continuous evaluation will be a natural aspect of an iterative change management process, where an evaluation is carried out after each iteration as discussed in section 6.2.14.

6.2.16 Feedback

As we have seen in this chapter, feedback is a central aspect of agile change, and of agile iterations in particular. This is shown in figure 6.18 alongside the rest of our findings related to feedback.

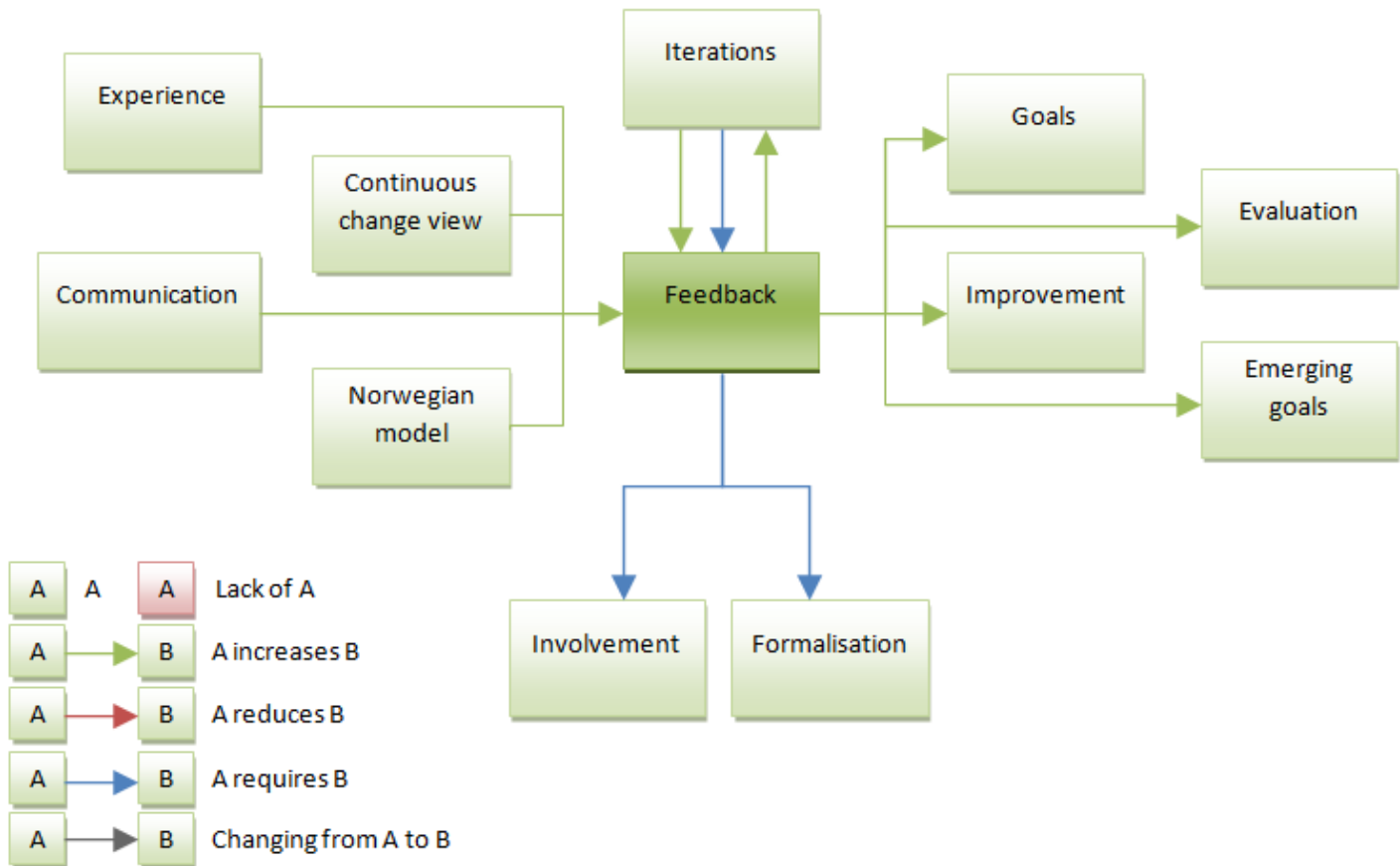


Figure 6.18: Feedback

Figure 6.18 shows that involvement and formalisation were found to be requirements for efficient feedback processes, as previously discussed in sections 6.2.14 and 6.2.15. We also found four different factors that could improve feedback, as shown in the figure: experience, a continuous view on change, communication, and the Norwegian model.

An informant from IT Consultant Company argues that feedback is particularly important for continuous change processes. When change is regarded as a continuous process, where the company responds and adapts to unpredictable environments as described in section 6.2.4, then efficient feedback is important in order to be able to respond quickly to changes.

In section 6.2.12 we discussed how communication is important for the feedback processes. The reason for this was simply that the more informed employees are, the more able they are to provide good feedback. In addition, it is necessary to have good communication channels that allow employees to submit feedback during the change process as discussed in section 6.2.12.

Finally, we found that the Norwegian model helps enable feedback, in that union representatives are involved in the change processes. This gives the employees a communication channel, as feedback can be delivered through the representative. We found several instances of unions being a facilitator for feedback, and in the case of Shipyard Company, the Union was responsible for their suggestion system. Several informants and Finnestrand (2012) argue that employee feedback is necessary, due to employees having knowledge which the management do not have. This cooperation is a central aspect of the Norwegian model, as discussed in section 3.1.3 and section 6.2.10.

The main function of the feedback is, according to several informants, improvement. By implementing methods for feedback, the change processes and change content can be improved based on experience. In agile and iterative change, this can be done from iteration to iteration, in that feedback from one iteration can help improve the next iteration. This is closely related to the evaluation at the end of each iteration, which was discussed in section 6.2.15, in that the feedback provides data for the evaluation.

Feedback can, according to several informants, be used to alter change goals. This is part of what makes agile change flexible, as discussed in section 6.2.3. If feedback indicates that the original change goals are no longer relevant, then the goals can be reconsidered and possibly redefined in between iterations. The extreme form of this is emerging goals, as discussed in section 6.2.6, where all of the change goals are created from feedback and evaluation.

6.2.17 Scaling

Scaling is another central aspect of agile change as we have seen in several sections of this chapter. Figure 6.19 shows our findings related to scaling up successful change.

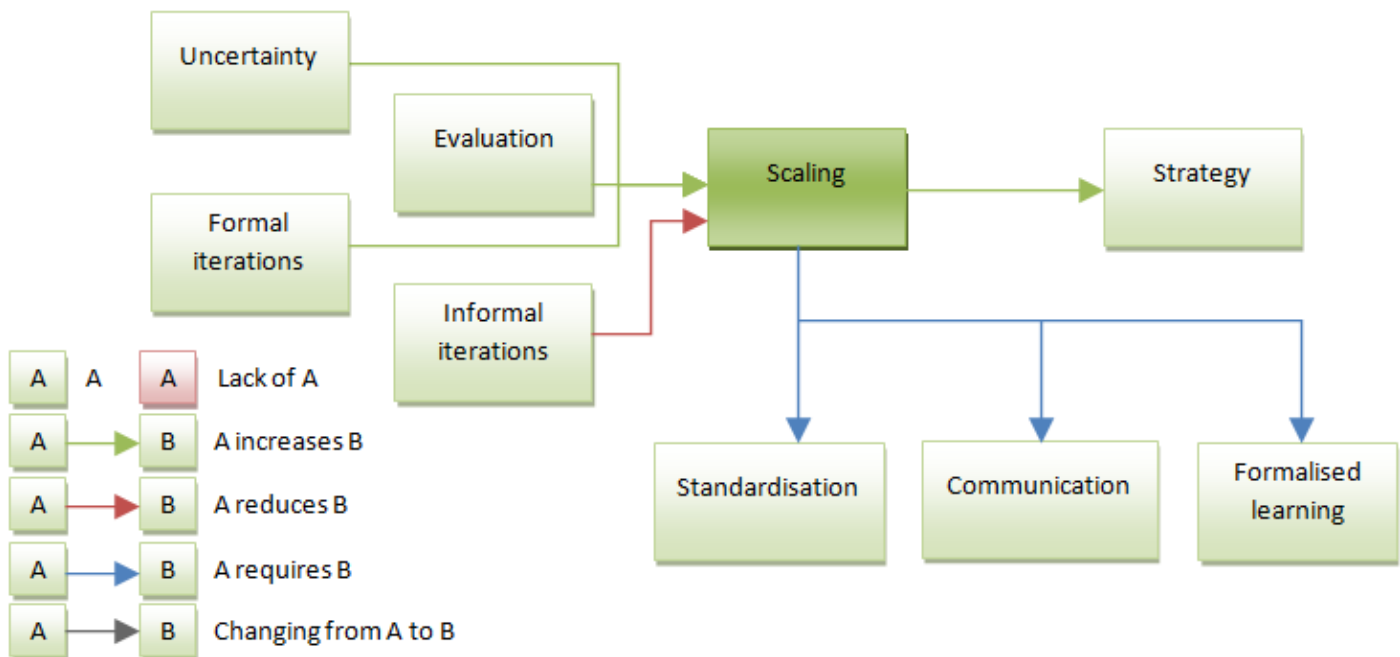


Figure 6.19: Scaling

As shown in figure 6.19, we identified three factors required for scaling: standardisation, communication, and formalised learning. In section 6.2.14 we discussed how standardisation is required for scaling up change, as standardised procedures enable different departments to implement the same change. If different departments use different procedures or are structured differently, then it will be substantially more difficult to take a successful change from one department and 'scale it up' by implementing it in the other departments as well. In this case, the change has to be tailored to the systems in each department, and a change which was successful in one department, might not have the same effect in other parts of the organisation. Infrastructure Company A experienced that by using standardised systems across the entire organisation, they were able to more efficiently scale up successful change from one division to the rest of the organisation, as discussed in section 6.2.14.

Communication is another requirement for scaling, as discussed in section 6.2.12, in that the organisation needs good communication channels for communicating to the rest of the organisation both the need for the change, as well as the results of the successful change which needs to be scaled up. An example of this is Shipyard Company, where one informant points out that successful changes were not always scaled up and implemented in different parts of the organi-

sation, simply because of a lack of communication and cooperation between different business units.

The third requirement we found is formalised learning. This means that in order for the entire organisation to learn from change projects in one department, there have to be learning mechanisms involved. Informants argue that these learning mechanisms should be formalised. As discussed in section 6.2.15 several authors state the importance of learning. [Byrkjeflot \(1997\)](#), [Teare and Monk \(2002\)](#), [Longenecker et al. \(2008\)](#), and [Srivastava and Sushil \(2014\)](#) all argue that learning should happen through some type of systematic approach. We argue that an iterative approach with systematic evaluations after each iteration will serve this purpose, and satisfy the need for formalised learning.

As we have seen in previous sections, scaling is found to be relevant for change under uncertainty, evaluation, and formal iterations, as shown in figure 6.19. In section 6.2.2 we found that when facing uncertainty, companies can change experimentally by first testing out changes 'small scale' in one department or business unit, and scaling up changes that prove to be successful. In practice, this experimental change can be done through agile iterations, where changes are 'tested' out in formal iterations as explained in section 6.2.14. At the end of an iteration, the content of that iterations is evaluated as discussed in section 6.2.15. If the change implemented in the iteration is found to be successful, it can be scaled up by other departments and business units adopting and implementing the same successful change. In section 6.2.14 we found that scaling up successful change in this manner was made easier by using formal iterations, while informal iterations could make scaling harder because of a lack of transparency and communication.

Several informants argue that the company strategy has to be adapted to successful emergent changes. A similar notion is stated by [Bossidy and Charan \(2002\)](#), who argue that in short-cycle businesses the strategy has to be adapted continuously. This is exemplified by several of the companies that when responding to the oil crisis often increased their focus on markets which was initially not part of the planned strategy, but that proved to be successful when entered by experimentation or random opportunities. Such approaches were described by Production Company, Engineering Company A, and Engineering Company B. In this way they seem to scale successful initiatives by adapting the changes into the company's strategy.

Chapter 7

Developing an Agile Change Management Framework

In this chapter we will further develop the agile change management framework, as presented in section 3.3, based on our concept analysis in chapter 6. First, we will discuss the use of agile and autonomous change teams, before we discuss the iterative change process used to implement agile change. Finally, we will discuss the different prerequisites we found for agile change.

7.1 Autonomous change teams

In our analysis in section 6.2.9, we found that the use of autonomous change teams like we suggest in our project thesis (Karud and Årvik, 2016), was seemingly efficient. We found the teams to enable change innovation, and at the same time maintain a totality necessary to prevent silo optimisation that can occur when using local autonomy to drive change. This is done by having the top-management set goals for the team while the team operates autonomously. We argue that by including people from different levels in the organisation, and with different backgrounds, one can ensure multi-disciplinarity. Thus, the autonomous change teams have elements of both top-down and bottom-up management through what we call middle-out management, as discussed in section 3.3.8.

In section 6.2.9 we identified several key factors and requirements related to autonomous change teams. Based on our analysis we present an example of our change team, shown in

figure 7.1, to illustrate how an autonomous change team could be composed in practise.

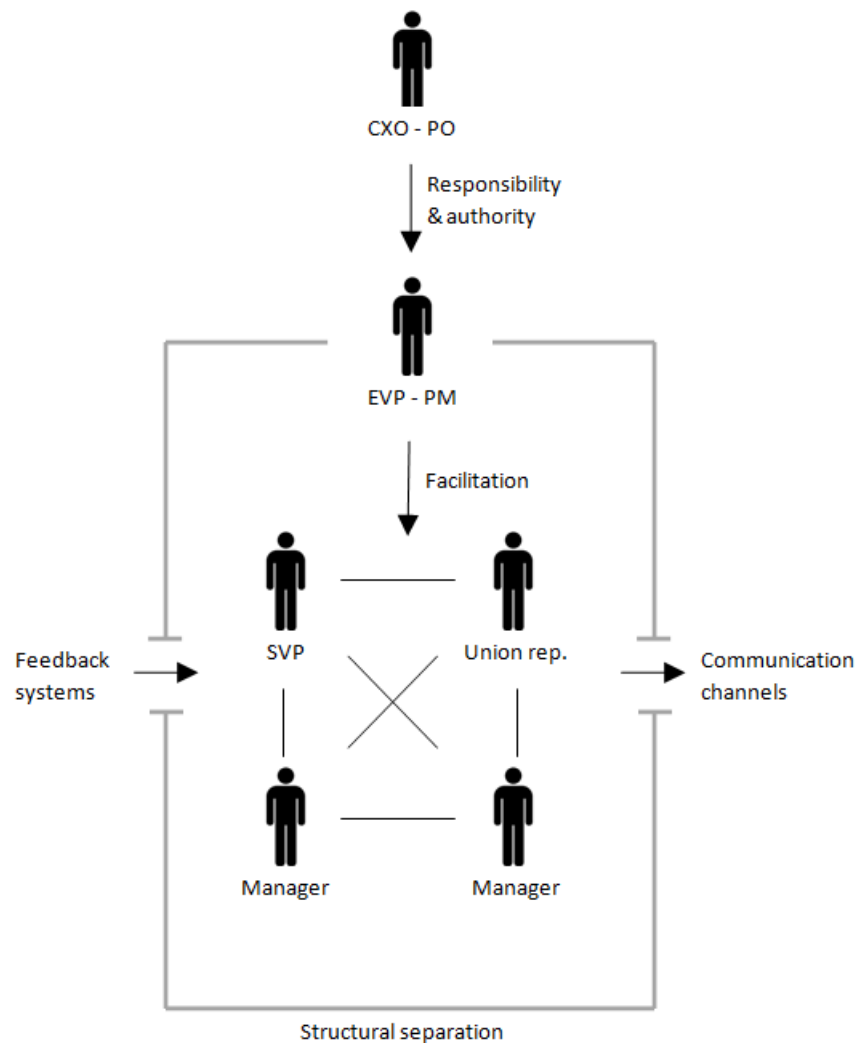


Figure 7.1: Autonomous change team

As discussed in section 6.2.11, we found clear roles and responsibility to be important success factors for change teams. One aspect of this, shown in figure 7.1, is the division between the project owner (PO), exemplified with a CXO in the figure, and the project manager (PM), exemplified by an EVP. We found that both informants and Rigby et al. (2016) argue the importance of clearly defining these roles, and create understanding for what the two roles entail. The project owner has the formal responsibility for the change project, and sets the overall goals of

the project together with the rest of the top-management. This ensures that the change project is embedded in the top-management. The project manager, on the other hand, is responsible for the process execution and implementing the change. It is, as we found in section 6.2.9, very important that the project manager and the rest of the team are not only given responsibility for the project execution, but also the authority necessary to do so, as shown in figure 7.1. This includes access to the resources required for the project execution.

As shown in the figure, our analysis shows that the team should be separated from the rest of the organisation by structural mechanisms to ensure that they are able to operate agile and autonomously. As discussed in section 6.2.1, this separation seems to be necessary when the rest of the organisation is more plan-driven. Without formal mechanisms that ensure the team's ability to operate independently and agile, the team can struggle with finding the necessary resources for the change process. One way to implement this structural separation is to introduce a department responsible for driving change, as discussed in section 6.2.1. This department can have its own budget which allows for flexibility and agility. According to our analysis, the implementation of agile change teams does not seem to require major changes in the organisational structure, as argued by [Rigby et al. \(2016\)](#).

We propose that the project manager should act as an interface between the structurally separated team and the rest of the organisation. As discussed in section 3.1.4, the project manager's primary task should be to facilitate the team, which is shown in figure 7.1. This involves ensuring that the team has the necessary resources at the right time. While the project manager acts as a facilitator, the necessary leadership functions can be exercised by the entire team. As discussed in section 6.2.9, a change management team with shared team leadership and democratic decision processes seems well suited for managing the agile change process.

According to our analysis, the team itself should consist of team members with different backgrounds and from different levels of the organisation, as argued in section 6.2.9, to ensure both totality and multi-disciplinarity. As shown in figure 7.1, we also strongly suggest including union representatives in the change team. As discussed in section 6.2.10, involvement is very important in the change process as it reduces change resistance and enables learning. According to our analysis, including union representatives in the change team will ensure representative involvement, which is well suited for the Norwegian work culture and the Norwegian

cooperation model as discussed in section 3.1.3. We also discussed how involving union representatives in the change management can help drive the change, and at the same time provide different perspectives on the change required for the previously discussed totality.

The two final aspects of the autonomous team illustrated in figure 7.1, are feedback systems and communication channels. These two mechanisms enable interaction with the rest of the organisation while still maintaining the previously discussed structural separation. Formalised feedback systems can help the team to continuously improve, as discussed in section 6.2.16, and at the same time enable the team to react quickly to changes in the environment. According to our analysis, examples of feedback systems that can be used are suggestion systems and computer communication systems for direct feedback. It is also important for the team to formally communicate the content of the changes, as well as the results of the changes, in order to create understanding for the change project and to reduce frustration as discussed in section 6.2.12. Examples of communication channels that enable the necessary clear communication are newsletters, meetings, and conferences.

7.2 Iterations

In our project thesis we proposed using agile iterations to manage change. In this thesis we have expanded upon this. The use of an iterative process to implement change is analysed in section 6.2.14. In this section we will put the pieces together, and based on our analysis propose a more detailed framework for an agile iterative change process. The outline of our proposed change process is shown in figure 7.2.

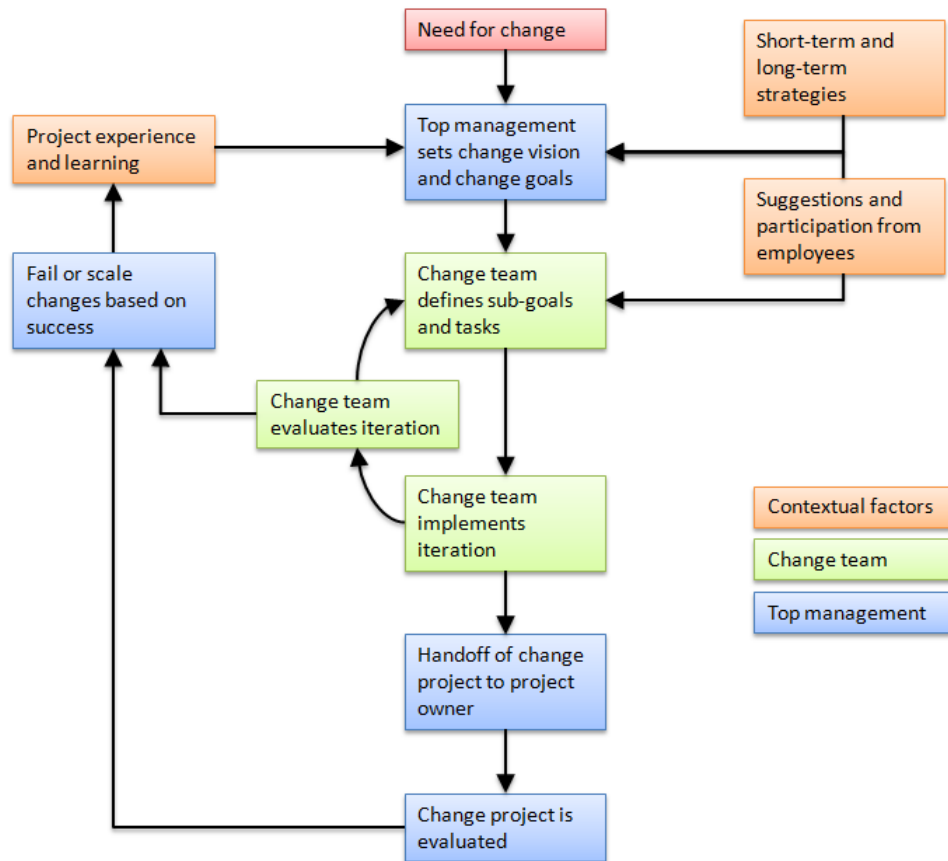


Figure 7.2: Flow chart of the change process

As shown in figure 7.2, the source of the change process is a given need for change. We argue that the top-management should create a change vision based on this need, as well as more concrete and measurable change goals, as discussed in section 6.2.6. These goals should reflect a balance of the company's short-term and long-term strategies, as analysed in section 6.2.5. In addition, we argue that feedback from employees and experience from previous change projects should also help shape the vision and change goals, as shown in the figure. In some cases, the goals could be changed during the process based on feedback and experience. This will be particularly relevant in change projects with large degrees of uncertainty where the goals more often emerge over time as discussed in section 6.2.6. In other cases, the change goals will be more permanent and persistent because the specific change case requires a greater degree of structure or predictability. An example of this is the transformation process in Infrastructure Company A, as discussed in section 6.2.6. Thus, how much the goals can be changed based on

feedback will vary from case to case.

Once the change team is given the vision and goals from the top management, they should be responsible for implementing the change, as discussed in the previous section. We recommend that the change goals should be broken down into more actionable sub-goals, as discussed in section 6.2.6, so that each goal can be met after a single iteration. At the start of the project, after the initial goals are broken down into sub-goals, we suggest that the change team should give the sub-goals different priorities. In this way, the team can start by choosing the sub-goal with the highest priority, and execute an iteration focusing on implementing the change required to meet the chosen sub-goal. After the first iteration they can review the list of sub-goals, possibly making changes to them or changing the priority of specific sub-goals, before they choose the next prioritised sub-goal to implement. Sub-goals could be discarded in between iterations if they are found to not contribute to the overall goals as intended. This process then repeats until all remaining sub-goals are met, which means that the overall goals that the sub-goals were based on are met as well. By prioritising the goal, one ensures that the most important changes are made first. Another way of prioritising the sub-goals is to make sure that the easiest changes are implemented first, which can also be beneficial in some circumstances according to our analysis. When using scenario planning, as discussed in section 6.2.2, the prioritisation could also be used to make sure that the changes that are most applicable to most of the possible scenarios are made first. In this way 'safe' changes are implemented before the changes that require more information to be implemented successfully.

Once all of the iterative processes are complete, and all sub-goals are either met or discarded based on feedback, the project could be handed off from the change team to the project owner. This marks the formal end of the project. After the project is handed off, the entire change process should be formally evaluated, as discussed in section 6.2.15. Here, we argue that both the completion of the change goals and the execution of the change process itself should be assessed. By evaluating how the change process was carried out, one could discover deeper root causes for why a given change was either successful or unsuccessful, as discussed in section 6.2.15. The company should also ensure that some sort of formal mechanism is in place which ensures that the learning from the evaluation is used as feedback to base future change projects on, as shown in figure 7.2.

Depending on the nature of the change project, changes from the individual iterations or the product of the entire change process could be scaled up to cover the entire organisation. If each iteration is relatively independent from one another, and used in an experimental manner, the change implemented in each iteration should be evaluated to determine if the change should be scaled up to cover the entire organisation, as discussed in section 6.2.17. We argue that this is the recommended way to use agile change management as it allows companies to fail fast, as discussed in section 6.2.14. However, in some cases the change can be so complex that it is difficult to scale the results from only one iteration, as they are all interconnected. In these cases one could evaluate the entire change at the end of the change process, and then decide if it should be scaled up.

Another factor which has to be fitted to the context of the desired change is the time frame of the project. If the purpose of the project is to continuously change through experimentation, the project does not need a given time frame. When implementing more concrete and planned changes, on the other hand, the project will often have a given end date. In these cases it could happen that it is not possible to address every sub-goal, as there is not enough time for the required amount of iterations. In these cases we argue that it is particularly important to prioritise the different sub-goals properly to make sure that the most important changes are implemented before the deadline.

7.3 Prerequisites for agile change

In chapter 6 we discovered and discussed many factors required for the different aspects of agile change. In this section we present some of the most important prerequisites that should be considered when deciding if our agile change management framework is suited for an organisation.

- **Uncertainty:** Perhaps the most important contextual aspect to consider before using agile change management is uncertainty. As discussed in sections 6.2.1, 6.2.2, and 6.2.3, agile change management is primarily designed to provide the flexibility required when changing in uncertain and unpredictable environments. Our findings also suggest that Agile is well suited for managing change when faced with uncertainty. However, if the change process is not characterised by uncertainty, it may not be necessary to use agile

change management. As argued by one informant from IT Consulting Company, an agile approach might not be necessary if the case is in the "Simple" or "Complicated" categories presented by [D'Souza and Renner \(2016\)](#). In these cases the changes are predictable, as discussed in section [3.2.2](#).

- **View on change:** As seen in section [6.2.4](#), companies need a continuous view on change in order to get the most out of Agile. This continuous change view is found to be required for employees to accept the constant state of change that agile change management entails. If companies view change as sequential processes, and expect changes to be independent and bounded events, then agile experimental change can seem chaotic and thus cause frustration and change resistance. However, it is possible that a continuous view is not enough to prevent stress from continuous change. Therefore, we argue that the effects of prolonged continuous change should be studied further, as will be discussed in section [8.2](#).
- **Strategic horizon:** Based on our findings it seems like Agile needs a relatively longer horizon and is more suited for changes with a long-term focus. Both instances of agile change management in our sample were changes concerned with adapting the organisation to the future, and not necessarily to the current environment. Even Engineering Company B, which utilised agile change management in their business transformation project, used a more traditional approach when downsizing. The reasoning for not adopting a gradual approach to this was that there was not enough time for such an approach. Based on this it seems that it can be hard to use Agile for changes with only short-term goals, and that the changes need long-term characteristics. Our informants argue that long-term changes are easier if the company has a private owner structure. It should be noted that with iterations the change project will "deliver" changes quickly after a project has started, so the deciding factor seems to be the horizon of the end product of the change.
- **Culture:** As discussed in section [6.1](#), [Sahota \(2012\)](#), [Denning \(2016\)](#), and the informants with experience with Agile argue that an agile culture is needed for utilising Agile. Agile is more than a methodology, as discussed in section [6.2.1](#), and an agile culture is needed to reap the benefits of the agile process. An important aspect of this is the cooperation,

involvement, and teamwork required, which seem to demand a low power distance in the team. We previously explained that changing corporate culture is outside the scope of this thesis. However, the companies currently utilising methods based on top-down control and other similar approaches to change management do not seem to have a culture suited for agile change management.

- **Understanding:** Several informants, as well as [Rigby et al. \(2016\)](#), argue that an understanding for Agile is needed at all levels to utilise agile change management. Both agile and plan-driven units need to understand each other in order to cooperate efficiently. In addition, it is important that the top management understands both ways of working. Creating an understanding for Agile and teaching relevant stakeholders in the project of the agile concepts should, therefore, be a priority early in the adoption process. A way of doing this, as suggested by both Infrastructure Company A and [Rigby et al. \(2016\)](#), is giving the stakeholders a language they can use to talk about Agile and its relation to the rest of the company.
- **Formalisation and standardisation:** As discussed in the last chapter, and especially in section [6.2.14](#) and section [6.2.15](#), there are seemingly multiple challenges with utilising informal processes in change management. It seems like an informal approach without a defined structure and framework faces challenges with evaluation, communication, scaling, and involvement. Formalising the process is, therefore, considered a prerequisite for agile change management. A large part of this is being clear about how one actually practices change management. Another aspect is the topic of standardisation. As discussed in section [6.2.14](#) and [6.2.17](#), a certain degree of standardisation seems to be required for scaling successful changes. As discussed, the degree of standardisation needs to be appropriate in order to not hamper the performance of the organisation. Finding this balance is outside the scope of this thesis.
- **Feedback:** As discussed throughout chapter [6](#), feedback is important to make the necessary adjustments during the change. This implies a possibility for employees to give formalised feedback, both positive and negative. This requires a culture which allows for honesty, which was discussed above. In addition, it requires formalised channels where

employees can give feedback. These channels were discussed in section [6.2.16](#). In our sample, digital solutions with direct feedback, informal solutions, and formal committees were present. As discussed in the previous point, the informal solutions seem to have multiple challenges, which indicates that other solutions are more preferable.

Chapter 8

Summary and Recommendations for Further Work

8.1 Summary and conclusions

Uncertainty is seen as a major challenge in change management, as changes happen faster than before, and markets are becoming more and more unpredictable. Therefore, the field of change management has to adapt to overcome these challenges. A field which has experienced similar challenges is software development, where agile methods were developed to handle uncertainty. Throughout this study, we have seen how agile concepts can be used to handle uncertainty in change projects, through what we define as agile change management.

In this thesis we set out to answer the following research question:

"In which ways can companies manage change in unpredictable environments using agile change management?"

In order to answer the research question, we defined two research sub-questions. First, we studied which parts and aspects of Agile can be applicable to change management. The framework for agile change management presented in chapter 7 answers this sub-question. This framework is based on the use of autonomous change teams, and an iterative change process, as proposed in our project thesis (Karud and Årvik, 2016). In this master's thesis, we expand upon the framework from the project thesis as we developed the details of both the change team and the iterations based on the findings from our empirical data. The second research sub-question was

concerned with what is required for companies to utilise agile change management efficiently. Through the analysis of our empirical data, we identified several conditions or prerequisites that are seemingly needed for utilising agile change management, which were presented in section 7.3. These identified prerequisites answer our second sub-question. Thus, our framework for agile change management answers both of our research sub-questions. Therefore, it also answers our main research question as it presents a way for organisations to use agile concepts for managing change in uncertain and unpredictable environments.

By answering our main research question we argue that we have made several contributions to the field of change management. First, we have gained insight into how Norwegian companies manage change when faced with uncertainty. Second, we have shown how concepts from the field of agile software development can be applied to change management. Third, we have developed a framework for agile change management based on autonomous change teams and iterations, which is focused on managing change in uncertain environments.

These contributions will hopefully have several practical and theoretical implications. At the practical level, we believe that companies utilising our framework could manage change with a lower failure rate than the 60-70 % presented by [Ashkenas \(2013\)](#). This could save companies both time and resources, and thus increase profitability. From our study, it seems like many companies can benefit from a conscious approach to change under uncertainty, as several companies use informal change practises, which we found to be problematic. Our study, therefore, highlights the need for explicitly formalising change processes. Another practical implication is a de-emphasis on using plan-driven approaches to change. It seems like plan-driven approaches to change management are not capable of handling uncertainty sufficiently, which could be a contributor to failure. We have in this study pointed out some of the problems related to plan-driven approaches in uncertain environments where unpredictable events are likely to disrupt such plan-driven change.

The problems with plan-driven approaches to change management also have theoretical implications. Much of the current change management literature is centred around plan-driven approaches for implementing change. Therefore, we argue that an implication of our study is the need to focus more on alternative and more flexible approaches to change management, which are less dependent on detailed plans. Another theoretical implication is the need for more

interdisciplinary research. We have found that it can be beneficial to apply concepts from software development in change management. However, it is also possible that the field of change management could benefit from concepts from other fields as well. In the same way, it is possible that agile concepts could be applied to other fields. For example, some of our informants expressed interest in applying agile concepts to marketing, product development, and production.

8.2 Recommendations for further work

Because agile change management is relatively unexplored in existing literature, there are several aspects of it that could be subject to further research. In this section we give some recommendation for areas we believe are interesting to study further. Our recommendations can be categorised into three different categories depending on the required time frame of the study: short-term, medium-term and long-term.

Since our study has been conducted with Norwegian companies only, a short-term recommendation for further studies would be to study the use of agile change management outside of Norway. Another short-term recommendation would be to study other types of industries than the ones which we have studied. Thus, one could assess if our findings are applicable to other cases in other contexts.

In a medium-term perspective, it would be interesting to conduct quantitative studies focused on the success rates and costs related to agile change management. In this way, one could assess the economic impact of using agile change management. Another very interesting medium-term research angle would be to cooperate with software researchers on the topic of agile adoption. Agile adoption is an important research topic in the software research environment ([Dingsøy et al., 2012](#)). In addition, [Gandomani et al. \(2013\)](#) argue that a change management perspective is needed for adopting Agile in software development. Therefore, we consider the topic of agile adoption as an opportunity for interdisciplinary research.

An area where a long-term study might be required is to look into possible negative outcomes of agile change, such as the employees' reactions to rapid changes in the form of e.g. resistance and frustration. As discussed, agile change management involves frequent changes

in an experimental fashion. It is possible that this proves to be demanding for employees even with involvement, clear communication, and a culture that is used to changes. We, therefore, suggest a comparative longitudinal research design in order to study this aspect and possibly compare it to other change management approaches.

Another long-term possibility for further research is inter-disciplinary studies focused on improving the field of change management. Throughout this thesis, we have shown how concepts originating from software development can be applied to change management to overcome large challenges in the field. However, it is possible that cooperating with other fields through interdisciplinary research could yield similar results. We argue that change management in a more complex world requires more multi-disciplinarity as challenges are becoming more and more complex, and often span several fields. Therefore, we recommend cooperating more with researchers from other fields, to find even more possibilities for improving the field of change management.

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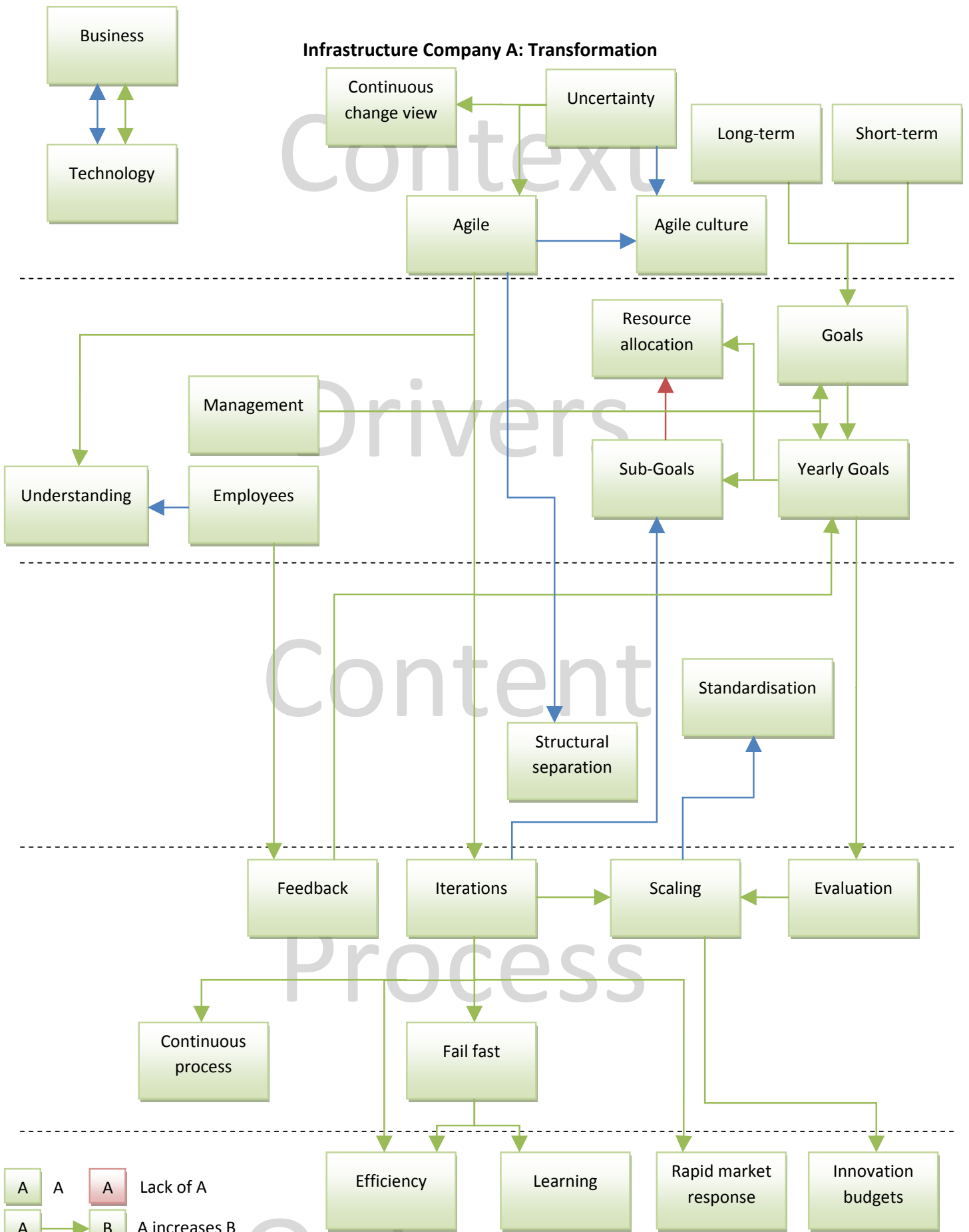
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Appendix A

Case figures

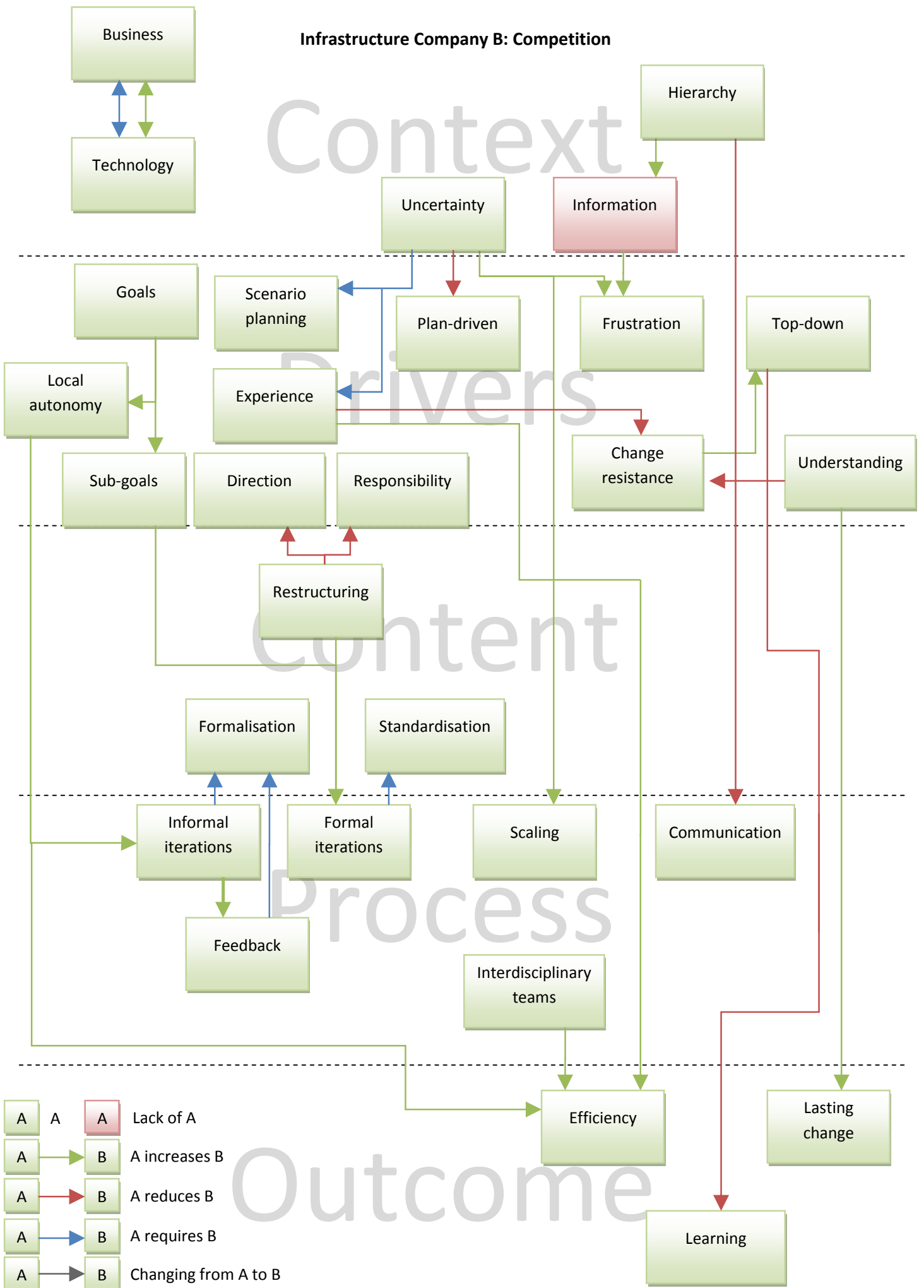
The figures which illustrates the relations between variables in each case are presented in this appendix. These figures were derived from the key findings from each case, described in section [6.1](#), and formed the basis for the concept analysis in section [6.2](#).

Infrastructure Company A: Transformation

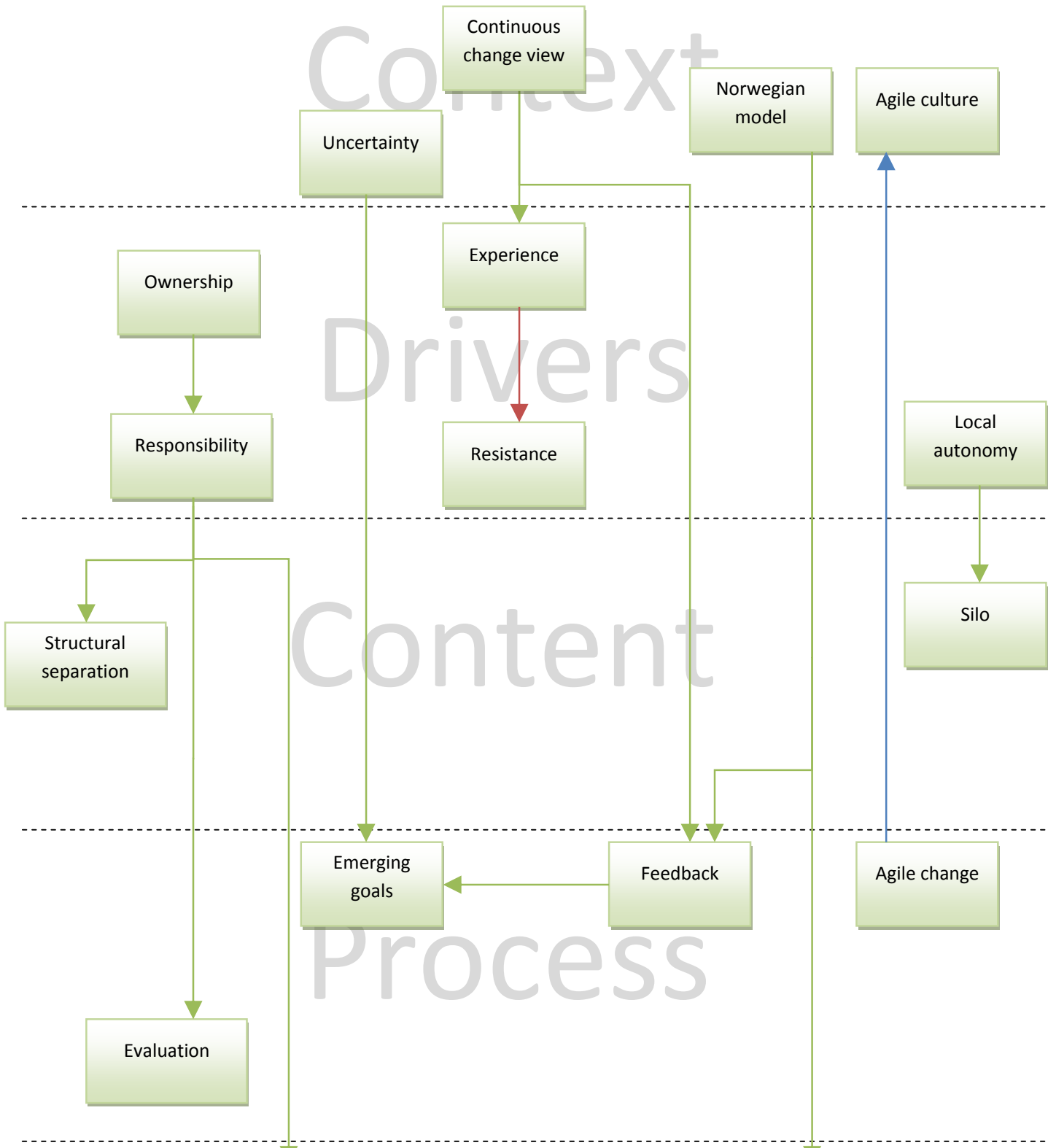


-    Lack of A
-    A increases B
-    A reduces B
-    A requires B
-    Changing from A to B

Infrastructure Company B: Competition



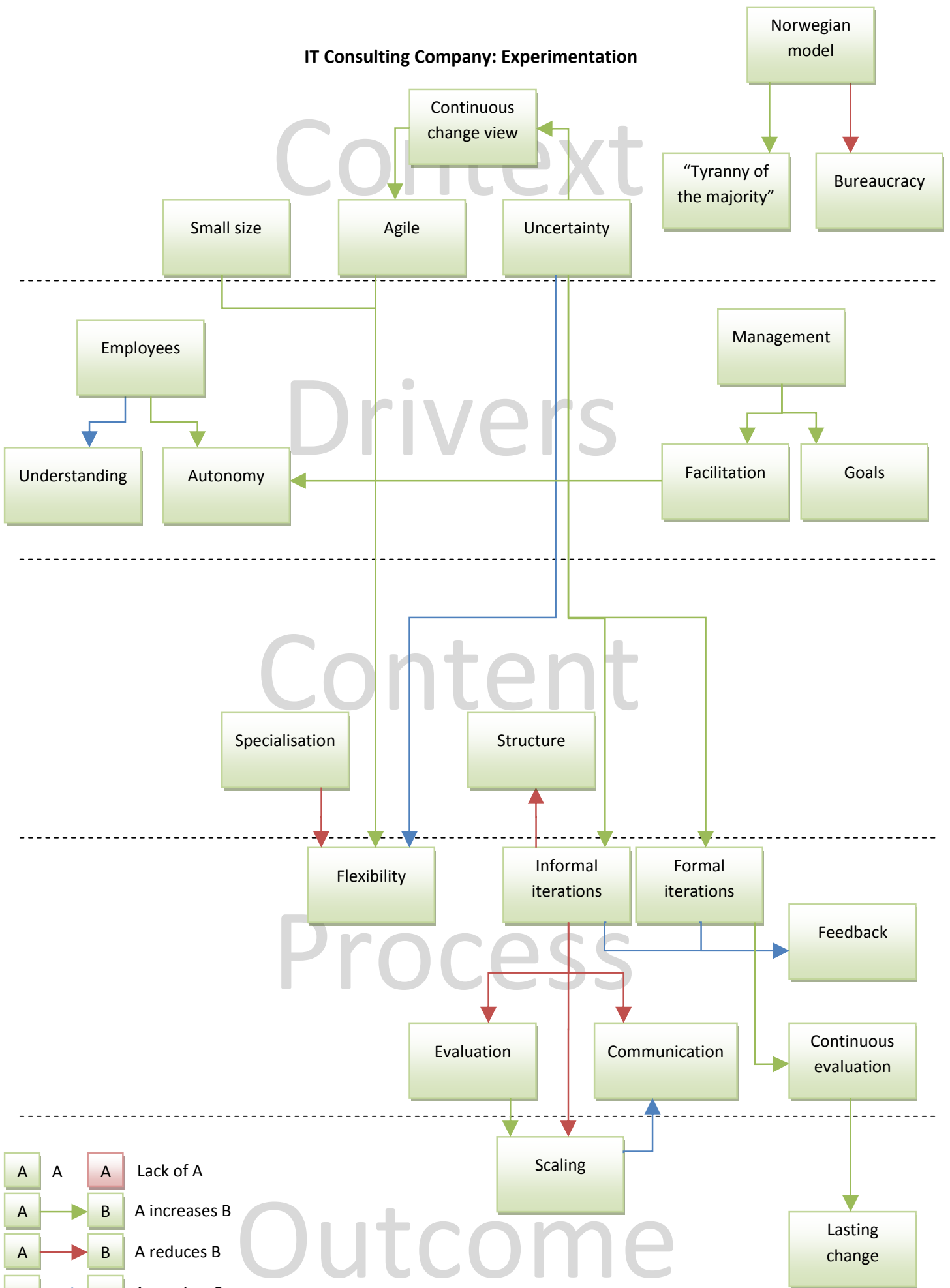
Infrastructure Company B: Performance



- A → A Lack of A
- A → B A increases B
- A → B A reduces B
- A → B A requires B
- A → B Changing from A to B

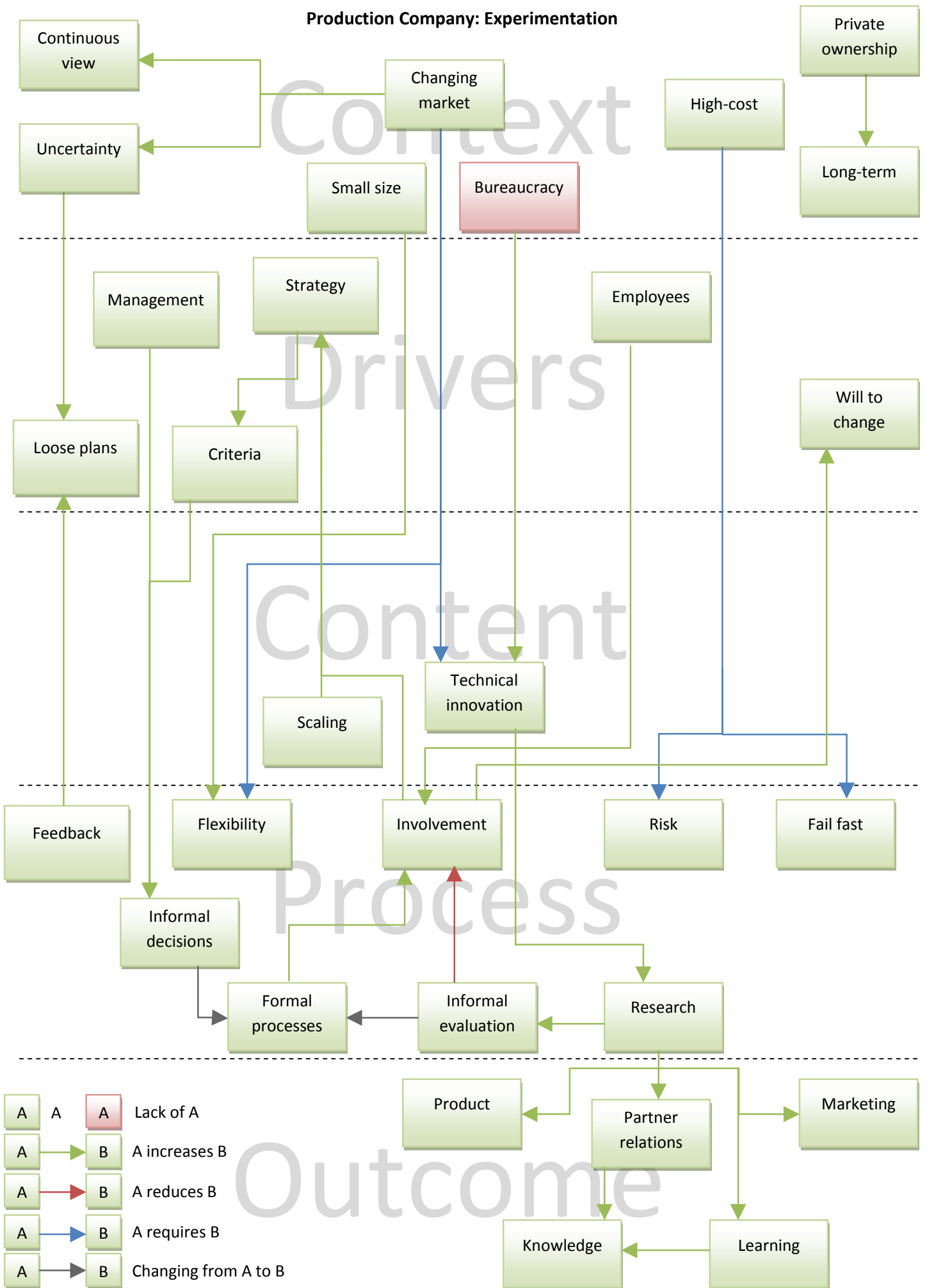
Outcome

IT Consulting Company: Experimentation

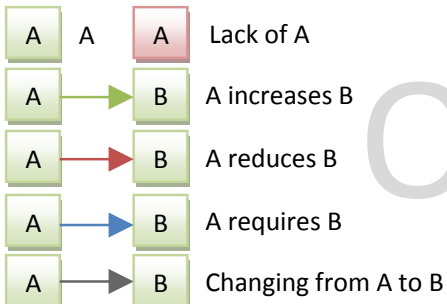
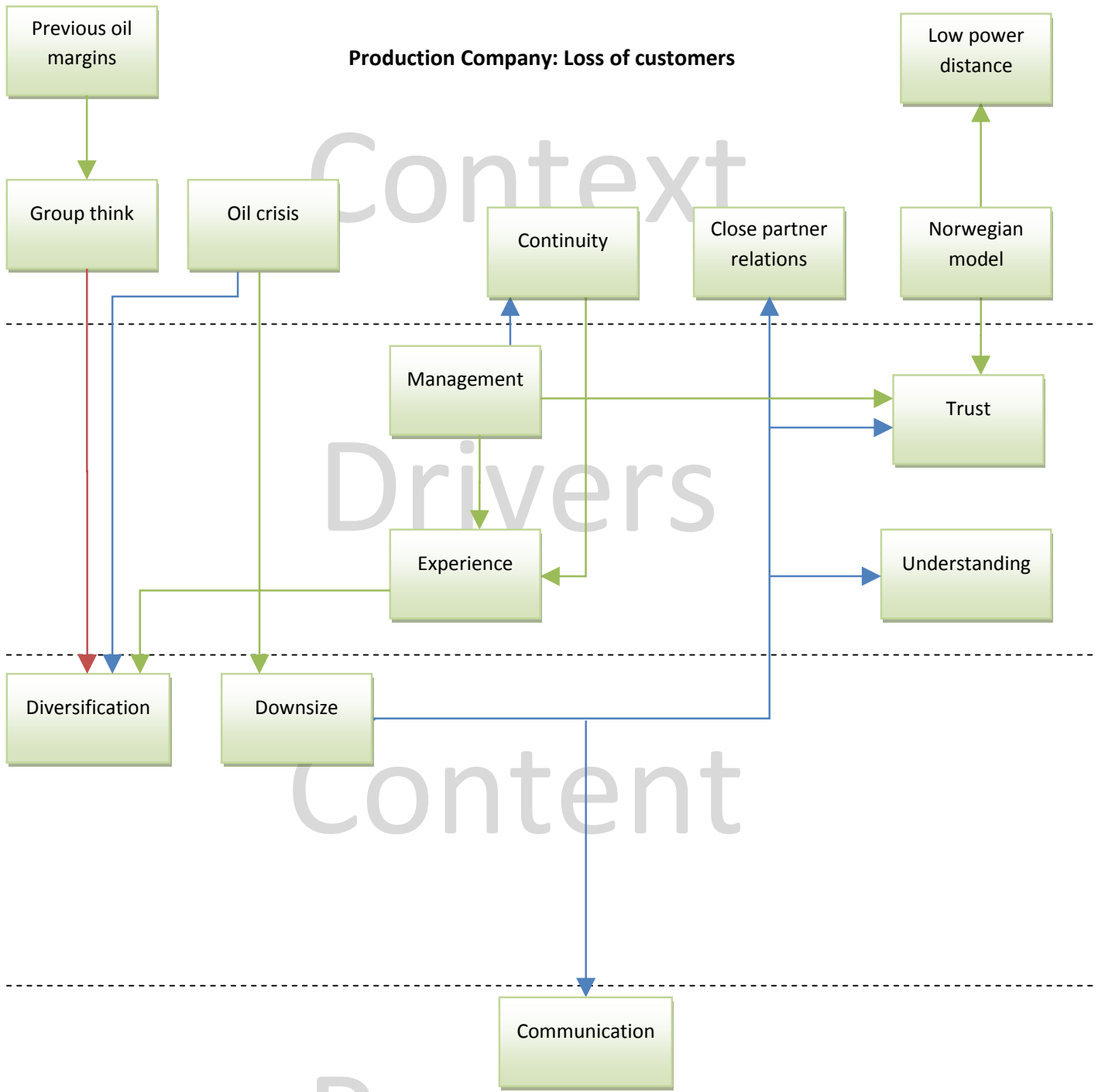


- A A A Lack of A
- A B A increases B
- A B A reduces B
- A B A requires B
- A B Changing from A to B

Production Company: Experimentation

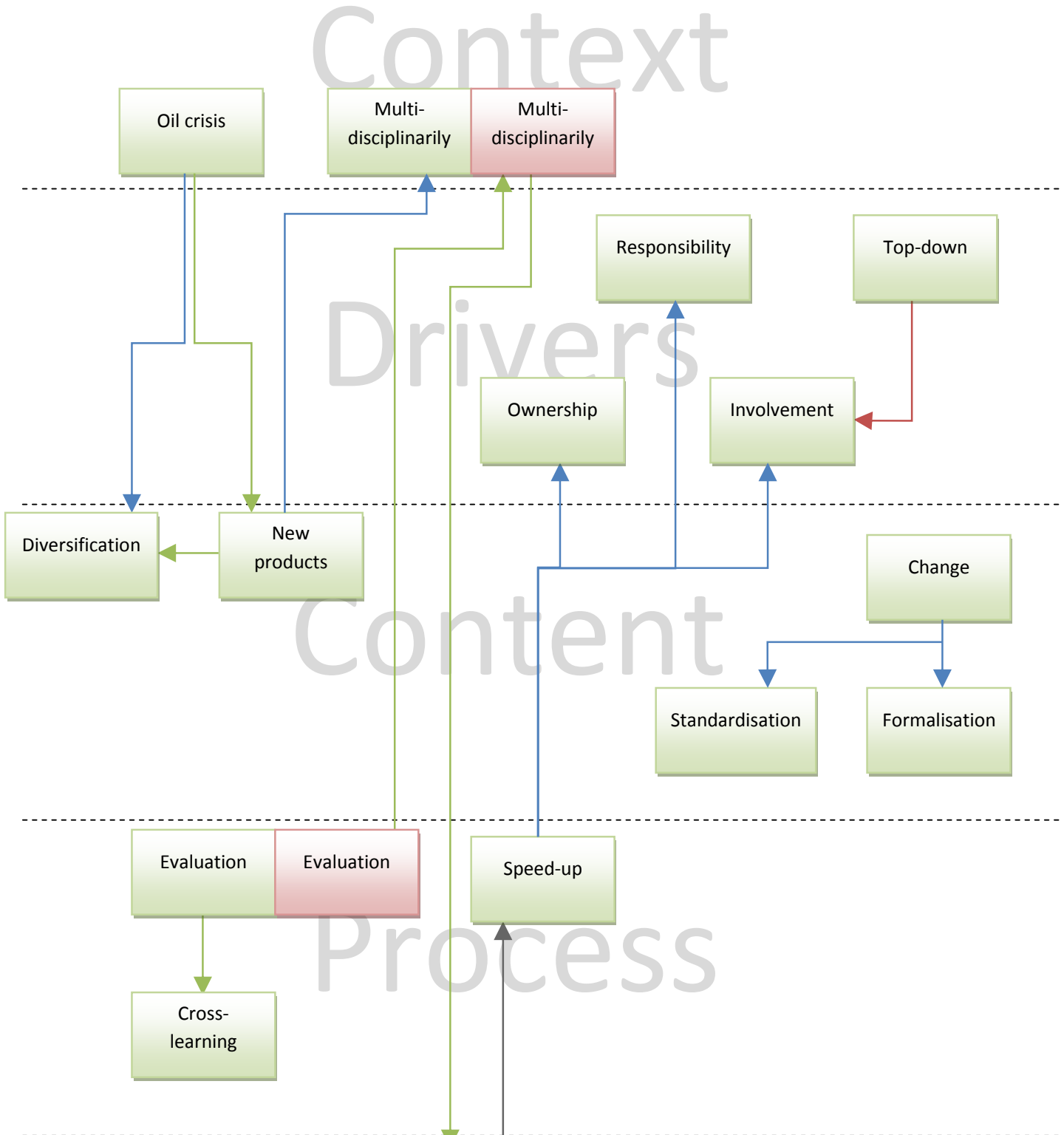


Production Company: Loss of customers



Outcome

Shipyards Company: Transformation



- A A A Lack of A
- A → B A increases B
- A → B A reduces B
- A → B A requires B
- A → B Changing from A to B

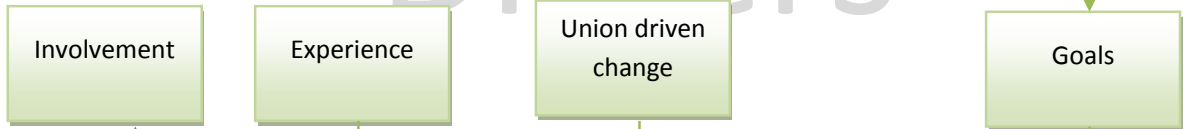
Outcome

Shipyards Company: Suggestion system

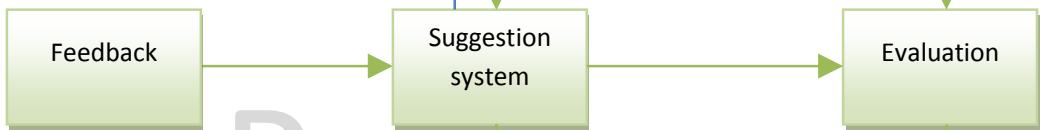
Context



Drivers



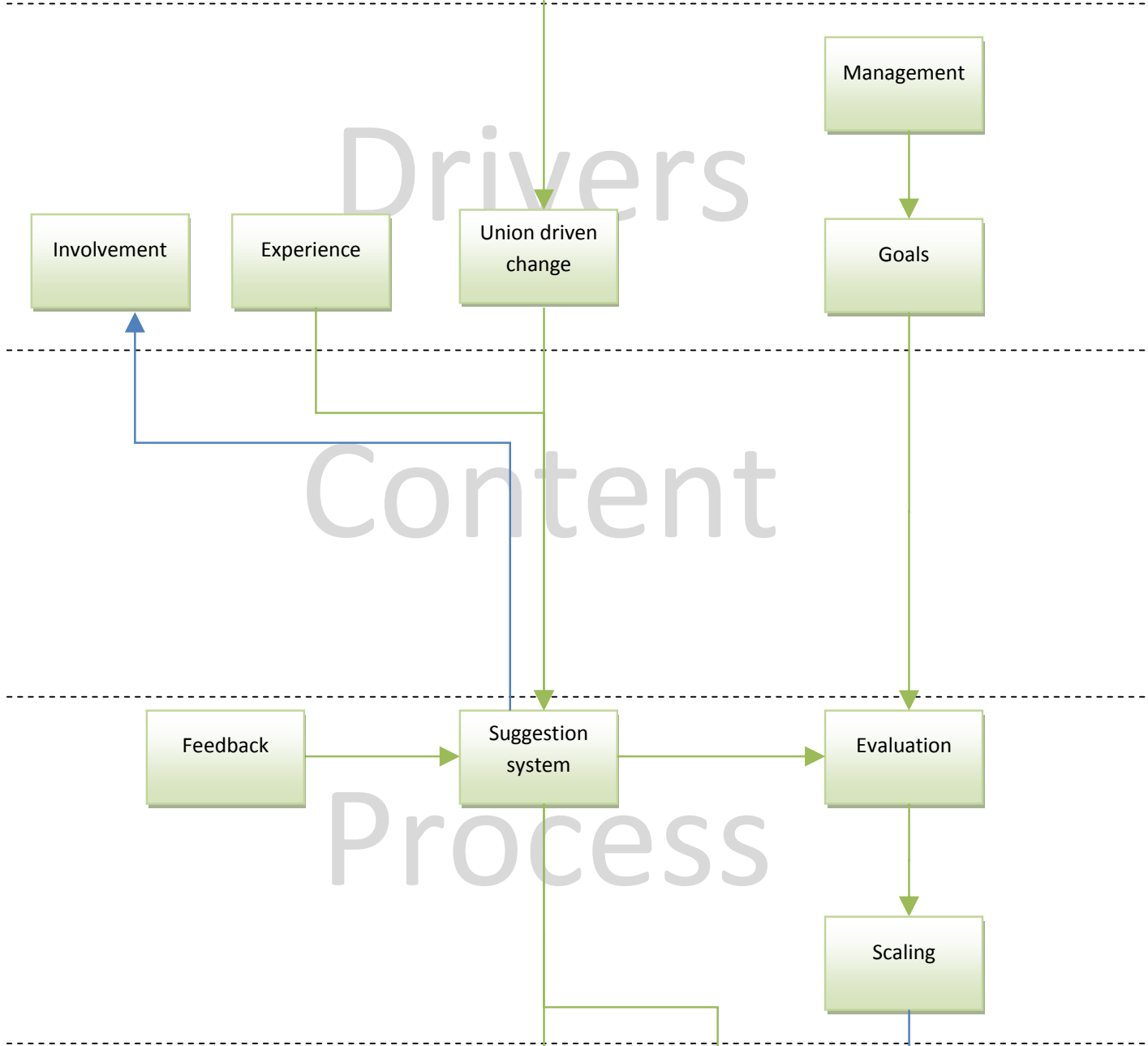
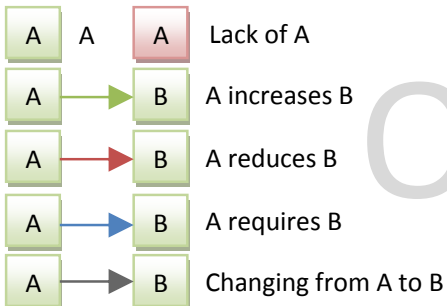
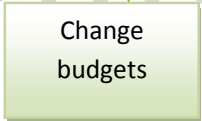
Content



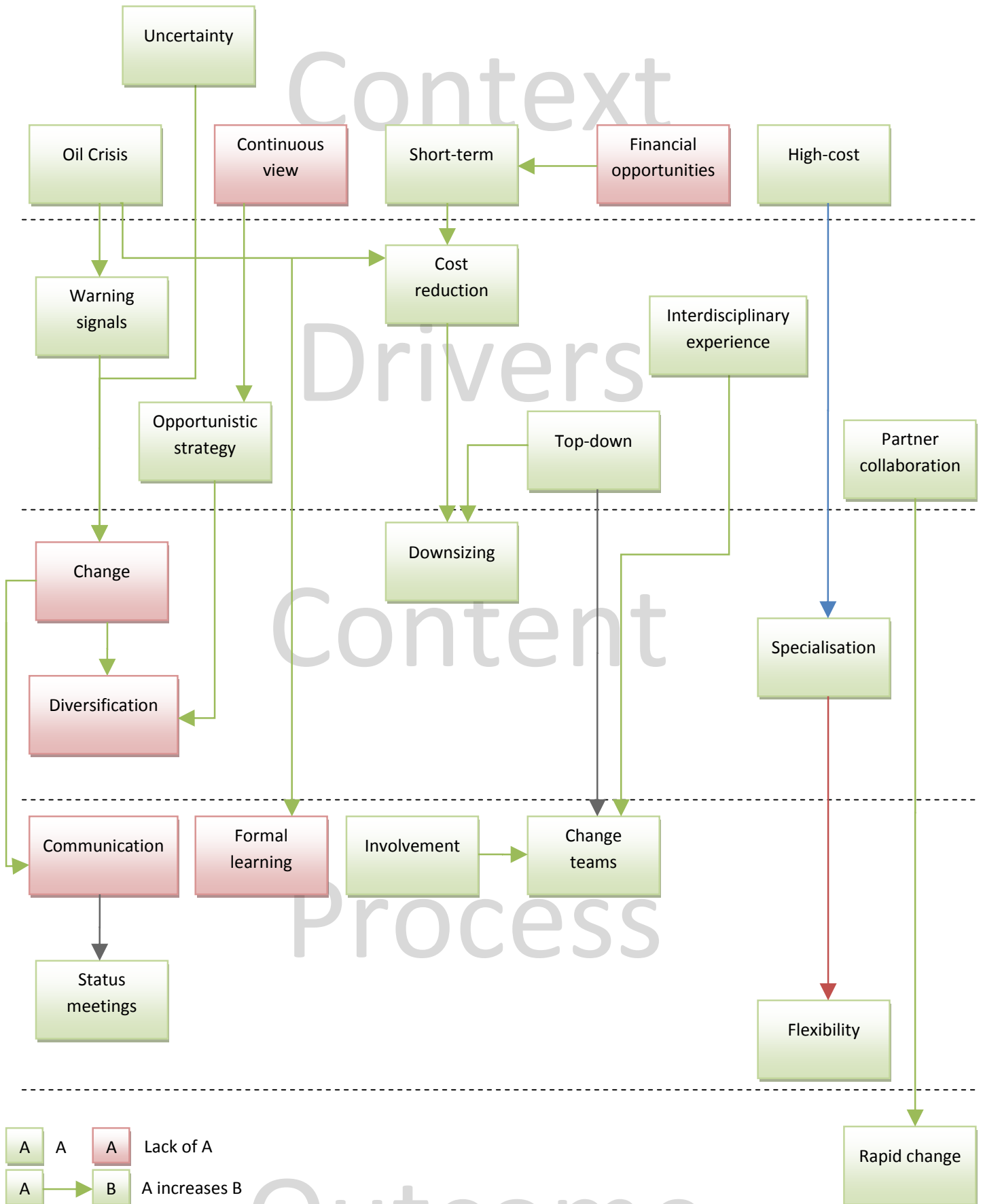
Process



Outcome



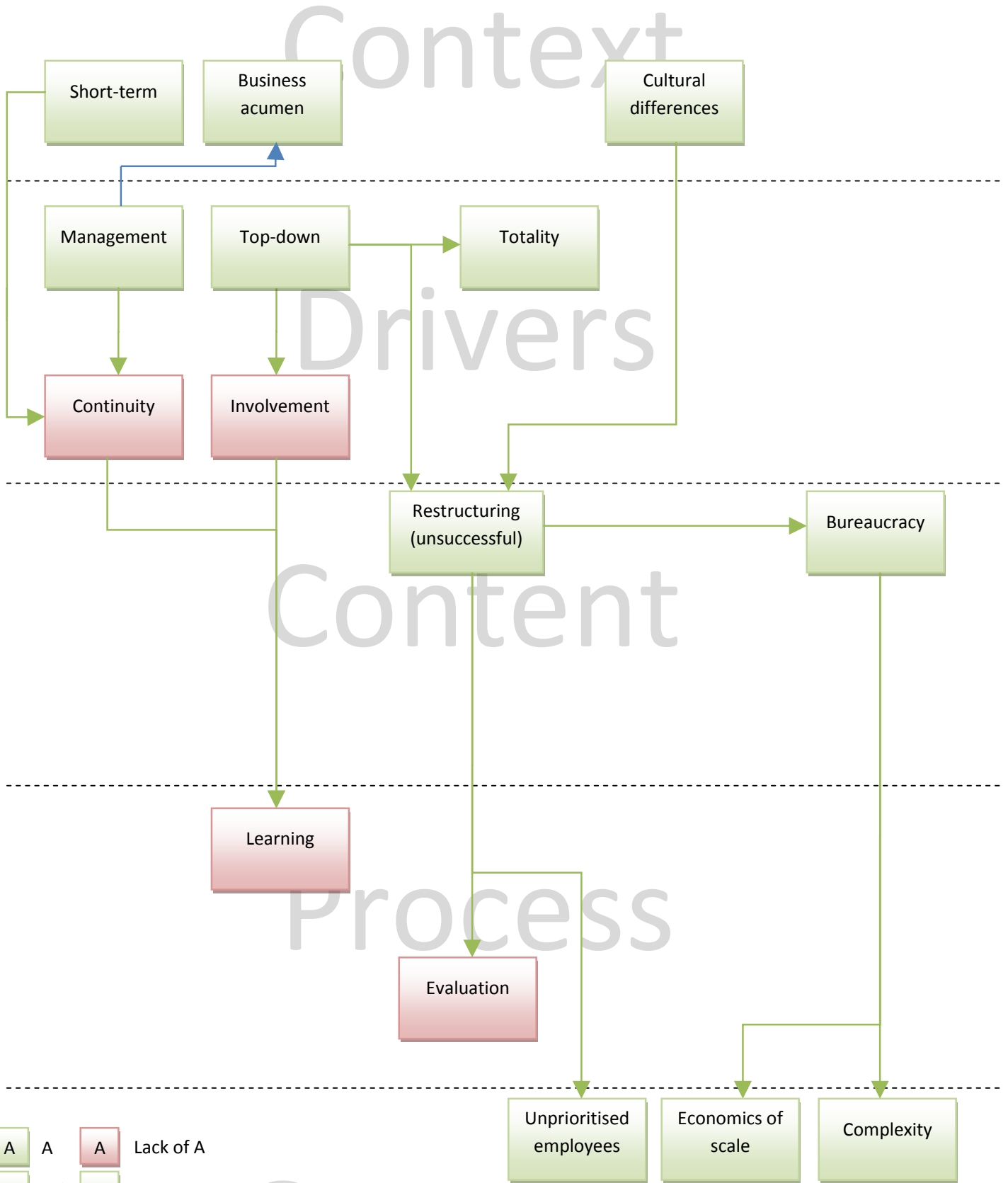
Shipowner Company: Reaction to oil crisis


















- A A A Lack of A
- A → B A increases B
- A → B A reduces B
- A → B A requires B
- A → B Changing from A to B

Outcome

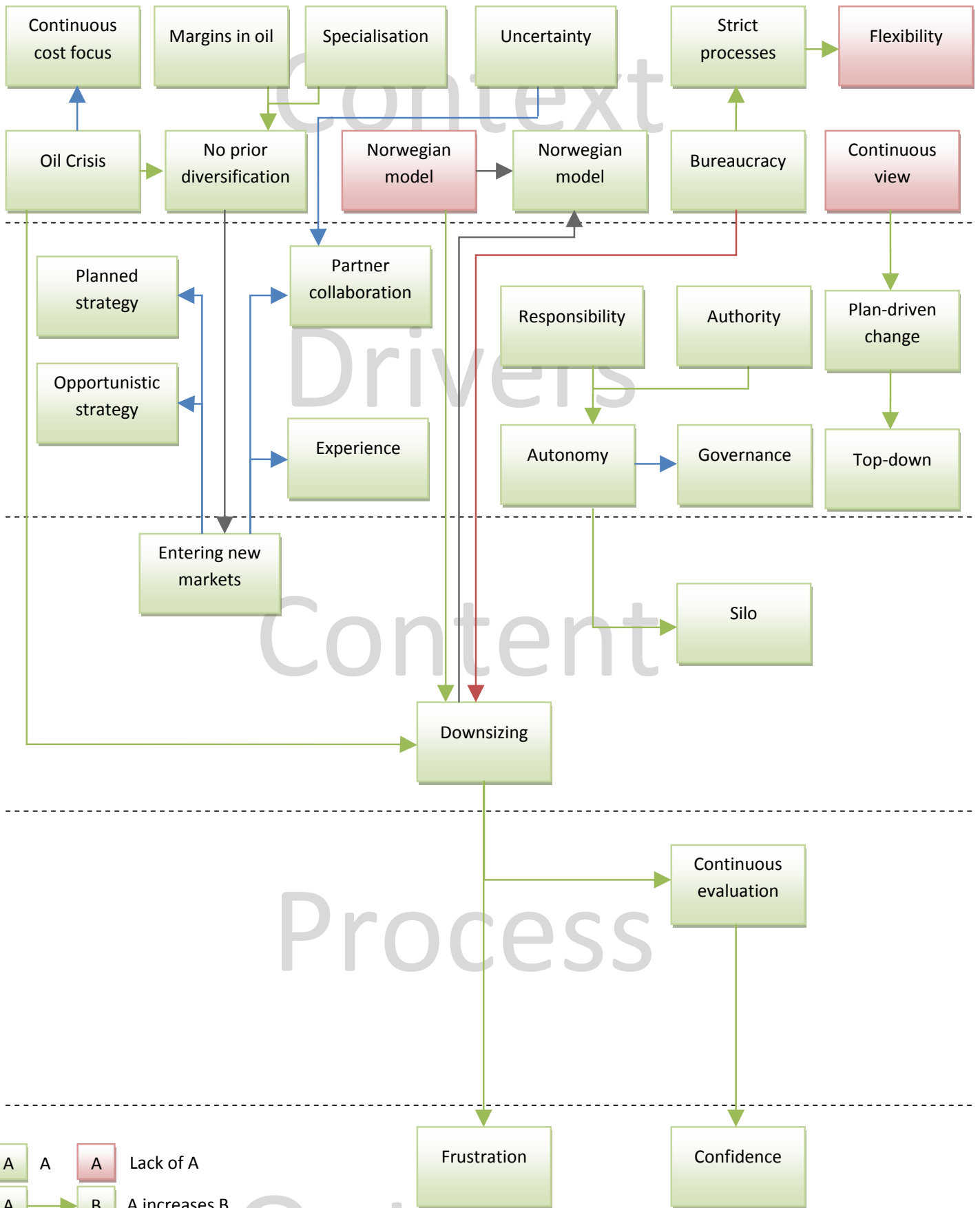
Engineering Company A: Restructuring



-    Lack of A
-    A increases B
-    A reduces B
-    A requires B
-    Changing from A to B

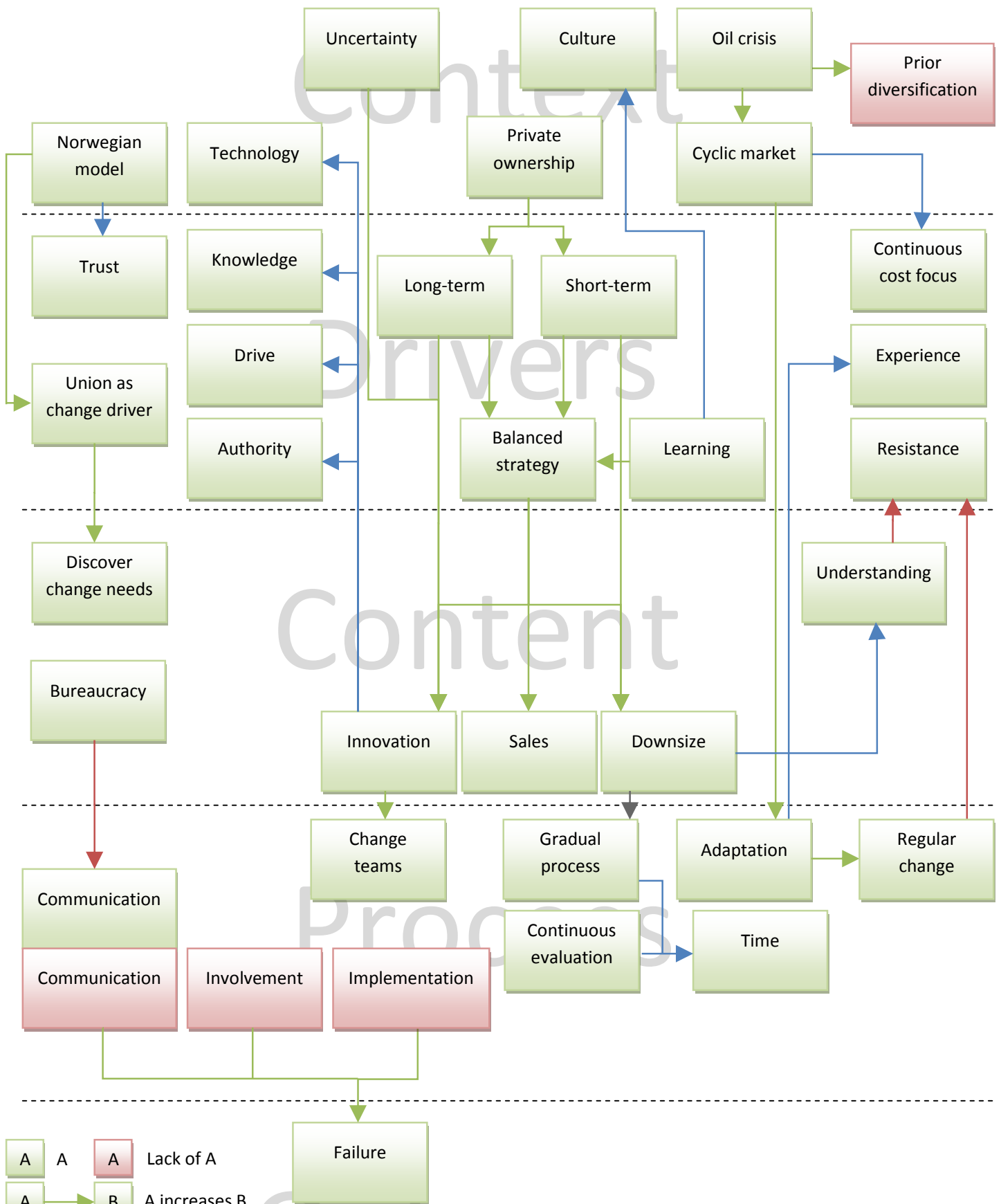
Outcome

Engineering Company A: Transformation



- A → A Lack of A
- A → B A increases B
- A → B A reduces B
- A → B A requires B
- A → B Changing from A to B

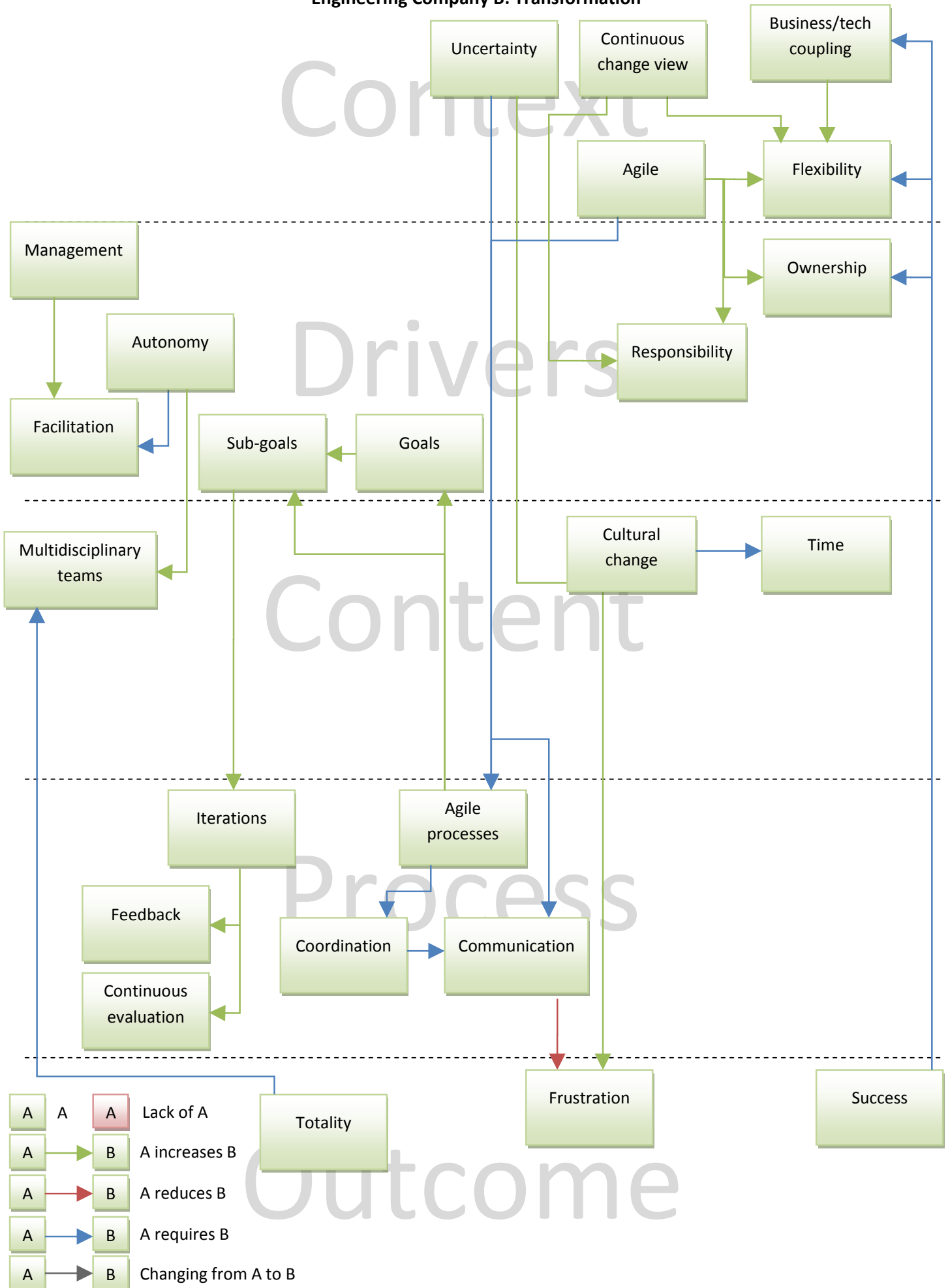
Engineering Company B: Reaction to oil crisis



- A A A Lack of A
- A → B A increases B
- A → B A reduces B
- A → B A requires B
- A → B Changing from A to B

Outcome

Engineering Company B: Transformation



Appendix B

Interview guide

This appendix presents the interview guide we used to structure our interviews. Because we chose a semi-structured interview approach, as discussed in section [2.2.3](#), the guide is based on a series of key points we could use to give some structure to the interview without preventing an open discussion. Thus, the interview guide was used as a tool to prompt discussion, but was not necessarily followed strictly, as the interviews could often go in new and more interesting directions. The guide is written in Norwegian, as all interviews were conducted in Norwegian.

Intervjuguide - Semi strukturert

Om informant?

- Stilling, avdeling
- Hvor lenge har du vært ansatt i selskapet?
- Hvor lenge har du vært ansatt i stillingen?
- Hvilken posisjon i har du i selskapet?

Fortell om endringscaset? (hvis spesifikk case)

- Driver, prosess, innhold, omfang, kontekst, utfall
- Hva gikk bra / ikke bra? Hvorfor? Hva kunne vært gjort annerledes?

Hvordan besluttes, planlegges og utføres endringer hos dere?

- Benyttes spesifikke rammeverk? Hvilke?
- Hvem deltar i hvilke prosesser? Toppleidelse? Mellomledelse? Ansatte?
- Har dere egne team for endringsledelse?
- Hvilke(n) rolle(r) har du i endringsprosessen(e)?

Hvordan går dere frem for å lede endring i uforutsigbare omgivelser?

- Hvor fleksible er prosessene fra spørsmålet over? Egnert for uforutsigbarhet?
- Hva gjør dere for å håndtere uforutsigbarhet?

Benytter dere iterasjoner i utførelsen av endringsprosesser?

- Hvis ja, hvilken effekt har dette hatt?
- Hvis nei, benytter dere andre former for eksperimentell endring?
- Hvis 2x nei, har dette hatt innvirkning på endringer i uforutsigbare omgivelser?

Benytter dere autonome team for endringsledelse?

- Hvem er med i eventuelle endringsteam?
- I hvor stor grad kan ansatte bidra til endringsprosesser? Forslag? Ansvar?
- Tror du/dere ansatte føler eierskap til endringer? Hvilken effekt har dette?
- Hvor møter endring mest motstand/problemer, planlegging eller utførelse?

Fortell om en endring som har vært vellykket? (hvis ikke en spesifikk case)

- Hva gikk bra? Hva var det som gjorde at det gikk bra?
- Hvor stor grad av uforutsigbarhet var det under endringen? Usikre omgivelser?

Fortell om en endring som ikke har vært vellykket? (hvis ikke en spesifikk case)

- Hva gjorde at det ikke gikk bra? Hva kunne vært gjort annerledes?
- Hvor stor grad av uforutsigbarhet var det under endringen? Usikre omgivelser?

Appendix C

Declaration of Consent for Participation in Research Project

The contract of consent for participating in our study is presented in this appendix. The contract has been signed by all of our informants. As discussed in section [2.5](#), the purpose of the contract is to inform the participants of the implications of participating in the study, to inform them about our intention to ensure confidentiality, and to formally confirm their consent to participation. The contract is written in Norwegian, as all of our informants are Norwegian.

Samtykkeerklæring for deltagelse i forskningsprosjekt

”Masteroppgave om Smidig Endringsledelse”

Vi er to studenter, Kristoffer Ramberg Karud og Kristoffer Vestaberg Årvik, som skriver en masteroppgave ved instituttet for industriell økonomi og teknologiledelse ved NTNU. Masteroppgaven har som tema “smidig endringsledelse”. Som del av prosjektet skal vi undersøke hvordan bedrifter best mulig kan endre seg under uforutsigbare omgivelser. For å studere dette vil vi intervju personer i ulike stillinger fra ulike bedrifter i ulike industrier, for å hente deres erfaringer fra endringsprosjekter.

Vi kan kontaktes på e-poster kristoffer.karud@gmail.com og kristoffer.aarvik@hotmail.no. Prosjektet gjennomføres i samarbeid med Sintef, og vi har derfor veiledere fra både NTNU og Sintef. Veileder fra NTNU er Hanne Olofsson Finnestrand, som kan kontaktes på e-post: hanne.finnestrand@ntnu.no. Veileder fra Sintef er Nils Brede Moe, som kan kontaktes på e-post: Nils.B.Moe@sintef.no.

Deltakelse i studien vil innebære intervju med varighet på omtrent en time. Spørsmålene vil omhandle selskapets endringsprosesser, samt informantens roller og erfaringer knyttet til disse. Intervjuet vil bli tatt opp med båndopptaker eller lignende og vi kommer til å ta notater underveis.

Vi er underlagt taushetsplikt, og alle personopplysninger vil bli behandlet konfidensielt. Det vil kun være oss to studenter og våre to veiledere som vil ha tilgang til data. All data vil anonymiseres, og navn og koblingsnøkkel vil lagres adskilt fra øvrige data for å sikre konfidensialitet.

Både selskapet og enkeltpersoner vil anonymiseres i publikasjonen, slik at deltakerne ikke vil kunne gjenkjennes. Prosjektet skal etter planen avsluttes juni 2017 og alt materialet vil da slettes. Informanter som ønsker det kan få en kopi av oppgaven etter at den er levert våren 2017.

Det er frivillig å delta i studien, og du kan når som helst trekke ditt samtykke uten å oppgi noen grunn. Dersom du trekker deg, vil alle opplysninger om deg bli anonymisert.

Jeg samtykker herved til å delta i intervju

(Signert av prosjektdeltaker, dato)

Appendix D

The Formal Structure of the Norwegian Model

This appendix presents an English summary of the formal structure of the Norwegian model. It is primarily meant for international readers who need to be acquainted with the formal structure of the Norwegian model. The Norwegian model is presented in section [3.1.3](#).

The formal structure of the Norwegian model consists of mainly three laws and agreements ([Finnestrand, 2012](#)):

- **The Basic Agreement between Employers and Employees** ¹

There is a strong tradition for cooperation between the parties on industrial restructuring, productivity and innovation ([Finnestrand, 2012](#)). The Basic Agreement, from 1935, have lead to a particular way of practising and structuring the work life within businesses and on a national level (Berg 2009,2010; Bjørnhaug and Halvorsen 2009, as cited in [Finnestrand, 2012](#)). The Agreement has three parts: Part A regulates the negotiations between the parties, and part B and C is concerned with the cooperation between the parties ([Finnestrand, 2012](#)). According to [Finnestrand](#) (Gustavsen and Hunnius 1981; Bergh 2010, as cited in [2012](#)) the Basic Agreement and institutionalised conflict regulations are important reasons for relatively few labour conflicts in Norway. Since the agreement is negotiated at a national level it leaves more time for management and unions in each business to coop-

¹The Basic Agreement refers to a deal between two specific organisations NHO (employers) and LO (employees), other organisations have equivalent agreements, thus the term will be used to describe all such agreements

erate and work on development (Finnestrand, 2012).

- **The Work Environment Act**

The act was established in 1977 and was aimed towards overall improvement of the workplace and improvement of health and safety (Finnestrand, 2012). The act assumes that the organisational products are not just profit but people, communities and nations (Ottén 1991:487 as cited in Finnestrand, 2012) According to the act there was legal sanction to the fact that jobs should provide a reasonable degree of: Freedom and development and maintenance of skills (Gustavsen 1980, as cited in Finnestrand, 2012). The act is often claimed to be part of a "manifestation of a longstanding drive to create a more egalitarian society and a more humane social order (Finnestrand, 2012, p.16). According to the act the employer has the overall responsibility for the work environment (Finnestrand, 2012). The employer is responsible for communicating such initiatives and give the possibility for continuous participation of development (Finnestrand, 2012). The employees are required to participate in implementations of initiatives (Finnestrand, 2012). This means that there is a legal basis for employee involvement in restructuring processes and in the implementation of new technologies (Finnestrand and Ravn, 2010). The act demands a "safety representative" in companies with more than ten employees, and a "working environment committee" in companies with more than 50 employees (Finnestrand, 2012).

- **The Corporate Law**

According to Corporate Law companies with more than 30 employees have the right to choose one (the number increases with more employees) worker representative to the company's board (Finnestrand, 2012). About half of these representatives are linked directly to unions (Hagen 2005, as cited in Finnestrand, 2012).