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Managing a virtual team through change

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ABSTRACT :

Change and the necessity for it are fundamental aspects of organisational performance and success in an evolving environment. A change in an organisation´s operations or structure needs consistent change management to be successful, supporting and guiding the organisation in its goals and purpose. Change management as a management discipline has been widely explored. This study focuses on change management in virtual environments, identifying the steps the change management process should include and the practices that change management requires from managers. A successful change management process is respectful, participative, and listening to the organisation´s personnel, so that the organisation can perceive change management as more appealing. In addition, the engagement of the various participants in the organisation will streamline the process of implementing the changes in the organisation´s practices.

This study was conducted qualitatively, and the research questions were analysed from the perspective of the phenomenon under study. The data was collected through an anonymous questionnaire, and the target group was limited to individuals who represent an organisation that has been involved in a change process in an organisation operating in a virtual environment over the past year. The questionnaire was used to determine how individuals perceived the change management process in their organisation and how it could be improved. Individual experiences are mirrored in the outcomes of the study concerning known change management processes, and the thematic analysis method of qualitative research has identified the most critical issues in terms of the research questions of this study.

The review of the findings identified four main criteria for successful change management in a virtual environment. The four key findings are establishing and maintaining a continuous two-way communication relationship, involving different parts of the organisation in the planning and implementing change, fostering trust and transparency through the various phases of the change process and allocating sufficient time to the change process.

The discussion chapter combines previous change management models with an overall impression of the change management process in a virtual environment based on the target group's experience and preferences. Using a comprehensive overview, this study formulated a change management process adapted to the virtual environment, reflecting the specific circumstances and characteristics of the virtual environment that were identified. The change management process created in the study considers the limitations of previous change management models.

KEYWORDS: virtual teams, virtual environment, change management (leadership), organisational changes, organisational structure, working environment

TIIVISTELMÄ :

Muutos ja sen välttämättömyys on olennainen osa organisaation toimintaa sekä menestystä jatkuvasti kehittyvässä ympäristössä. Muutos organisaation toiminnassa tai rakenteessa tarvitsee onnistuakseen johdonmukaista muutosjohtamista, joka tukee ja ohjeistaa organisaatiota muutoksen tavoitteissa ja tarkoituksessa. Muutosjohtaminen johtamisen alana on laajasti tutkittu, mutta sen näkökulmaa virtuaalisessa toimintaympäristössä toimittaessa ei olla laaja-alaisesti tutkittu. Tämä pro gradu -tutkielma keskittyy muutosjohtamiseen virtuaalisissa toimintaympäristöissä, kartoittaen millaisia vaiheita muutosjohtamisprosessin tulisi sisältää ja millasia toimintatapoja muutosjohtaminen vaatii johtajilta. Onnistunut muutosjohtamisprosessi on organisaation henkilöstöä kunnioittava, osallistuttava ja kuunteleva, jolloin muutosmielteisyys organisaation keskuudessa voidaan kokea miellyttävämpänä. Tämän lisäksi organisaation eri tahojen osallistuttamisella muutosprosessiin voidaan sujuvammin impelentoida muutoksen myötä muuttuneet toimintatavat organisaation toimintaan.

Tutkimuksen taustana on käytetty aikaisempia muutosjohtamismalleja, ja niiden soveltuvuutta virtuaaliseen toimintaympäristöön tarkastellaan tämän tutkimuksen näkökulmasta. Tämä tutkimus on toteutettu laadullisena, eli kvalitatiivisena tutkimuksena ja tutkimuksen tutkimuskysymyksiä on tarkasteltu tutkittavan ilmiön näkökulmasta. Tutkimuksen data on kerätty anonyymilla kyselyllä, ja sen kohderyhmä on rajattu yksilöihin, joiden edustamassa virtuaalisessa toimintaympäristössä toimivassa organisaatiossa on viimeisen vuoden aikana toteutettu muutosprosessi. Kyselyn avulla selvitettiin, millaisena yksilöt muutosjohtamisprosessin organisaatiossaan kokivat, ja miten sitä voitaisiin tulevaisuudessa kehittää. Yksilöiden kokemuksia peilataan työn tuloksissa tunnettuihin aikaisempiin muutosjohtamismalleihin ja laadullisen tutkimuksen teemoittelu analyysimenetelmän avulla on havaittu tämän tutkimuksen tutkimuskysymyksien näkökulmasta kriittisimmät aiheet.

Tutkimustuloksien läpikäynnissä tunnistettiin neljä tärkeimpää onnistuneen muutosjohtamisen kriteeriä virtuaalisessa toimintaympäristössä toimittaessa. Nämä neljä keskeistä havaintoa ovat jatkuvan kaksisuuntaisen kommunikaatioyhteyden luominen ja ylläpito, organisaation eri osien osallistuttaminen muutoksen suunnittelussa ja implementoinnissa, luottamusta edistävä läpinäkyvyyttä vaaliva toiminta läpi muutosprosessin eri vaiheiden sekä riittävän ajan allokointi muutosprosessiin. Aiempia muutosjohtamismalleja yhdistetään kohderyhmän kokemuksiin perustuvaan tietoon luomalla kokonaiskuvan siitä, millainen virtuaalisen toimintaympäristön tarpeille soveltuva muutosjohtamisprosessi olisi. Luodun kokonaiskuvan havainnoinnin ja analysoinnin avulla tässä tutkimuksessa määritellään organisaation virtuaaliseen toimintaympäristön toimintaan soveltuva muutosjohtamisprosessi, joka huomioi esille tulleet virtuaalisen toimintaympäristön erityispiirteet. Tutkimuksessa luotu muutosjohtamisprosessi huomioi aikaisempien muutosjohtamismallien puutteet.

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1   Introduction

A successful organisation is aware of the need for a possible change in its operations and thus strives to actively examine its operations and structure to balance its working methods and operations (Hussain et al., 2018). Working methods and their different forms change constantly over time. Because of that, the techniques that have already been learned and utilised in the organisation's operations will not necessarily meet the goals of our society in the future (Giorgetti, 2023). The increase in remote working in society has also increased the number of teams working in virtual environments (Business News Daily, 2023). When examining the issue from the point of view of changes in the virtual operating organisation, the already learned ways or processes of change management are not necessarily suitable (Zigurs, 2003).

Previous studies have identified a precise gap in how change is managed in virtual teams and how managers are trained to understand the nuances of virtual management in change management situations (Luhtasaari, 2022; Mettin, 2018; Ojala, 2021; Elo, 2023; Hihnala, 2020). Based on the studies mentioned above, the framework and purpose of this study have been identified. The purpose of this study is to identify the requirements and needs of the change management process of virtual operating environments.

In his research, Luhtasaari (2022) mapped the experiences of virtual team leaders in leading change during a pandemic. This study aimed to determine how virtual teams should be managed (Luhtasaari, 2022). The managers' point of view on the operation of virtual teams was also studied by Mettin (2018), whose research question was the idea of people working in management positions about the possibilities of managing virtual teams. Hihnala (2020) approached the operation of virtual operating environments from the perspective of a changing organisation. The core of the research is the organisation's ability to change and manage change from the perspective of the leader's role (Hihnala, 2020). Ojala (2021) studied the utilisation of the mechanisms of the goal theory in the management of virtual teams and focused on mapping the background of the factors affecting the effectiveness in the management of virtual teams. The subject area was

studied from the point of view of the challenges faced by leaders of virtual teams during goal setting (Ojala, 2021). In her research, Elo (2023) approached the management of virtual teams from the perspective of their facilitation method, also applying the idea of the success factors in the operation of virtual teams.

While researching previous studies on implementing changes in virtual teams, research conducted by Hihnala (2020) studied the role of a supervisor in a changing organisation. Hence, this study answers the question of Hihnala (2020), who stated how multinational companies have focused on and considered the impact of virtual teams and cultural differences on the implementation and success of the change (Hihnala, 2020). The study mentioned the management of virtual teams and how managers are trained to lead virtual teams as a proposal for further investigation. In this study, the topic has been delimited to focus on the manager's capability to lead their organisation through the change in a virtual operating environment.

During the pandemic in 2020-2022, virtual teams increased due to the global pandemic (Business News Daily, 2023). During that time, the Finnish government, like other countries, and the World Health Organisation issued guidelines for remote working. They also encouraged the more extensive use of remote working in organisations that had not previously used the remote working model if the nature of the work allowed it (Finnish Institute of Occupational Health, 2021).

Managing virtual teams as a concept is challenging to internalise, and the importance of high-quality management of virtual teams is not necessarily evident in all organisations. This study will precisely map the management of virtual teams during changes. This study fills a significant research gap identified by Hihnala (2020). This research gap relates to successfully implementing and managing a change in a virtual operating environment (Hihnala, 2020).

In her research, Hihnala (2020) outlined and identified two challenges that people working in supervisory positions may face in the wave of change management. These two things are the importance of corporate culture and communication during the change from the point of view of change management (Hihnala, 2020).

Implementing this research can be complex when combining virtual teams' operations and the demands of change processes for remote teams. Accurate differentiation of the topic supports the success of research and agility in virtually operating organisations facing change situations. When looking at the research questions and results of previous studies used to define the research topic, there is a noticeable gap in mapping the change management process of organisations that use virtual operating environments in their operations. Kotter's 8-step change process (1996), Schein's Sociopsychological model focused on learning and change (1996), and Lewins' three steps of change (1947) have been used as a theoretical framework of this study. These three earlier models of change management are examined in terms of their applicability to the virtual environment.

The successful and high-quality implementation of the change management process is a multi-phase process, where the importance and consideration of the different phases are emphasised when operating in virtual environments. The most critical thing in this research is to form a change management process that can be used in virtual operating environments. This is done by narrowing down the target group of this study and discovering their previous experiences with change management processes in virtual operating environments. In addition, the aim is to find out what kind of wishes or needs the target group has for change management processes in the future. Based on this information, a change management process that meets the needs of virtual operating environments can be formed based on the previous change management processes. The new process aims to create a process that could be used in the future during changes in virtual operating environments.

1.1   The aim of the study

This study aims to investigate the functioning of remote teams in different phases of the change process. The research examines how organisations that include virtual operating teams can pay attention to improving their change management process and thus consider the needs of each stakeholder group from different levels of the organisation. This study aims to increase knowledge of the stages and process of change management in situations where the organisation's operations are focused on virtual platforms and the workplaces of the personnel of that organisation can be geographically distributed. The goal of the research is also to discover organisations' ability to change and to map the general image of change in the organisation's operations or structures.

The research questions are as follows:

1. How to lead through the change in a virtual team?
2. What are the phases of the change process?

1.2   The structure of the study

This research consists of six chapters. In the first chapter, the background of the study is first discussed. Previous studies are presented, and the study's research questions are defined, after which the overall structure of the study is reviewed. The second part of the study contains a literature review describing the relevant subject areas. The second chapter introduces the virtual team as a concept and change in a virtual operating organisation, along with change management and its previously created processes. The second chapter also introduces managing virtual teams and the possible challenges in virtual team management.

The third chapter introduces the selected methodological methods used in the study. This part of the study includes the study's research philosophy, approach, and plan for conducting the study. In addition, the chapter presents how the material and data used in the research were collected, processed, and analysed. The research's reliability, competence, and ethics are given at the end of the third chapter.

The research findings are presented in the fourth paragraph of this study. The results are divided into three subheadings, the first focusing on the current situation and experiences of the target group's individuals. The second subheading of the fourth chapter presents a practical issue identified among the target group. The final subheading collects and presents the key findings of this study. Where the research results of the study are introduced under the guidance of different topics and perspectives.

The findings are mirrored in the fifth chapter of this study, and based on them, a change management process for a virtual operating environment has been created and presented. The sixth chapter is the last chapter of this study, focusing on the conclusions, their results, and future research proposals. The previous chapter also focuses on the limitations, possible challenges, and development proposals the research results reveal.

2   Literature review

2.1   Change in an organisation

Change happens around us all the time, and it is a circumstance that can be experienced, either surprising or planned (Jabri, M., 2012, p. 1; Karasvirta & Teerikangas, 2022). In the organisation's operation, change plays a significant role in observing the success and adaptability of the organisation. Change is continuous and inevitable, and its direction can be challenging to predict when studying the change and its possible future results from a long-term perspective. Change can be seen as either a negative or a positive thing. However, referring to Kennedy´s research, change is usually seen as a positive thing, which enables our society to develop new solutions and operating models to overcome the latest challenges and demands that come with the change (Kennedy, 2017).

Changes have been made to the operation of organisations since the concept of organisation and organisations was created (Faupel & Helpap, 2021). However, change can often be observed in the environment, and it is a normal part of development and an opportunity for growth. Karasvirta and Teerikangas (2022) stated that preparing for all changes in advance in every predominant circumstance is impossible. Organisations should, through their activities, ensure the organisation's readiness for change and the adaptation of new operating methods or views so that in the event of a possible change, it would be possible for the organisation to maintain their everyday operations and market positions (Appelbaum et al., 2012). If the organisation can adopt a positive mindset and can effectively utilise approaches that facilitate the planning of changes in its operations, it can promote the implementation of changes.

A change in the organisation's operations or structure can be considered based on changing needs and the aim of fulfilling them. The goal behind the change may be to meet the new needs or requirements that emerged because of the change by changing

how the organisation works and parts of the business model to meet the organisation's new goals. It would be beneficial for the organisation to actively examine their operations from a critical perspective, in which case the necessity for change could be noticed at a favourable stage for the organisation´s operation.

Designing new operating models or processes to meet the changed needs can be described as a more straightforward process than their implementation. To ensure smooth planning and implementation, organisations should understand and internalise flexible management processes that can be utilised in the operating environment. A dynamic approach to implementation in organisations' operations and their active use could enable the use of the agile method in the change process planning and implementation (Worley et al., 2016; Vantrappen & Wirtz, 2018).

In a virtual operating organisation, implementing changes can play a critical role when the organisation examines its ability to adapt to new ways of working in the face of a changing world. With the changes in the organisation, they can seek short-term solutions or aim for long-term changes in its operations (Vance & Peik, 2006). In a situation where a virtually operating organisation decides to change the way of working due to a changed need, those in charge of planning and leading the change must pay attention that these changes support the organisation's goals in future operations, both in short-term and long-term operations (Vance & Peik, 2006).

Today, organisations operate in an environment that is exposed to external continuous changes that define the organisation's operations and can increase its susceptibility to change. Robbins & Judge (2010, p. 269) determined that every organisation that aims to maintain or expand its market position must have a positive mindset and plan its activities in such a way that it is positive for possible changes. Reasons for implementing the change can be, for example, the development of technology, a change in national economic or political trends, competition and its various forms, and the transformation of social factors (Robbins & Judge, 2010, p. 270; Holbeche, 2006, p. 47).

The need for organisational change arises from the influence of external factors, such as a changed environment (Mullins, 2004, p. 910). During the planning phase of the organisational change, the effect of the change should be considered during its introduction and implementation phase in the organisation's internal operations because the result of the changes can affect the mindset of the organisation's personnel (Mullins, 2004, p. 910). Because of this, transparency should be considered in the planning phase of the organisational change to maintain the upbeat mood of the personnel towards the organisation.

During the planning phase of the organisational change, the different opinions raised and identified among the target group about the organisational change, its importance, and the way to carry it out can generate added value for the work group planning the organisational change at the stage when the organisational change starts to be implemented as part of the organisation's operations (Oreg et al., 2018).

In addition to a change in the organisation's operating model or structure, radical or incremental change can be pursued in the organisation. Radical organisational change can involve revolutionary, intentional, or strategic changes in the organisational structures, while incremental change focuses on making continuous, gradual, and evolutionary improvements (Petersen et al., 2004). Radical change, such as social transformation, must adapt to new market conditions or a changing operating environment (Koh, 2012). Incremental change is seen as a more conservative, adaptive, and sustainable approach but may have limitations in addressing complex issues (Petersen et al., 2004). However, more important than the way or method chosen for the change process is the management of the change and the role of leadership during the change taking place in the organisation.

2.2 Change management processes

Paton and McCalman (2008, p. 5) stated that in modern times, continuous change has become a routine facilitated by changes based on technology, humanity, and creative thinking. The change can be described and studied in different ways and perspectives. One possibility is in the light of the points raised in Payne et al. (2022) research, which are the organisation's performance, issues related to the nature or functions of the managers, changes in the organisational structure or differences in learned behaviour patterns. The topic can also be examined by the organisation's future goals and the change capabilities required to achieve them (Robbins & Judge, 2010, p. 34). To succeed, the organisation must internalise that effective change is a necessary part of the organisation's operation and its continuity (Payne et al., 2022; Robbins & Judge, 2010, p. 34).

Change and its management in organisations have been studied actively, and the most well-known change management models and processes are presented in this chapter. These previously created models focus on the change management process and on aspects related to change, which can be considered to improve the success of organisational change.

In their study, Cummings et al. (2015) presented their view of change and its three phases based on the criticised Kurt Lewin´s Three Steps of Change presented in Figure 1, which includes three phases which are the unfreezing phase, the active change phase, and the subsequent refreeze phase (Burnes, 2004).
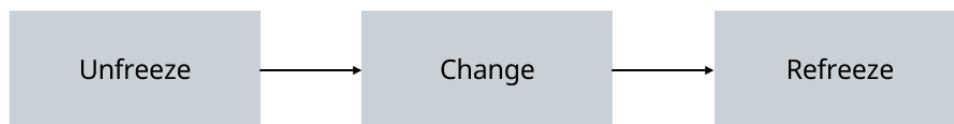
Figure 1. Kurt Lewin´s Three Steps of Change (1947).

Lewin's three-phase change management model is based on the idea of how, once the organisation's need for change has been identified, the change planning is started by

unfreezing the current way of working, thus creating an opportunity and space for the change of a new operating model. After that, the second phase of the process focuses on managing the change in question, which is followed by completing the change process by identifying the operating methods that have changed due to the change, as if by refreezing (Burnes, 2004). The reason why Lewin's idea of a change process divided into three parts has later been criticised is based on the concept that Lewin's understanding of the change process as such is not suitable for various change situations but is focused on the use of small, stable organisations and the effect of changes on the ability of individuals to function has not been considered enough in the light of more modern studies (Burnes, 2004; Rosenbaum et al., 2018; Hussain et al., 2018). On the contrary, Herold et al. (2007) and Brockner (2002) have shared their view on the impact of changes on the individual's attitude and behaviour change when studying the fairness of procedures in organisations at the time of changes.

In addition to Lewin's Three Steps of Change model, Schein's Sociopsychological Model of Learning and Change three-part model focuses on change management and is considered one of the classic change management models (Coghlan, E., 2020). Schein's model is based on Lewin's three-part model, but the processes' names and their purpose differ from Lewin's model (Coghlan, E., 2020). Instead of the three phases, Unfreeze, Change and Refreeze, identified in Lewin´s model, Schein's model involves the Creation of motivation in change, Change, and Internalisation of change. Schein´s process is presented below in Figure 2.
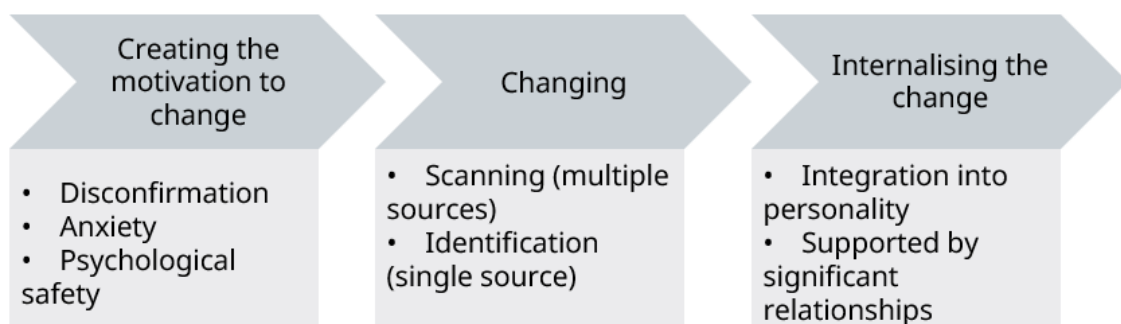
Figure 2. Schein´s Sociopsychological Model of Learning and Change (Schein, 1996).

Schein's model draws attention to socio-psychological factors that may emerge, especially in the face of changes. Schein (1996) mentions that the purpose of the first stage of his change management process is to confirm goals and wishes for the change and prevent anxiety caused by the change situation by solving the cause. In addition, the first phase aims to enable, develop, and maintain psychological safety, which refers to strengthening individuals' sense of significance despite the change situation (Schein, 1996). In the second stage of the process, the focus is on the change itself and how the identifier can be used to obtain information about positive and negative factors, and by using scanning, it is possible to examine the organisation and its environment from the perspective of new opportunities or operating models (Schein, 1999). In the third phase, the focus is on the internalisation of the change, considering the social aspects of the change (Coghlan, E., 2020).

The significant difference between Lewin´s and Schein's change management processes is Schein's more detailed approach at the beginning and end of the change. In addition, Schein's thought model emphasises the psychological and sociological perspectives behind successful change management.

Change and its management can also be studied and observed using a process created by John P. Kotter, examining the change management process using eight different phases. The name of Kotter´s model is Kotter´s Change Management Model (KCMM) (Graves et al., 2023). Following the process and its identified phases based on Kotter's ideology, the organisation could avoid some of the challenges encountered during the change process (Hughes, M. 2016). Kotter's change management model is presented in Figure 3, and it is divided into eight different phases, by following which, based on Kotter's idea, the change management process can be implemented as part of the organisation's operations.
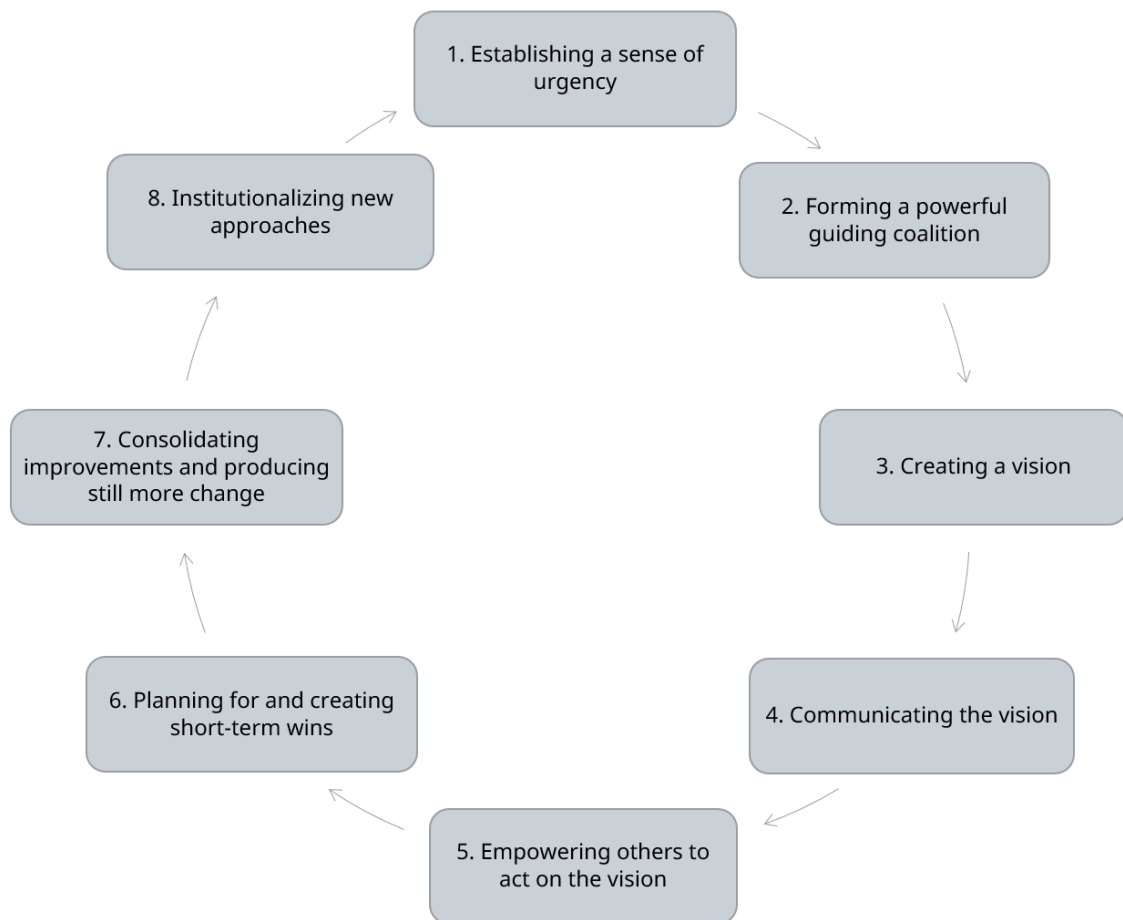
Figure 3. Kotter´s 8-step Change Process (1996).

Kotter's idea of an eight-part scale leading to a successful change management process has been reviewed later by several parties, and the scale has been utilised and applied in various situations related to change management (Sittrop & Crosthwaite, 2021; Campbell, R., 2020; Ravi et al., 2022; Vokes & Bearman, 2018). The active use of Kotter's thought model based on change management in various change-based situations can be seen as the ability of Kotter's process to change and the readiness to implement the thought model in multiple situations. Kotter's model could be described as a streamlined and routinised way of thinking about change management as a process. The eight-part process begins with identifying the need for change, after which the process progresses by forming a powerful guiding coalition and creating a vision for the organisation's new

operating model. During the process, the fourth step focuses on communicating the developed vision to the organisation, after which the fifth focuses on participating and inspiring other organisation members to act according to the planned vision.

The last three steps of the process, steps 6, 7, and 8, focus on setting the short-term goals of the change and completing the change process. The sixth stage of Kotter's model aims to divide the change process into short-term changes, which could be distributed when managing the whole change (Mouazen et al., 2023). When acting this way, the aim is to make the manageability and internalisation of change more comprehensible to the organisation's different areas.

A challenge or shortcoming in Kotter's change management model appears if the model is strictly followed during the change management process by following the eight steps outlined by Kotter. The most significant shortcomings in Kotter's model are the mention of communication only in the fourth stage of the process and the limited perspective of the active change-related participation of the other organisation personnel in the fifth stage. Employees' perception of procedural fairness plays a crucial role in understanding and accepting organisational change (Faupel & Helpap, 2021). Considering Faupel and Helpap's (2021) research results, participatory communication during the change management process can be considered the basis for the thinking of the organisation's members towards change.

Tolerating change is individual, and carrying it out varies depending on the organisation's tolerance and level of understanding of change management (Rinne, 2023). Rinne (2023) stated that by examining change and its management, factors rooted in fear are often ignored, which may harm the original purpose of the change, such as the organisation's strategy.

2.3 The role of management during organisational change

2.3.1 Introducing and implementing the change in the organisation

During the planning phase of the change, the different opinions raised and identified among the target group about the organisational change can play a significant role (Oreg et al., 2018). Opinions and their importance and how to carry them out can generate added value for the work group planning the organisational change at the implementation stage of the organisational change to the organisation's operations (Oreg et al., 2018). As a result of the organisational change, the emotions that arise among the personnel are individual because everyone reacts to the changes differently.

The necessity of the change can also be a matter of opinion, in which case one person feels the change is welcome. At the same time, it can be almost impossible for the other person to understand why such an organisational change is planned to be implemented. Therefore, from time to time, the need for hierarchy-based activities from the direction of the management can be an excellent way to restore the balance to the organisation's operations (Mullins, 2005, p. 917).

Figure 4 below shows how individuals' reactions to change can be observed. The image focuses on looking at the matter from four different perspectives, where examples of emotional states are listed to strengthen the state of being of the experience experienced by the individual (Oreg et al., 2018). Oreg et al. (2018) model includes the following categories describing an individual's change experience: Change Resistance, Change Proactivity, Change Disengagement and Change Acceptance. From the point of view of a successful change management process, the Change Resistance and Change Disengagement aspects of the Oreg et al. (2018) model need attention and focus from the management parties leading the change. Behind resistance to change is a psychological phenomenon in which an individual feels that their comfort zone is threatened by the new

operating model in their organisation (Grieves, 2010, p. 360). In thinking based on individual experience, change resistance in the organisation can be inescapable (Rollinson, D., 2008, p. 637).

The Oreg et al. (2018) model focuses on observing the emotions raised from the change by analysing whether the individual acts by high activation or low activation and whether their mindset follows more of a negative or positive valence. It is worth noting that an individual showing high activation can experience either negative or positive change. The same can be observed when looking at low activation, and an individual can experience positive thoughts regarding change through calmness or negative thoughts regarding change through helplessness.

High activation

Change Resistance:
Stressed, Angry. Upset

Change Proactivity
Excited, Elated, Enthusiastic

Negative valence

Positive valence

Change Disengagement
Despaired, Sad, Helpless

Change Acceptance
Calm, Relaxed, Content

Low activation
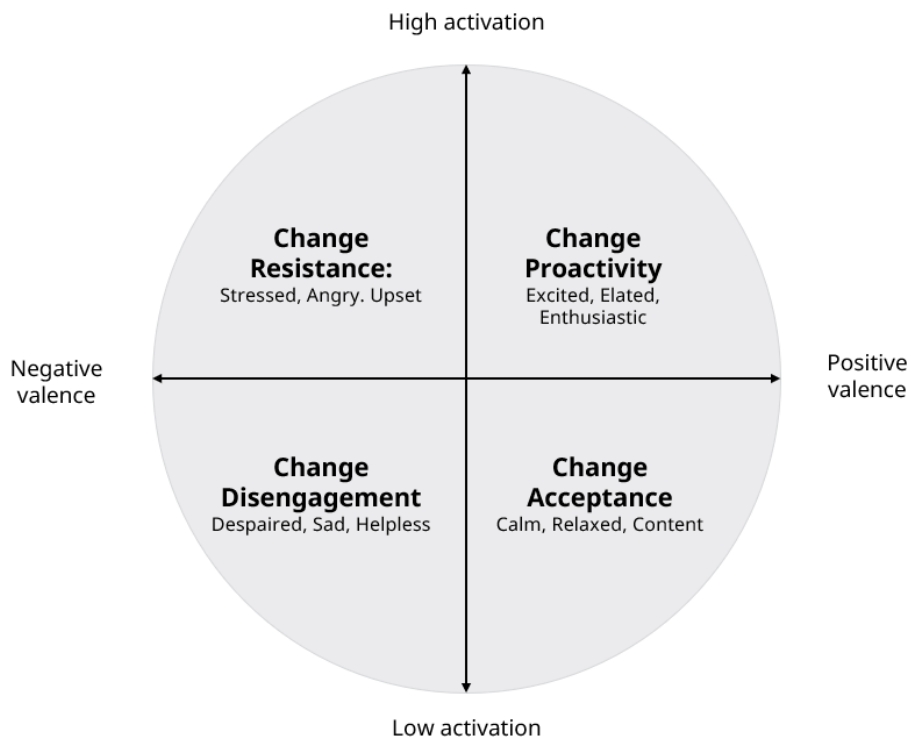
Figure 4. Circumplex of Change Recipients´ Responses to Change and Underlying Core Affect. (Oreg et al., 2018).

Amid change, the organisation may react to the change reluctantly, creating obstacles to successfully implementing the change (Robbins & Judge, 2010, p. 34). On that account,

involving the personnel and listening to their views can contribute to the commitment of the personnel towards the organisational change. Commitment and its importance were a significant part of the successful implementation of organisational change in Choi´s (2011) research about how employee attitudes can affect the individual's commitment. Along with commitment, activities based on informing and listening to the personnel are also considered to increase the personnel's positive feelings and experiences towards the organisational change (Mullins, 2005, p. 917).

The time set aside for implementing the organisational change gives additional time to the personnel and the persons responsible for planning the change in case of possible questions or objections. In their research, Oreg et al. (2018) express the participation of personnel in the planning and implementation process of organisational change to achieve a sense of belonging and appreciation.

2.3.2 Creating and maintaining a communication

Communication and its importance are emphasised in virtual operating environments due to the impossibility of face-to-face communication. People working in virtual operating environments must understand the importance and impact of communication in achieving the organisation's goals (Mattiske, 2020, p. 121). Achieving goals usually requires informing, which is another form of communication. Without appropriate and sustainable communication, the flow of information in a virtual operating environment can create challenges in the organisation's operations and achieving goals.

2.4 Virtual teams

2.4.1 The definition of a virtual team

A virtual team is a group of people located in two or more geographical locations, where people work together using technological platforms to achieve a common goal (Ford et al., 2017; Robbins & Judge, 2010, p. 156). The formation and adoption of virtual teams into the organisation's structures affects the organisation's operations and may increase flexibility and challenge the organisation to develop old and create new operating methods that enable the organisation to respond effectively to the new ways brought about by the development and implementation of virtual teams.

2.4.2 The operational model of virtual teams

With the pursuit of a more global operating model for organisations, using virtual teams as part of the organisation's operations has become more common (Ebrahim et al., 2009). Today, virtual teams and their operations are actively researched, and the chain of events that led to remote working caused by the coronavirus pandemic has contributed to increased interest in virtual Teams and their possibilities. The number of studies on virtual teams and their functioning has increased in the 2010s compared to the 1990s (Jimenez et al., 2017). Based on Hertel et al.'s (2005) research, a considerable number of large organisations utilise virtual teams in their operations and organisational model.

A virtual team and its operations and structures can be observed through Smith's The Virtual Team Global Business Model (Figure 7) (Smith, 2014, p.16). This model describes the operation of virtual teams from the point of view of a business model, so when examining the concept, similarities with business models that focus on services can be observed.

In Zigurs´ (2003) research, Figure 5 presents the differences between traditional and virtual teams regarding dimensions. The Figure aims to increase understanding of virtual teams' critical challenges compared to conventional teams' operations (Zigurs, 2003). Zigurs (2003) has recognised and presented four of the most critical dispersions that differ in an organisation's operations when observing them separately at the virtual team and traditional team: Geographic Dispersion, Organisational Dispersion, Cultural Dispersion, and Temporal Dispersion.
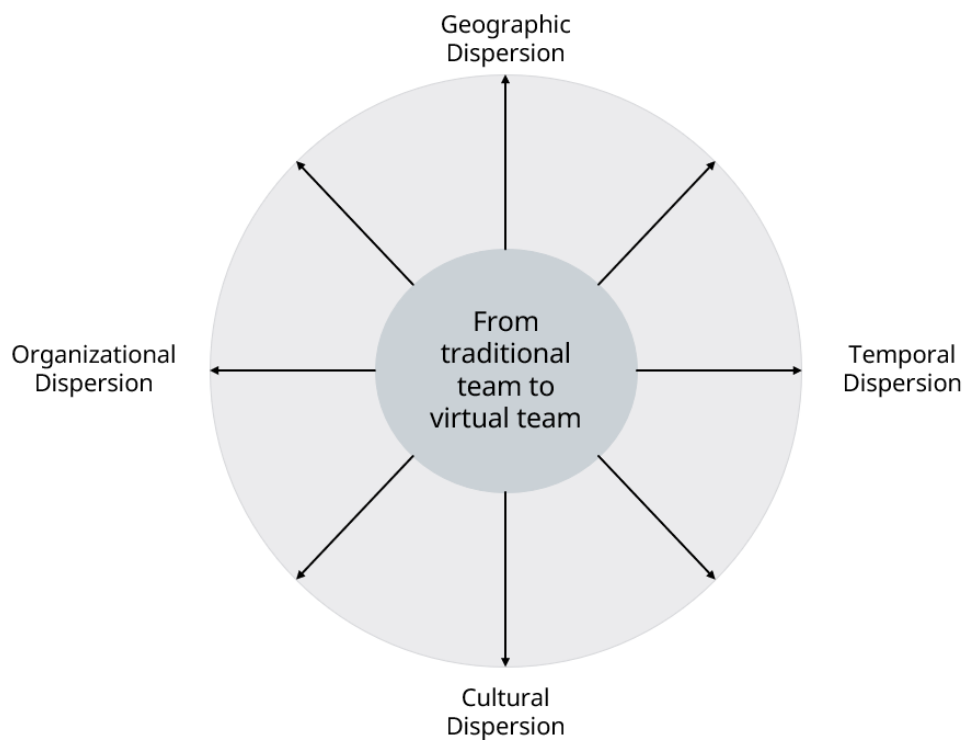
Figure 5. Dimensions of Virtual Teams presented by Zigurs (2003)

Nowadays, with the development of technology, companies and organisations have better opportunities if they desire to expand their operations outside their home country and thus modify their operating model to meet the needs of global operating models. Working with the help of virtual platforms can challenge the employee and the team leader when considering standard operating methods and principles to achieve the goals set for the team. Considering the evidence collected based on previous studies, it can be stated that a virtual team that has internalised suitable operating methods can be more

successful in its operations compared to the classical operating model, where the team members and the leader are in the exact geographical location and work in a shared space, meeting each other face to face (Ferrazzi, 2014).

Gilson et al. (2014) also studied the importance of technology and its development in virtual teams. They presented in their research results that to enable the best communication and working environments for virtual teams, organisations should be open and ready to try new technological innovations, which, by utilising the communication and working methods of virtual teams, could be developed to meet the current situation (Gilson et al., 2014).

Implementing virtual operating teams in organisational structures has increased over the past decade (DuFrene & Lehman, p. 3, 2012; Gilson et al., 2014). The virtual teams' operating method increases flexibility in the organisation's operations and reduces attention from the geographical locations.

2.4.3   Challenges in virtual team

A team operating virtually can face challenges in its operations. To solve them, it is not necessarily possible to use the same management models used in close management, which is also known as a traditional management style. Operating and managing a virtual and possibly geographically virtual team with significant time or cultural differences can be challenging. These challenges can include, for example, challenges related to cultural diversity, as well as differences related to age, gender, or previous work background, which effect on how the virtual team leader should lead their virtual team effectively and in a manner that respects everyone and follows the organisation's guidelines together with their mission, vision, and goal (DuFrene & Lehman, 2011, p. 11).

2.4.3.1   Absence of concrete interaction in virtual teams

One highlighted challenge concerning virtual teams is the synergy between team members and the challenges of creating and maintaining it when working virtually without meeting other team members (Kuivalainen, 2013). In their research, Hertel et al. (2005) examine virtual teams' challenges resulting from decreased face-to-face communication. In such virtual teams, where their members have never met each other face-to-face, the way of working can become more task-oriented, in which case the team experience may suffer (Robbins & Judge, 2010, p. 156). In addition, it has been noticed that disagreements can arise more sensitively than in teams working with a conventional model and solving them. Finding a common understanding requires resources and tools suitable for a virtual operating model (Hertel et al., 2005).

2.4.4   Building trust in virtual team

Trust is a choice, and it is based on understanding the other person's point of view (Mattiske, 2020, pp. 161-163). Trust is defined as something that takes a long time to build but can be lost in a moment (Bibb & Kourdi, 2004, p. 119). DuFrene and Lehman (2011, p. 29) stated that trust in teamwork is essential. However, especially in a virtual team where face-to-face encounters are limited, trust plays a significant role from the point of view of the team's operation and the individual's experience (DuFrene & Lehman, 2011, p. 29). As Cogliser et al. (2012) and others expressed in their research, virtual teams face more challenges with trust in their operations than teams whose way of working is based on people working in the exact location. Building trust in the initial phase of cooperation within the virtual team is essential regarding the standard way of working and the feeling of belonging (Morrison-Smith & Ruiz, 2020).

When changes occur, the trust prevailing in the organisation will be tested. It would be good for the organisation to pay attention and allocate resources to building confidence

in virtual teams so that during changes or other things that are often perceived as unpleasant, the trust between employees and the organisation does not disappear or break. When looking at trust from the point of view of a virtual team member, the issue can be studied from the perspective of Ilgen et al. (2005) research, which investigated the factors affecting the mutual trust of team members. According to Ilgen et al. (2005), there are two things that team members can feel that trust has been born after they have been fulfilled. The first one, based on Ilgen et al. (2005), is that the team members get information or proof that the other team members can perform the tasks given to the team. Another important thing for creating trust is the knowledge that the team members and managers respect each other and do not intentionally try to cause harm to the team members with their actions (Ilgen et al., 2005).

In a situation where the team leaders can, by their actions and example, create an atmosphere based on trust in the everyday activities of the virtual team, the virtual team can endure better when faced with changes in the organisation or other unpleasant things. Managing a virtual team must be based on trust because the geographical location can make it difficult for the manager to monitor the team member's performance of the assigned tasks (DuFrene & Lehman, 2011, p. 29). In activities based on trust, it is easier for team members to trust each other and their team leader, and with that, trust can create a strong connection that protects the team's activities, unites the team, and helps it cope with different situations (Mattiske, 2020, p. 160).

Trust can be created and maintained by understanding and prioritising the importance of communication. Constant communication can give virtual team members a sense of meaning. According to Mattiske (2020, p. 160), when communication in virtual teams is based on trust, individuals in the organisation may feel comfortable sharing their thoughts, feelings, or emotions via virtual channels.

During changes, communication and the individual play a vital role in maintaining trust and continuing the team's activities. The participation of individuals in the organisation

in the discussions can create a sense of importance among personnel. Even simple-sounding sentences such as ´´*What do you think about this*´´ or ´´*How does this sound to you*?´´ can increase the sense of meaning in an individual's thought and thus maintain trust between the organisation and the individual, from prevailing regardless of changes (Mattiske, 2020, p. 168).

When forming completely new virtual teams or combining or modifying existing teams due to organisational changes, it would be essential to consider that these virtual teams may require time to form a bond based on trust with the supervisor and the organisation and to build mutual trust between the team members. According to Bibb and Kourdi (2004, p. 121), organisations can adopt trust-based actions into their operations by creating a process critical to their success. Building trust is a process defined in the communication and cooperation of different people over time. How quickly trust is built in a virtual team is a matter to which there is no unequivocal answer due to organisational variations. Nonetheless, organisations and team leaders should understand that building trust is a process that requires enough time to build (Bibb & Kourdi, 2004, p. 121). Building and maintaining trust in the organisation also requires a decision guiding the organisation within its operations (Bibb & Kourdi, 2004, p. 121). When forming new teams, this idea is critical because rushing employees to build trust with each other and the organisation can cause a reaction that is the opposite of building lasting trust (DuFrene & Lehman, 2011, pp. 30-31).

2.4.5   Working in a virtual team

Smith (2014, p.77) stated that the people who belong to virtual teams are the organisation's heart. According to Smith (2014, pp. 77-78), people working in a virtual environment contribute to the organisation's success in challenging conditions where face-to-face encounters are few due to the nature of the work.

With the formation of virtual teams, the geographical location of its members is not so significant, for example, from the point of view of achieving the team's goals or performing work tasks (Gilson et al., 2014). The formation and operation of globally functioning virtual teams can be studied and examined from the organisational point of view, as well as how people geographically located in different parts of the world can bring their expertise and cultural aspects to the work community. Also, the challenges brought by time differences should not be forgotten when considering the challenges faced by a global virtual team. Doing so would increase the organisation's diversity, and one could think that the ability of the organisation to consider issues related to its operations from different perspectives would improve with the help of a globally operating virtual team.
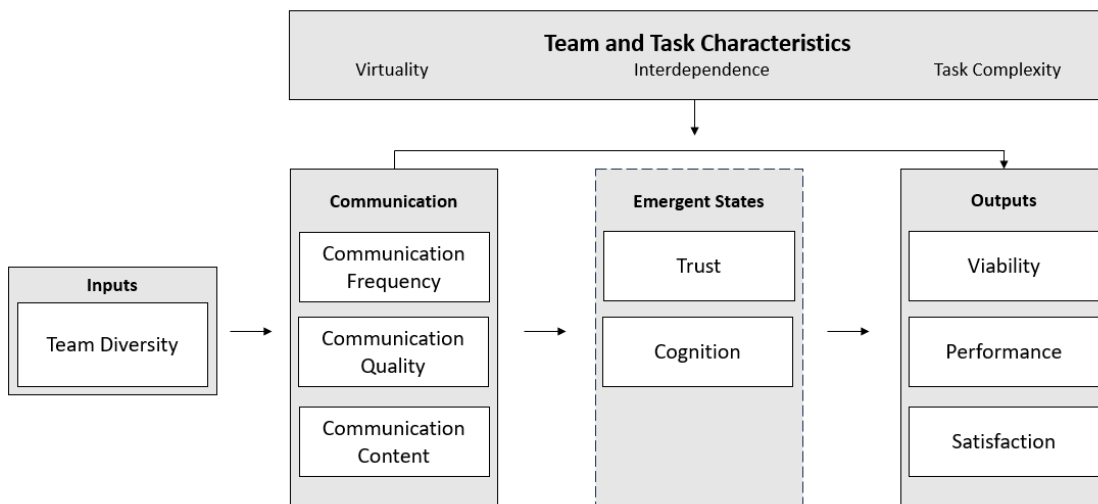
Figure 6. Communication process framework in virtual teams (Marlow et al., 2017).

Figure 6 above describes the proposal for a virtual team communication plan presented by Marlow et al. (2017) and Ilgen et al. (2005). Marlow et al. (2017) stated that the proposed conceptual model is based on the input-mediator-output-input (IMOI) framework, which extends the input-process-output (IPO) model by accounting for interactions among inputs and processes. The IPO model only considers the inputs, methods, and outputs, while the IMOI model considers the mediator component, which includes the interactions among inputs and processes (Mallow et al., 2017). In virtual teams, these

interactions can significantly impact communication and team performance; therefore, it is crucial to account for them in the model.

The importance of continuity-based communication in virtual operating environments plays a significant role in the organisation's everyday operations, and its importance is further emphasised in connection with changes. Communication is a vital part of the process framework, as presented by Marlow and others (2017). Communication has been divided into three categories: Communication Frequency, Communication Quality, and Communication Content (Marlow et al., 2017). The framework is described in detail, beginning with the communication component, and identifying the most significant elements of communication in virtual teams together with the presented relevant propositions (Marlow et al., 2017).
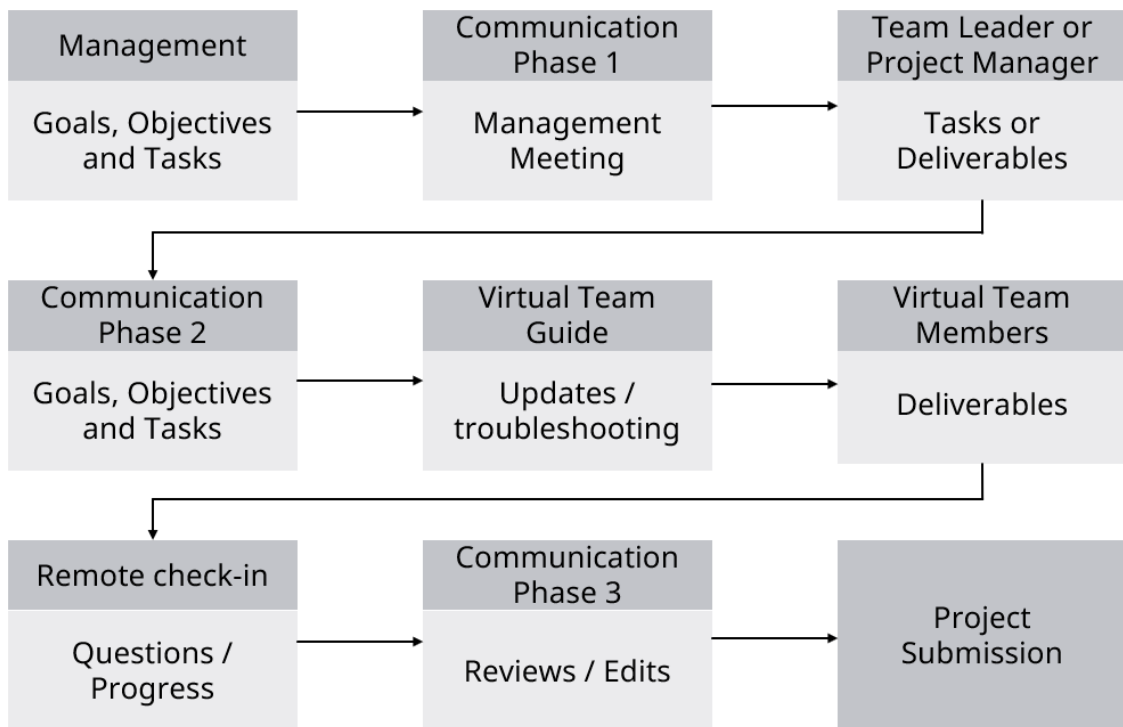
Figure 7. The Virtual Team Global Business Model presented by Smith (2014, p.16).

Figure 7 shows a business model based on Smith's idea of virtual teams and their operation. The chart was created to work in virtual operating environments, and according

to Smith (2014, p. 15), its benefit is in the hierarchically created process and the clear communication path. In addition, the global business model of virtual teams benefits the organisation in defining their standards of practices (Smith, 2014, pp. 13-17). The business model that focuses on the activities of virtual teams is primarily aimed at managing various projects in virtual operating environments.

Analysing Smith's (2014, p. 16) process of the virtual team global business model from the point of view of change management, a few flaws in the way of thinking that relies on a successful change management process can be noticed. The diagram progresses in the direction of the arrows shown in it, starting with the goals and tasks set by the management, and ending with the completion of the project. However, when looking at the seven intermediate stages, it can be noticed that communication has been raised as part of the process only in three steps, and even among these stages of the process, the first stage regarding communication is only intended for informing the management. Trust and transparency are mentioned in Chapter 2.4.4. is not in line with the Virtual Team Global Business Model phases presented by Smith (2014, p. 16). From that perspective, Smith's idea of a business model for virtual teams does not fulfil the needs of the virtual environment of continuous communication, transparency, and trust.

2.4.6   Management in a virtual team

With the COVID-19 pandemic that spread the world globally, many organisations moved their on-site employees to work in virtual environments, from office spaces to home environments. This increased the number of virtual teams in organisations in a short period, and the managers did not necessarily have experience with this type of management style before. This rapid change in the way of working may have affected the interest in virtual management, understanding its challenges, and the exceptional quality requirements required to succeed. In their research, Mahadean and Steinmann (2023) showed how the rapid transition to virtual working has benefited organisations from a cultural perspective.

Management and its importance are emphasised in managing virtually operating teams. For that reason, one prerequisite for following the goals of a virtually functioning organisation is understanding the meaning of virtual management and applying it in practice in the organisation's daily operations (Mattiske, 2020, p. 290; Liao, C. 2017). Management styles depend on the target organisation; for this reason, an organisation that operates virtually needs management styles that meet the needs of that organisational model.

Based on Smith (2014, pp. 3-5), the virtual team leader should have advanced communication skills to contribute to the team members regarding tasks, goals, and ways to achieve the goals. The method of communication used in team communication should be consistent and formed, simultaneously following and respecting, for example, variations in communication styles based on culture (Smith, 2014, pp. 3-5).

Leading a virtual team, coordinating things, and achieving set goals require the team leader to have a remarkable ability to perform the leader's duties and to ensure that the leader's actions can meet the demands and needs of the team members and the organisation with the necessary accuracy. Giving feedback and its form is challenging in virtual teams, as there is no uniform line on which way of providing feedback would be most relevant for virtual teams (Hassinen, 2022).

Robbins and Judge (2010, s. 156) pointed out that it would be suitable for the leader of a virtual team to internalise the following three things to ensure a successful outcome that benefits all parties. The first thing is building and protecting trust, the second thing deals with actively monitoring the team's progress, and the third thing worth the virtual team leader's attention is highlighting the work contribution and existence of virtual teams in the day-to-day operations of the organisation (Robbins & Judge, 2010, pp. 156–157).

2.5   Leading virtual teams through the change

2.5.1   Virtual management process

The management tools used in virtual management are an essential part of the performance of the virtual team and the mutual leadership experience. For example, management tools can be used to offer support to managers working in virtual operating environments, so that they can clarify the necessity of change and the goals for their organisation or team. With the support of these management tools, the process of change management and its different stages could give managers a broader understanding of what kind of special features can be sought in a virtual operating environment.

Phase A	Phase B	Phase C	Phase D	Phase E
Preparations	**Launch**	**Performance management**	**Team development**	**Disbanding:**
- Mission statement - Personnel selection - Task design - Rewards system - Technology - Organizational integration	- Kick-off workshop - Getting acquainted - Goal clarification - Development of intra-team rules	- Leadership - Regulation of communication - Motivation / emotion - Knowledge management	- Assessment of needs / deficits - Individual and/or team training - Evaluation of training effects	- Recognition of achievements - Re-integration of team members

Figure 8. The key activities in the lifecycle of virtual team management (Hertel et al., 2005).

This model is presented in Figure 8 from a management perspective. The virtual team's lifecycle activities, presented by Hertel et al. (2005), distinguish five phases from specific management tasks. These phases are preparation, launch, performance management, team development, and disbanding (Hertel et al., 2005). The model emphasises the importance of leadership, motivation, and communication within virtual teams and highlights the need for a careful disbanding process to maintain a functional virtual network of motivated experts for now and for the future (Hertel et al., 2005).

2.5.2 Managers responsibility in the process of change

The leader's role is vital during change management, and managers can overcome it in numerous ways. The manager may have opinions about the change, its necessity, or how it should be done. However, they must be classed and understand and internalise the organisation's perspective on the need for change. From the perspective of the success-ful change management process, creating a trust-based approach to communication can affect the trust of the organisation's personnel towards the changes (Bibb & Kourdi, 2004, pp. 108-109).

In the face of changes, the manager's behaviour should involve the organisation's per-sonnel in the change by listening to their views and trying to answer the personnel´s questions and other needs in the face of the change to the best of their ability (Mullins, 2005, p. 943). Mullins (2005, p. 943) researched that by acting this way, the staff is given space and the opportunity to make their own opinion heard, and their ideas can also be used in the planning phase of the change. In addition to involvement and active listening, the success of the change management process is maintaining transparency in the change process (Bibb & Kourdi, 2004, p. 21). Bibb and Kourdi (2004) stated that with active and continuous transparency in an organisation's operations, critical or unpleased news might be more accessible to share with the organisation. In terms of the virtual team leader's activities, it would be helpful to increase the team's understanding of the change by visualising the future view and goals, to achieve which the leader can rely on the strategic action points of the change, getting support from them to motivate and engage the team (Jabri, 2012, pp. 14-16).

3 Methodology

3.1 Research philosophy and approach

According to Saunders et al. (2007, p. 101), the research philosophical framework consists of eleven different perspectives, the mutual differences of which enable different studies and perspectives. The research philosophy used in this study is interpretivism, which focuses on describing social roles and experiences between people (Saunders et al., 2007, p. 106). Based on Saunders et al. (2007, p. 106-107), the interpretive thinking model is a part of epistemology, and its compatibility with research on leadership and its various forms has been disputed. However, the depth of the research author's familiarity with both the research topic and the unique features of interpretivism is an influencing factor in whether interpretivism can be used as a research philosophy (Saunders et al., 2007, p. 107; Blumberg, B., 2011, p. 17; Symon & Cassell, 2012, pp. 20-21). This study's goals and research questions support the validity of interpretivism as a research philosophy for this study.

3.2 Research desing

Academic research can be carried out in different ways, depending on the research goals and the planned method of execution (Adams et al., 2014, p. 6). Two theories are the most common and the most well-known when doing academic research. These theories are qualitative research based on the experiences and perspectives of individuals and quantitative research based on statistical research in general, and they stand in contrast when observing them with each other (Lincoln, 2021, p. 3). This study has utilised a qualitative approach by collecting and analysing individual experiences from a carefully considered and limited target group. Qualitative research focuses on understanding an individual's experience by narrowing a target group and gaining their experiences through interviews or surveys (Silverman, 2021, p. 3).

3.3   Data collection methods

During the creation phase of the survey, efforts have been made to consider and map the most critical areas in terms of the overall result of the study. When considering the data collection method for this study, in addition to the survey, another option was to conduct the study as an interview study. Interviewing as a data collection method can be used in qualitative research (Rubin & Rubin, 2005, pp. 2-3). By interviewing individuals in the target group of the study, a broader insight into their thoughts and a deeper analysis of their experience of the topic could be obtained (Rubin & Rubin, 2005, pp. 2-3). However, from the point of view of topic delimitation, a questionnaire survey, which is also suitable for collecting data for qualitative research, was chosen as the data collection method for this study.

The possibility of error in survey-based data collection is possible, which is why possible errors have been considered in the survey design (Weathington et al., 2012). In this study, the possibility of errors has been tried to prevent by sharing information with the target group of the aim and goals of this study. The information about the objectives of the survey was clearly shared with the individuals of the target group. Because of the expectations of the survey, the questions included in the survey were formulated to support the research questions presented in chapter one of this study.

The target group was narrowed down using two questions defined based on the research questions, the answers of which could be analysed alone to analyse the applicability to the target group of this study. The questions selected to define the target group were:

1. Do you work in a virtual operating environment?
2. Has your organisation experienced changes in its operations or structures recently?

If the individual answered yes to both questions, their experience and opinion could be considered reliable in this study. After that, the individual's suitability to the study's target group was ascertained by ensuring that the individual understood the anonymity of

the data collection and was ready to give a view based on their own experience using this study. After reaching a consensus, the individual was forwarded a link to an anonymous survey.

The type of the survey	Industry of the responders organisation	The total number of personnel in the organisation
Employee survey	Technology	10 000 -
Employee survey	Technology	10 000 -
Employee survey	Automation	10 000 -
Employee survey	Banking	0 - 1000
Employee survey	Manufacturing Industry	0 - 1000
Employee survey	Education	1000 - 5000
Employee survey	Software	0 - 1000
Employee survey	Automotive	0 - 1000
Employee survey	Technology	10 000 -
Employee survey	Metal Industry	10 000 -
Employee survey	Process Industry	10 000 -
Employee survey	Information Management	10 000-
Employee survey	Software Development	0 - 1000
Employee survey	Technology	10 000 -
Employee survey	Technology	10 000 -
Employee survey	Manufacturing Industry	10 000 -
Employee survey	Technology	10 000-
Employee survey	Manufacturing Industry	10 000-
Employee survey	Manufacturing Industry	10 000-
Employee survey	Energy Technology	0 - 1000
Manager survey	Information and Communication Technology	1000 - 5000
Manager survey	Technology	10 000 -
Manager survey	Food Industry	1000 - 5000
Manager survey	Technical Services	1000 - 5000
Manager survey	Manufacturing Industry	0 - 1000
Manager survey	Food Industry	1000 - 5000

Table 1. Background information about the target group of this study.

Table 1 shows the target group of this study. The aim of Table 1 is to present the target group and their background information with the given information. Due to the anonymous nature of the survey used to collect data for the empirical part of the study, the respondent's identity has been hidden. The first column of Table 1 shows the survey type

of the responders. A minor number of results of the supervisor survey were considered when analysing the answers to the survey, which is why the questions from the end of the supervisor survey have not been considered in the results of this study. However, utilising the survey framework regarding change management experiences has been possible. However, all the questions in the supervisor survey are presented in Appendix 2. The second column of Table 1 presents the industries where the individuals of the target group are working. The lack of organisations' industries of the individuals in the target group, from which the individuals reflect on their experiences of the organisation's most recent change management process. The third column contains information about that organisation's total number of personnel. The target group of the study was individuals working in different organisations. The aim was to select organisations representing various industries and size categories for the research, especially those working in them. Examining the data provided in Table 1 about the backgrounds of the target group, it can be stated that the target group represents different industries and organisations of various sizes. In addition to the variability of the size difference of the organisations, the target group represents 14 different industries.

Brace (2018, p. 50) pointed out that too long and complex survey-based data collection can create challenges in verifying the veracity of the data conducted by the survey because a survey perceived as complex or unclear can be perceived as unmotivating. This can cause issues where it cannot be guaranteed that the person responsible for the survey can answer the survey questions consistently and using full judgment (Brace, 2018, p.50). For the empirical part of this research and the material to be perceived as reliable, this survey was carried out by limiting and examining the essentiality of each question from a critical point of view regarding the research process. The questions were created, corrected, and reviewed based on the reference framework created by the research questions, which made it possible to limit the number of questions and change the wording to make them easier to understand and internalise.

In addition to this, the number of open questions was limited to a minimum. Instead, the answer options of the survey mostly contain a five-level answer scale, which allows the survey respondents to think about and reflect on the question on their personal experience and thoughts on the matter (Lincoln, 2021, p. 153). The five-step answer option appears in both surveys as a unifying factor and the most common answer option. In these questions, the answer options are as follows: I disagree, I partially disagree, Neutral, I partially agree, and I agree.

The literature review of this study has been used to support the creation of the questionnaires, and based on it, the questions that support answering the research question have been created. When creating a survey, extracting possible questions from the literature review is an excellent way to ensure the parallelism of the survey and the literature review (Adams et al., 2014, p. 121).

The data used in this study has been collected using two forms aimed at different target groups. The first target group is the virtual team members who have been managed through the change, and the second target group is the virtual team leaders. By targeting the target group of this study to these two groups, information can be gathered about one issue from both perspectives with the help of a survey. The questionnaires that serve as the empirical reference framework for this study have been created based on the content and topics of the theoretical part of the study, and the questions can be found in the study's appendices, Appendix 1, and Appendix 2.

The non-probability sampling technique was used in selecting the survey's target group, which was defined as individuals suitable for the study (Symon & Cassell, 2012, pp. 38-39). The individual's suitability is examined from the point of view of previous experience, which in the case of this study is the experience of change management in a virtual operating environment from the point of view of either an employee or a person in a leadership role.

The purpose of the survey presented to the target group is to get information about the individual's experience of change and its management in the virtual environment where the individual works. In addition to the individual's knowledge, the aim and purpose of the questions selected for the survey are to find out how changes and change situations are experienced in the individual's organisation. The survey was carried out for an individual. However, the goal of some questions is to achieve a broader picture of the individual's organisational situation, as the opinions and thoughts of a larger group can also influence the individual's opinion.

These two forms were initially created in the same way to give an overview of managing virtual teams through changes, but the rest of the forms are slightly different. The differences between the forms are designed to provide a broader picture of what leading virtual teams through change is like and how it could be improved and developed. The structure of the interview body is shown in Figure 9.
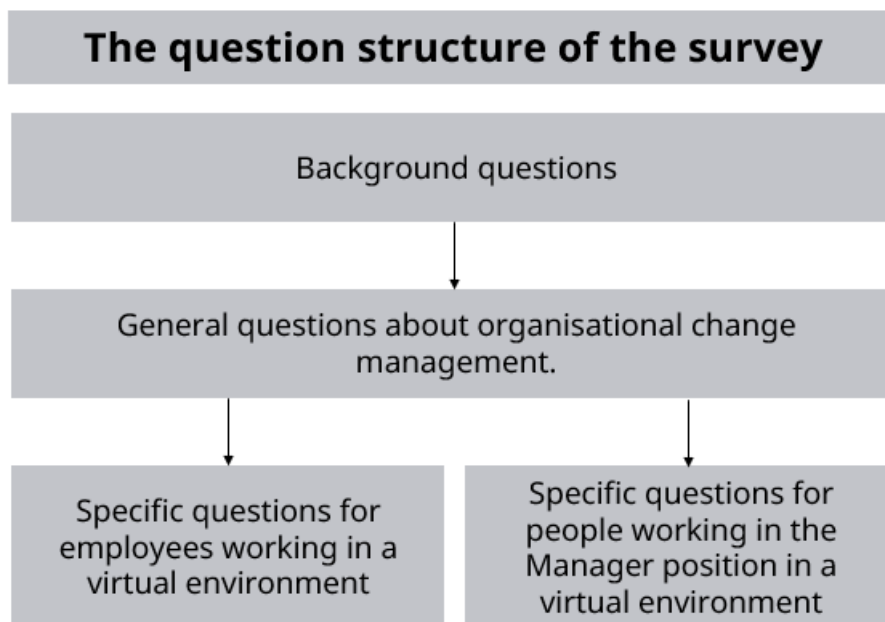
Figure 9. The question structure of the surveys (by the author of this study).

The survey questions are divided into three categories: background information, questions about change management, and questions about management meetings. The questions are the same in sections one and two. However, section three has a slightly different question layout. This layout aims to get accurate data on the managers' and employees' management experience and how they differ. The questionnaires and their questions can be found in Appendices 1 and 2 of this study.

The survey addressed to people working in virtual operating environments contains 22 questions, 13 of which have a five-step menu as an answer option, six have an open answer field for a free-form written answer, and in addition, three questions have an individual list of answer options, the details, and purposes of which are open in the survey. The survey addressed to managers of virtual teams has 19 questions, 10 of which can be answered according to five-step answer options, and five are open-answer options intended for a written answer. In addition, individual answer options have been set for the four questions, the details and purpose of which are open in the survey.

Based on the answers to the survey, the purpose is to determine which areas of virtual team change management would need a closer look and updated functions to meet the needs of managers and employees during the change process. The data collected based on the answers is viewed as a single entity, and the results are presented and observed with the help of graphs and diagrams in Chapter 4. The findings of this study are also presented with direct quotes provided from the target group. The quoting aims to provide individuals with knowledge of how they have experienced the change management processes and what they have pointed out during those processes.

3.4   Analysing the empirical material

The empirical material of this study has been collected and processed from the point of view of qualitative analysis, utilising thematic analysis as a data analysis method. The thematic analysis examines similarities and patterns in quantitative research material

(Aronson, J., 1995; Braun & Clarke, 2022, p. 4). In this study, thematisation was utilised from the survey responses, which served as the primary source of the empirical part of the study. The analysis was done by looking for commonalities and recurring patterns.

Thematisation is an analysis method used in research to look for similarities and differences between the answers of two surveys. The questions asked in the questionnaires were set so that possible differences between them could be observed regarding change management and its experience between employees and people working in a superior position.
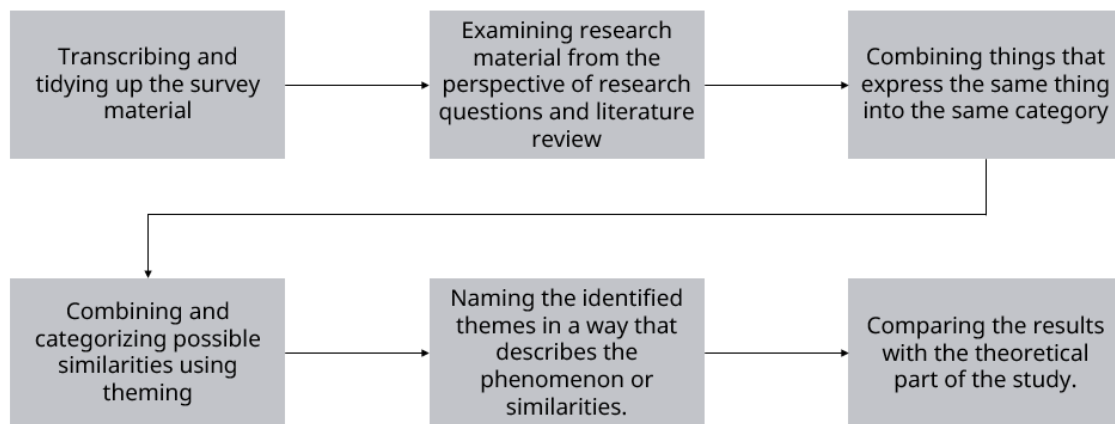
Figure 10. The different stages of analysing the material used in this study (by the author).

Figure 10 above presents this study's analysis process, which is divided into six stages. These steps clarify the data processing and analysis to guarantee the study's validity.

3.5   Trustworthiness of the study

When examining the quality and trustworthiness of research, three definitions can be used to define it: reliability, validity, and ethical conduct. The three definitions are essential when conducting qualitative and quantitative research. (Adams et al., 2014, p. 245).

These three aspects above have been considered at every stage of this research. As the study progresses, the realisation of these aspects has been critically observed to ensure and guarantee the fairness of the results. The background of the work is that the written material used, and the material of this study is presented with the proper references. In this study, an attempt has been made to use current and high-quality articles and studies that support the research questions of this study.

The ethicality of the research has been ensured at every stage by actively examining the way the research is carried out and its ethical perspective. The survey used as data for the study was designed and implemented to ensure the anonymity of the survey respondents by reviewing the survey questions and by removing questions that harm anonymity. The answer options for the questions selected in the survey were also examined from an ethical point of view so that data collection could be carried out while supporting this research and, at the same time, protecting the privacy of the parties who answered the survey.

Resources have been used to ensure the reliability of the research and its achievement in different stages of the study. When planning the body of the survey, it was considered what is wanted to examine with the survey results and how these goals could be achieved. The survey was forwarded to entities representing different industries and organisations of various sizes to ensure that this research reaches and considers employees and people in management positions across organisational and sector boundaries.

Carmines & Zeller (1979, p. 37) presented four methods for evaluating the integrity of empirical measurements. These methods are the retest method, the alternative form method, the split-half method, and the internal consistency method (Carmines & Zeller, 1979, p. 37). Of these four methods of measuring veracity presented by Carmines & Zeller (1979, p. 44), this study has applied the internal consistency method, which has

been implemented by conducting only one survey for each target group, and the material used in the assessment of integrity is collected from the guidelines of the survey answers.

The reliability of this study has been analysed at different stages of the study. Previous studies used in research and other sources on the subject have been examined from a critical perspective. A critical approach was also used to plan the survey's target group. When preparing qualitative research, according to Symon and Cassel (2012, p. 45), at least 15 respondents should be collected for the survey so that the data collected based on the survey can be considered reliable. Twenty-six pre-selected individuals representing diverse backgrounds from various organisations and industries responded to the questionnaires of this qualitative study.

Overall trustworthiness was also considered in the analysis and presentation of the survey findings. The research results are presented by combining similarities between the theoretical and empirical parts of the research. Considerations and similarities that occurred in the research are observed using various tables and graphs as an illustration. Using tables and graphs to present research results ensures the realisation of research reliability and validity when implementing the research in its various phases.

4   Findings

4.1   Working in a virtual team in the midst of changes

This chapter focuses on presenting and analysing data collected based on surveys on how the change process and its management are experienced in virtual operating environments. The chapter presents the background of the target group's individuals in virtual operating environments, examines their experiences of change from planning to implementation, and observes what kind of thoughts the target group has about change management and its use in a virtual operating environment. In addition, by utilising the review, it has researched what kind of ideas the target group has about change management and its use in a virtual operating environment.

The target group's experience working in a virtual environment was measured by asking the target group how long they have worked in a virtual work environment during their working life. By analysing the target group's experience working in virtual operating environments in Figure 11, it can be noted that 62% of the respondents say they have used virtual tools for three or four years. 23% of the respondents said they had worked in virtual operating environments for the last two years, and 4% said they had worked in a virtual environment for a year. 11% of the respondents said they had worked for more than four years in virtual environments. These 11% had experience in virtual working for more than ten years.
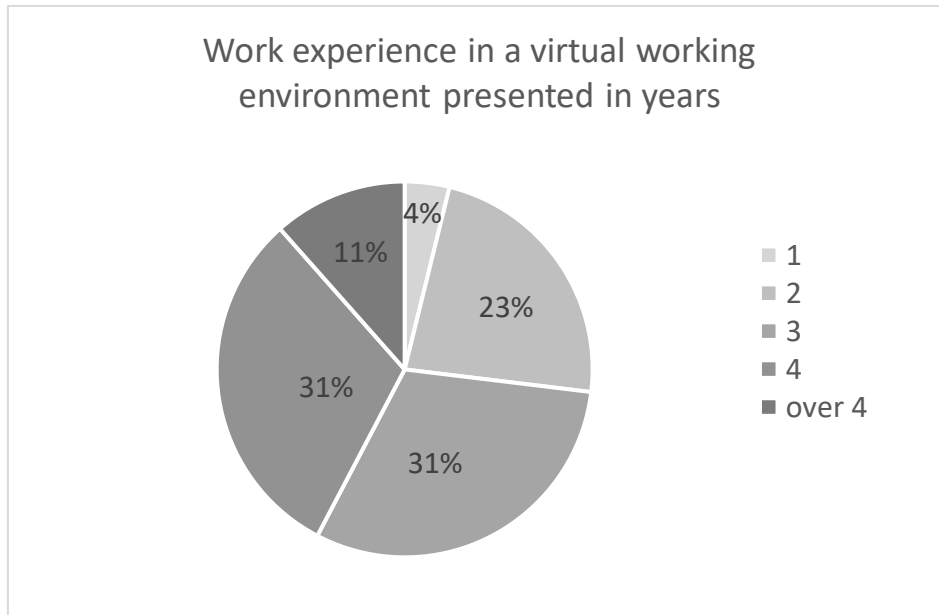
Figure 11. Work experience in a virtual working environment

This corresponds very well with the timeline of the pandemic, which affected work and its ways and methods, especially in 2020 and 2021, enabling a permanent change in the learned ways of working. According to a study commissioned by the European Union (Eurofound, 2020), half of the individuals who participated in their study conducted in 2020 say that they work from home, using a virtual operating environment. When comparing the research conducted by the European Union aimed at European citizens, it can be mirrored in the diagram in Figure 11, where an apparent increase during the timeline of 2020-2021 in the target group's experience of working in a virtual work environment can be observed.

In the results of this study, it is noticeable that the target group's experience with the virtual operating environment started for the majority of the group right at the time of the pandemic, in 2020 or 2021. As the COVID-19 pandemic spread in the spring of 2020 (World Health Organization, 2024), efforts were made to minimise social interactions, and this can also be seen in these research results. Similarities can be observed between the spread of the pandemic and the start of the research target group's experiences of the virtual operating environment that can be interpreted.

Information about the length of experience of the target group when working in virtual operating environments can be considered significant information from the perspective of the study's research questions. As shown in Figure 11, 89% of the respondents have started working in virtual operating environments during the past four years, after the global pandemic started. Individuals' experiences of management methods behind the change process are valuable information about how change management has been managed. In addition, by looking at the results, it is possible to observe what should be considered or developed in the change management processes so that they adapt better than before to today's virtual operating environments.

In addition to the experience of the target group's virtual operating environments, from the point of view of this research focusing on change management, it is interesting how individuals describe their organisations' attitudes and feelings towards change. When examining an individual's experience of change, allowing for two perspectives, a positive or negative experience, the change is generally considered positive, according to Kennedy's (2017) research. Analysing the survey results, it can be observed in Figure 12 that 40% of the respondents feel that the change is perceived as a positive thing. At the same time, 40% of the respondents shared, based on their experience, that their organisation perceives change situations as a negative factor. 20% of the respondents answered that the change is a neutral matter in their organisation. Thus, it does not cause opinions or possible resistance to change on one side or the other in the organisation's operation.

Maintaining positivity in the organisation's operations, for example, maintaining a marketplace, was presented as an essential point in Robbins and Judge's (2010, p. 269) research. It would be good for the organisation to strive to give internal and external stakeholders a positive image of its operations in the face of change based on trust and open communication. However, in this study, implementing a positive attitude of internal stakeholders is essential. When faced with possible change situations, the changes can be experienced as a positive opportunity to develop and update the organisation's functions.

The general attitude towards the change situations in organisation

- Positive
- Negative
- Neutral
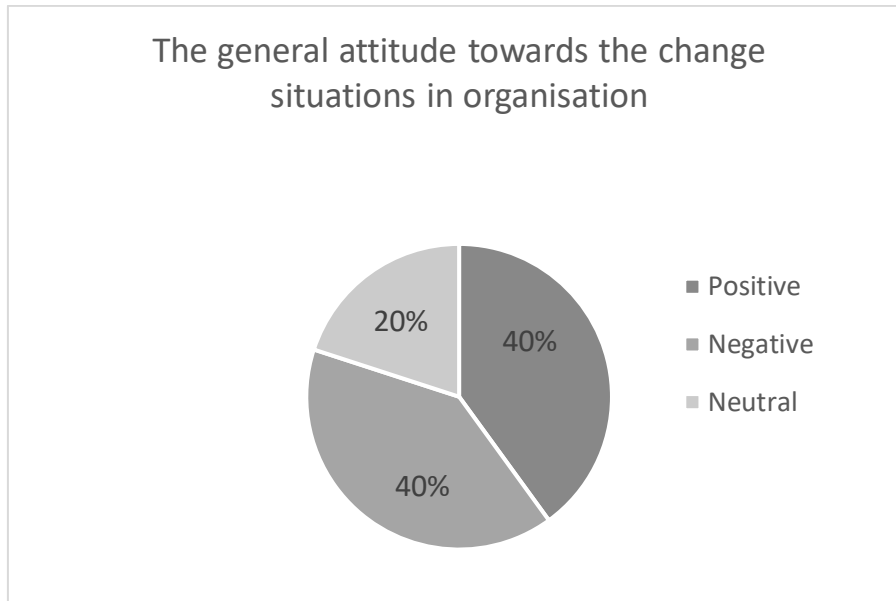
Figure 12. The general attitude towards the change situations in the organisation.

Figure 12 shows that 20% of the respondents answered that the change was a neutral issue in their organisation. When considering the position of neutral attitude and the line between positive and negative attitude, neutral can be left to its value, like positive and negative. Looking at the perspective of change, the neutral attitude can be analysed based on Kennedy's (2017) research because change is fundamentally seen as a positive thing. Whether the individuals who chose the neutral option perceive their organisation's readiness for change as a positive or negative thing can be influenced by the organisation's or individual's previous experiences with change and its comprehensive change management process.

The way of thinking of individuals who have experienced the change as a neutral matter in the organisation's operation can also be observed using the Oreg et al. (2018) four-dimensional model. This model, its aim, and its possibilities of use are presented in Chapter 2.3.1. Figure 13 presents the thoughts of the target group in percentage units, describing how the individual has experienced their mood amid a change. The target group was asked to choose the option that illustrated their feelings towards the change.

When analysing the four-part model, in which the experiences of the target group are placed, it can be observed that 82% of the respondents feel that the change in their emotional state was either a Change in Proactivity or a Change in Acceptance. Both options mentioned above can be read as positive valence according to the thought model conducted by Oreg et al. (2018). While the experience of positive valence is significant, in a change situation, those individuals who experience or have experienced a change following negative valence must be considered. Based on the survey, 8% of the respondents said they had experienced Change Resistance, and 8% shared their experience of Change Disengagement. In total, 16% of the respondents shared their feelings about valences read as unfavourable.

High activation

8%   38%

Change Resistance:
Stressed, Angry. Upset

Change Proactivity
Excited, Elated, Enthusiastic

Negative valence — Positive valence

Change Disengagement
Despaired, Sad, Helpless

Change Acceptance
Calm, Relaxed, Content

8%   46%

Low activation
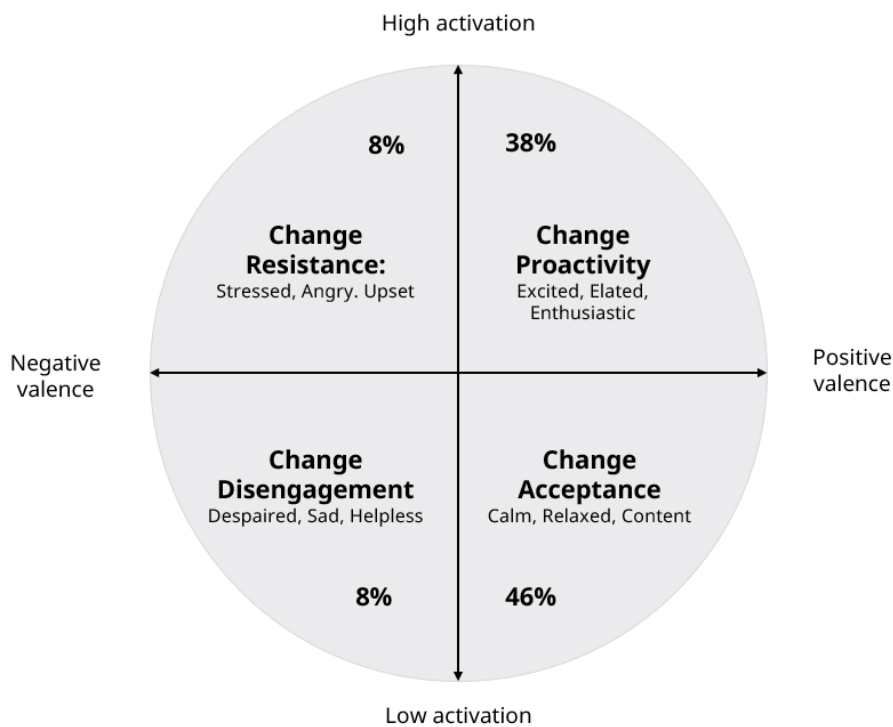
Figure 13. Alternatives for experiencing organisational change based on individual experience, with the percentage units added from the survey's target group (Oreg et al., 2018; author of this study).

By examining Figure 13, it can be noticed that most of the target group feels that their organisation and individual experience correspond to Change Acceptance. This gives the impression that 46% of the respondents experience the change and its different stages calmly and confidently. However, 54% of the respondents experienced the change

through low activation, which includes the feeling of helplessness through negative Valence, sadness, and the calmness and contentment towards the change that emerges through positive Valence.

When leading the change, it would be essential to consider these four different thoughts and ways of experiencing the change in the organisation. Individuals who experience change situations, such as resistance or disengagement, are especially essential for change management. Ensuring the change management experience of these individuals and providing support at different stages of the change can change how individuals think about the change in a more positive direction.

Commitment to the organisation's day-to-day operations and culture is an essential factor in the meaningfulness of an individual's work. In times of change, faith and trust in the organisation's operations and future goals may be needed more than usual. However, the commitment of individuals to the organisation plays a significant role in managing and implementing organisational change. Choi's (2011) research also considered this aspect, finding that commitment is of great importance during change.

Considering the research results, the participation and consultation of the members of the organisations was perceived as an essential and valuable thing in the middle of change management. From the answers of the target group, using thematises, it is possible to identify similarities to Mattiske´s (2020, pp. 121-125) thinking about how communication and its openness play a significant role in organisations that use virtual operating environments, especially during times of change. When the target group was asked which subject area, they felt was an opportunity to develop change management and its processes, half of the individuals answered that they felt that communication was too little concerning the situation or insufficient about the scope of the change. Below are direct quotes from individuals' experiences of communication during change:

(A) In open communication and trust towards the members of the organisation.

(B) Maybe the challenge is communicating the impacts to stakeholders and their operations/developments.

(C) Communicating the goals and effects of implemented changes.

(D) The most common challenge I faced was being able to connect/bond with team members – it is difficult to show empathy and understanding through a camera.

(E) Noticing and analysing people's feelings remains relatively low. Also, the number of spontaneous meetings and contacts is small, so communication is not necessarily as spontaneous as it should be.

As can be seen from the experiences of individuals, communication and its importance are perceived as necessary processes of change management in a virtual environment. In addition to the lack of communication, the lack of belonging is evident in the individuals' contributions. When operating in a virtual environment, face-to-face interaction may be minimal, based on the geographical locations of individuals, so conveying different emotional states, sympathy, and understanding in virtual communication can create challenges in the functioning of organisations and teams. Similar observations can be found when examining the results of this study, and the results of Mullins's (2005) study on the skill of communication and listening when managing change can be seen in the experience and thoughts of individuals about what they think is challenging in the changes taking place in virtual operating environments and how the identified challenges could be translated into valuable parts of change management processes in organisations' operations.
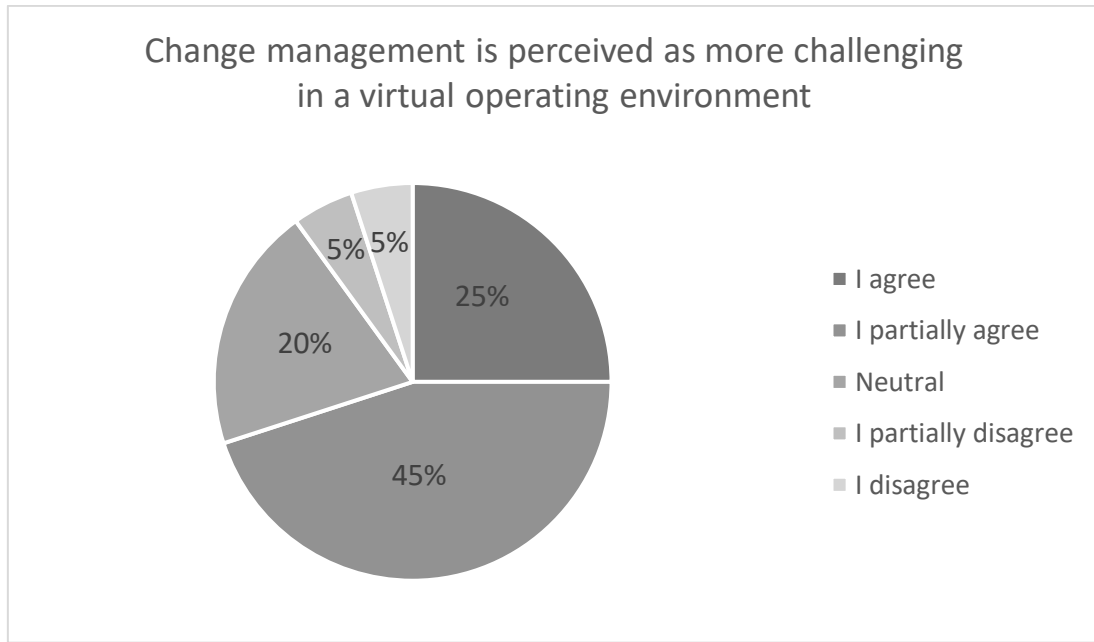
Figure 14. The experience of the challenges of change management in a virtual operating environment.

70% of individuals find change management and implementation more challenging in a virtual operating environment compared to a typical operating environment where employees work on the organisation's premises and meet each other daily. A quarter of respondents find change and its management more challenging, and 45% of respondents think change management is partly more challenging. 5% of the respondents felt that change management was more manageable, and 5% partially easier in a virtual operating environment. Figure 14 reflects the potential distribution of individuals' experience of the change management process when operating virtually. As the majority feels that the management and implementation of the change is more challenging, it is a matter that the group responsible for the changes in the organisation could pay attention to when planning the following change.

When examining the answers of the target group, similarities could be noticed in the challenges faced by the virtual team during change management. Challenges were identified as, for example, the quality, quantity, and method of communication, as well as understanding how to internalise new methods of operation. The challenges individuals

have faced during change management can be observed by studying the thoughts of the target group below:

(F) With virtual environments especially, I think management needs to be even more diligent about communicating the change process's progress to those affected by it; clarity and consistency are essential here. If these are in order, management has a better chance of successfully completing the change.

(G) Sometimes, it feels difficult to understand and utilise the new processes and the aim behind the change when operating in virtual teams.

(H) As long as the connection with the direct line manager is not lost, it does not matter if it happens virtually or face-to-face. I think it is imperative for management to stay in contact with the organisation's members throughout the change process and give out information regularly. Of course, not everything can be announced before official decisions, but to keep everyone calm, it is good to inform at least about the higher-level overall plan.

(I) Through multileveled communication, the prerequisites and outcomes of the change are presented to members of the organisation.

(J) The virtual environments may bring gaps in communication and people's actual thoughts on the change.

The communication of the vision is the fourth stage of Kotter's (1996) eight-part change process (Figure 1). Based on the comments of the individuals, it can be concluded that, from their experience, the communication of the goals of change defined by Kotter (1996) has not been entirely successful. However, it must be remembered that Kotter's eight-part change management model cannot always be directly applied to the change

process of various organisations. Still, it may need to be modified and individualised to meet the organisation's individual needs.

Using thematisation, the experiences of the individuals presented above can be used to find unifying wishes and observations about the lack of constant communication or the low current state. The third phase of the virtual team management lifecycle process, stated by Hertel and others (2005), presents the five-step process. Phase C focuses on performance management, including the regulation of communication (Hertel et al., 2005).

Finding a shared vision and tone when leading organisational change could be a factor that unites individuals and teams, which would help in different stages of the change process. However, finding a vision and tone requires mutual communication and understanding of the other party. An understanding of the issues caused by the change, such as methods of operation, results, and transition phases, is needed from the planners, the team leaders and the employees who are the subject of the change. The importance of the communication skills required to lead a virtual team successfully has also been highlighted in the research results of Smith's (2014) study. When choosing a communication method, it would be suitable for people in leadership positions to look at the consistency and purpose of the communication style (Smith, 2014).

Acceptance of change and the user-friendliness of the change management process could be increased by considering the different functions of the organisation and the individuals working in it when planning the change. By involving the various teams and parties of the organisation, the acceptance and understanding of the change could be more straightforward when, with the help of communication, the opportunity for mutual discussion, listening and understanding would be opened. The benefits of including different teams and individuals in the organisation in the planning of change, especially considering the needs and experiences of individuals, were also presented in Oreg et

al.'s study (2018). According to their research, cohesion and understanding can be in-creased with the change management process, specifically by paying attention to and involving individuals or different teams (Oreg et al., 2018).

Individuals' experiences of the change process, including those of the rest of the organ-isation in the planning phase, gave two-fold research results. Figure 15 shows that 40% of the respondents felt that they had been consulted and included in the change process enough or almost enough, and 35% of the respondents said that they thought that they had not been consulted or included in the planning phase of the change.
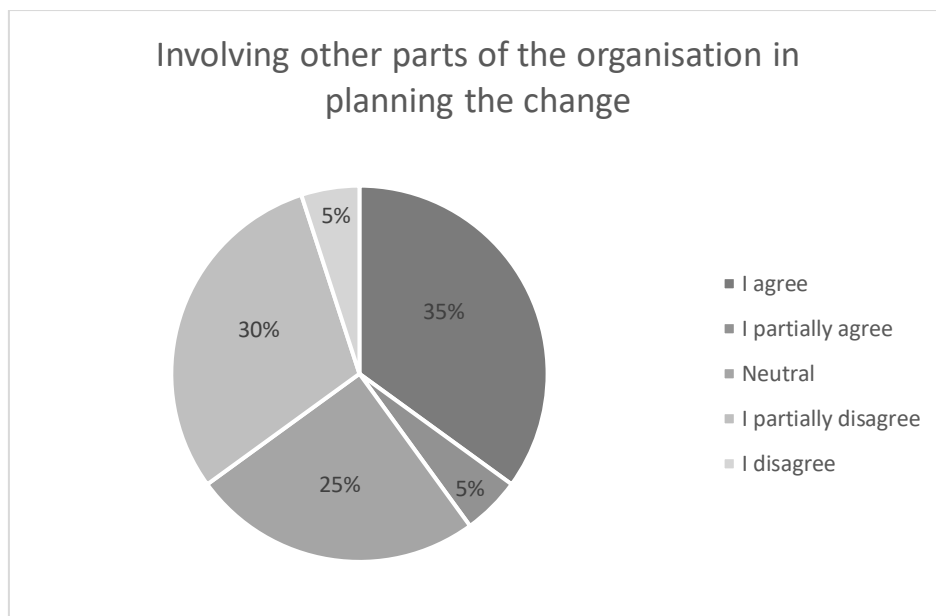
Figure 15. Involving other parts of the organisation in planning the change

Individuals in the target group broadly shared their views and experiences regarding how different organisational areas and teams could be involved in the planning phase of or-ganisational change. In the opinion of the individuals, other areas of the organisation and the employees could be involved in the change, for example, through various work-shops, surveys and information sessions utilising open discussion.

(K) All participants could be informed on the root causes for needing change and then truly listen to their perspectives and worries regarding abandoning old functioning models.

(L) Members of the organisation can be utilised in the planning phase of an organisational change by involving them in brainstorming sessions, gathering their feedback through surveys or focus groups, and empowering them to contribute their expertise and insights to develop actionable plans for implementation. This would foster commitment among employees.

(M) In my opinion, people who are affected by the change should be given a chance to be part of the planning process. Opinions and ideas should be collected from everybody in the planning phase. I do not mean that every single idea or opinion should be executed, but at least it gives them the impression that people working in the company are heard and that their opinions are valued.

(N) I feel that it is crucial to involve members from different departments to achieve a smooth transition. Also, you must understand the workflow in the departments so that you can predict the effects of the change and minimise the negative impact. To understand these things, you must involve the staff in planning.

(O) Explain the need for change based on data and knowledge management and its goals and why it is essential for the organisation's success, and then involve the organisation's functions in the planning of the change against the set goals.

The individuals also highlighted that participating in the change's planning could facilitate the change's planning process and the subsequent implementation. The valuable information about processes and practices on a practical level can be found precisely

from those people who work on the matter daily. For this reason, gathering information and experiences from the people working as the subject of change could be an important matter from the point of view of managing and implementing change and its success.

(P) I believe that the planning phase of the process should take a holistic approach, and this could be achieved by involving personnel from the organisation. This could help reveal unexpected details that need to be considered, thus ensuring a more straightforward execution of the planned change.

(Q) Conducting surveys and collecting feedback in small groups in the planning phase, particularly from people whose daily work will be most affected.

(R) During the planning phase, the organisation's members could be interviewed and requested to add their feedback on the current state of things and the planned change. They could be used to brainstorm, iterate, and adjust the change if/when needed, as they have the most ground expertise and experience.

When using thematisation as a method of analysis, one can notice similarities in the target group's answers regarding transparency, openness, participation, and visibility. In the light of these four sub-areas, the result presented in Figure 16 can be examined as to how the individuals experienced the planning process of their organisation's change and the accuracy of implementation communication in connection with the most recent change affecting the organisation.
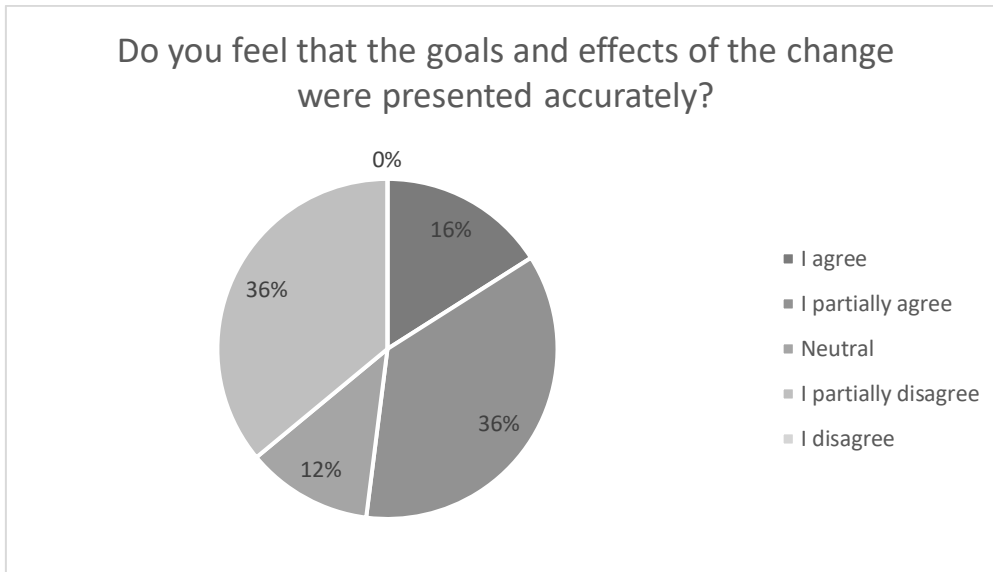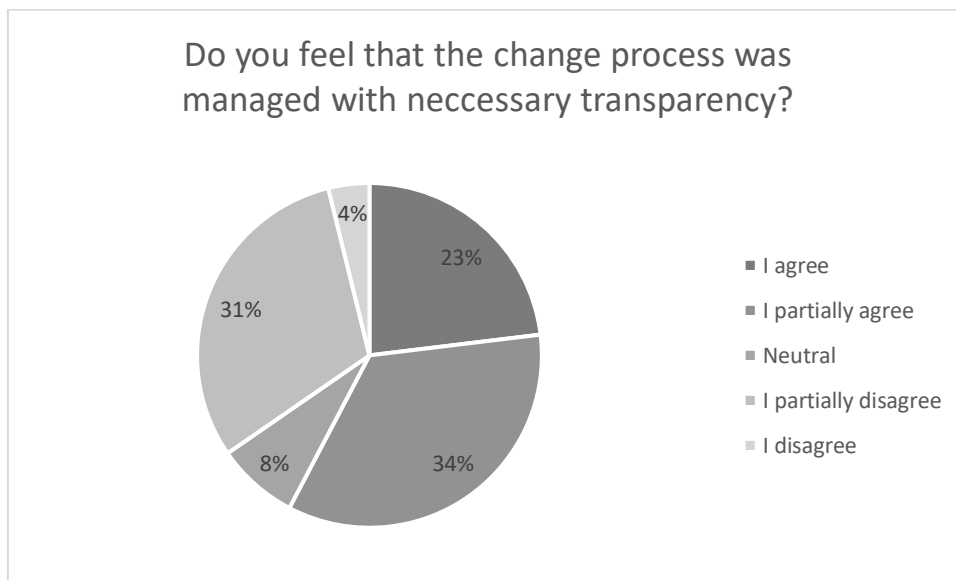
Figure 16. Experience of individuals in presenting and implementing the change in the organisation.

From Figure 16, it can be observed that the presentation of the goals of the change to the different levels of the organisation was felt to be of sufficient quality in the opinion of 16% of the respondents. In addition to this, 36% of the respondents thought that the scope of the presentation of the change was partly of sufficient quality. 12% of the respondents said that they shared a neutral opinion on the matter, and 36% of the respondents felt that the goals and effects of the change on the organisation's operations could have been presented to the organisational levels more broadly.

The clarity of the change presentation could be improved by considering the importance of communication in the different phases of change management, using and utilising communication and its different forms throughout the change management process. Examining the results of Figure 15 by placing the results of the question in Kotter's (1996) eight-part model of change management (Figure 1), it can be stated that points 3 and 4 of the eight-part model are critical from the point of view of presenting the vision and goals. When understanding the background and goals of the changes is open to different levels of the organisation, it can be easier to accept the change and understand the purpose. According to Jabri (2012, pp.14-17), opening the understanding of the goals of the

change and increasing the knowledge of their team are two of the tasks of a virtual team leader amid change. Understanding can be improved, for example, by visualising the goals of the change, thus humanising the steps defined to achieve the goals (Jabri, 2012, pp. 14-17).

Figure 17 shows similarities with Figure 16. However, it is remarkable that only 23% of the respondents feel that the change was led transparently. This means that about one in four of the respondents felt that their organisation's change management was a transparent process. At the same time, 77% of the respondents felt that change management in the organisation should have been conducted using greater transparency.

Figure 17. The experience of transparency from the perspective of individuals in managing the change process.

Communication and awareness raising are expected from the party responsible for planning at each stage of the change. In addition, individuals experience a more detailed understanding of the purpose of the change and the operation method of new operating methods or structures in different parts of the organisation. Research and examine the resourcing of communications for the different stages of the change process even before

starting the change. By acting in this way, implementing the change could achieve a more transparent process from the point of view of the organisation's members.

The implementation of transparency during the change and presentation of the goals in the change faced by the organisation and its management was examined and investigated by finding out the thoughts and experience-based knowledge of the target group of this study in high-quality end-to-end management of change management based on their experience. The experience of managing change was approached by examining the opinions of the target group about the success of managing change at a general level and by finding out whether individuals perceive the changes that have come to their organisation as a short-term or long-term change in their organisation's operations.

However, it is worth noting that understanding the importance of management and the fact that managing change transparently does not automatically mean reducing or decreasing the responsibility of management and managers. Gathering and maintaining reliability can be simplified in the organisation if the changes are presented, managed, and implemented following a transparent operating method. However, Mullins' (2005) idea that an approach based on hierarchy can sometimes be the right way to balance the organisation's operations is an operating model that does not prevent the utilisation of transparency.

The reason it is noteworthy from the point of view of the research is to find out the target group's thoughts about the change and its sustainability since the attitude towards a change intended for a longer term can be different when mirroring a change intended for a short term. A short-term change can be easier to accept because the knowledge that the state achieved by a short-term change is not a permanent function in the structure or operation of the organisation can make it easier to understand the change and increase the tolerance of individuals towards the change in question. On the contrary, a change planned as a long-term change in operation or structure can affect the thoughts and experiences of individuals, as well as the wishes and goals of the result of the change.

However, the organisation's management must consider the difference between a hierarchical and an open practice based on two-way communication.
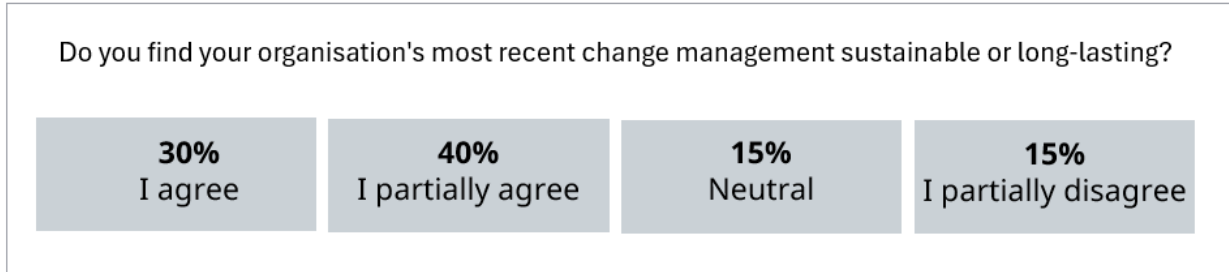
Figure 18. Individuals' experience of the sustainability or long-term nature of change in the organisation's operations.

Based on the experience of the individuals, it can be stated that the changes in the management process faced by the organisations represented by the members of the target group have been perceived as relatively sustainable and long-term from the perspective of the individuals. By observing the results of Figure 18, it can be noticed that none of the individuals feel that the latest change concerning their organisation was only short-term or unsustainable. 30% of the respondents see the change as a long-term change in their organisation's operations. In comparison, 40% answered that they believe the change is a long-term operating model in the organisation's operations. However, 15% of the respondents thought achieving longevity through organisational change was a neutral issue. At the same time, 15% of individuals felt that the change implemented in the organisation's operations was not necessarily long-term or sustainable.

As stated in the literature review of this study on page 13, there are situations where short-term changes can facilitate the introduction of long-term changes. However, these changes designed as short-term solutions should be guided to support the organisation's long-term change goals (Vance & Peik, 2006). Because of this, the question contained in Figure 18 sought to find out the experience of individuals in sustainable change management. Sustainable change management can enable better starting points for short-term and long-term changes in the organisation's operations or structures.

When asking the target group's opinion about the latest change in their organisation and its success based on its management, 10% of the respondents felt that the change management was successful. Instead, 50% of the respondents thought that the change management was partially successful. In addition, 15% of individuals experienced the success of their organisation's latest change management as neutral. 20% of the respondents shared that their organisation's change management experience was partially successful. The remaining 5% of respondents experienced that the success of change management was insufficient.

Figure 19. The target group's experience in managing change during the most recent change in the organisation.

Considering Figure 19 and the percentages presented in it of individuals' experience of the success of change management, it can be observed that a quarter of the respondents felt that the quality of change management was somehow lacking. At the same time, a total of 40% of the respondents shared their experience of change management as successful. From the point of view of the experience of success in organisational change management, it could be helpful for individuals or teams planning a change to study and identify possible error possibilities in their organisation to improve the state of the overall experience of the change process.

Individuals' experience based on change management can also be studied using the perspective presented by Vantrappen and Wirtz (2018) about adopting a flexible change management style when leading and implementing change. The question presented in Figure 18 allows the individual to tell the overall picture of change management, looking at their experience of how individuals in the organisation experienced change management and the style chosen for its management. By using a flexible management method in the management of change, the management experience in the internal examination of the organisation could be perceived as more pleasant, and the background purpose of the change could be better understood.
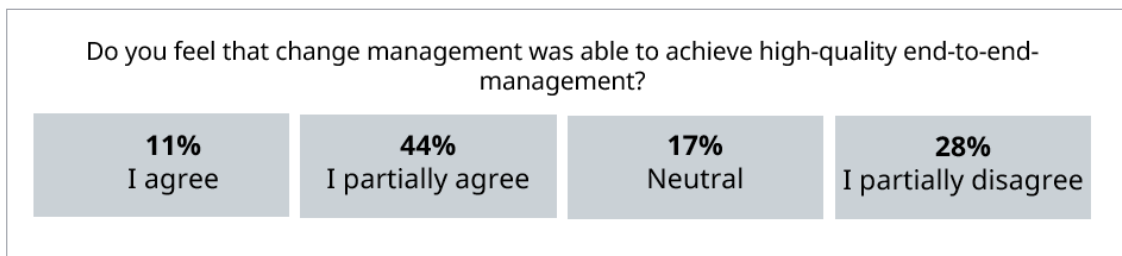
Figure 20. Individuals' experience of the quality of change management and the end-to-end management process.

By observing Figure 20 and its overall picture of the success of the change management of the individuals in the target group, it can be stated that none of the individuals in their organisation has experienced the end-to-end change management process as completely bad. On the other hand, 28% of the respondents said that their experience was partly incomplete, and the individuals did not feel that the change was managed with high quality. 11% of the respondents said that they thought the change management process was of high quality, and 44% of the respondents shared an opinion based on which it can be considered that their experience of managing the change that faced the organisation was partly of high quality but partly insufficient.

4.2 Issues to be considered in change management of virtual operating environments in the future

In this study, questionnaires were used to collect data for the empirical part; one was targeted at employees working in virtual operating environments who experienced change, and the other was targeted at people working in management positions. The last survey question intended for employees was about hopes for future change management situations. The previous question aimed to map individuals' wishes and needs during change. This chapter presents the wishes that have come up, which will be presented using thematisation, which is one of the analysis methods of the material. Below are selected thoughts and desires of individuals in the target group regarding future changes and their management.

(S) I hope that the organisation is patient because changes take time. It is not wise to wait for results too soon. Organisations should choose only the most relevant things to change - not too many things simultaneously.

(T) More time to plan the change so that its different impacts can be noticed and influenced even before implementation. A lot of discussion with different parties so that people in different positions have time to understand what it is all about and how it will affect to their work. Some are quicker to react, and others take longer to think and internalise.

From the two individual thoughts above, one can notice wishes about the importance of scheduling the change. Sufficient time should be reserved for implementing and understanding the new practices or operating methods that come with the change so that the organisation has more time to accept and internalise the processes that change with the change. The necessity and urgency of the change should also be examined in the planning phase of the change. Implementing changes in the organisation one small part at a time can, in some situations and specific organisational models, work more profitably and, in the long run, even more efficiently than one more significant change.

In addition to the time reserved for the change and its management and implementation, the individuals brought up the same points as in Chapter 4.1. was discussed. However, when asking about individuals' wishes for change management in the future, valuable information was obtained about what kind of wishes or thoughts individuals have regarding change management for their organisation. The three wishes or suggestions below summarise well where individuals recognise the need for development in their organisation's change management processes. These wishes or suggestions are based on the individuals' previous experience with the change management process. Based on this previous experience, individuals have been able to mirror the realised change process to their own needs or wishes for the process in question.

(U) I would like to get more transparency in times of change: collect feedback from the ground and explain reasoning behind decisions. Hear people and implement actions that truly change and provide impact where that is needed.

(V) Above all, clarity of change and information about change are things that should be addressed in the future in my organisation. Clarity of change is certainly supported by good planning of change. The planning and implementation of the change should therefore, without exception, be done excellently, and the necessary time and resources should be allocated to this. As I work in a global and large organisation, the different departments can also be very different from each other. In some way, it would also be important to take this into account.

(W) Stating the goal of the change concisely: what kind of change is wanted and why.

Transparency, listening to people, clarity, the importance of planning and implementation, and conciseness can be picked from the above future wishes. Based on the re-

sponses of the individuals, communication based on openness and continuity is expected from the party responsible for managing the change, which can help maintain trust in the virtual operating environment. Especially for organisations operating in a virtual environment, it is central to their operations to create and maintain trust in their operations. The role of trust in a virtual operating environment is critical for the continuity of the team's operations (DuFrene & Lehman, 2011, p. 29).

In addition to the points and wishes presented above, the need for communication, its quality, and implementation methods were repeated in the responses of the individuals in the research results. The importance of communication in the context of the change management process was studied by comparing individuals' experiences of the experience of change management in a standard face-to-face environment compared to change and its management in a virtual operating environment earlier in this study in connection with Figure 14. Considering the research results, the wishes of individuals for future changes, and the organisation's change management processes, creating and maintaining a communication link is regarded as an essential and desired thing in change management in virtual operating environments.

(X) I'd hope to see the planned change being communicated to the whole organisation earlier. This would give members of the organisation more time to react and prepare for it and even possibly make it possible to include more personnel in the planning phase.

(Y) In my opinion, the communication related to changes needs to be better. If the change is big and effects lots of employees a conference, townhall meeting whatever you want to call it should be arranged. This allows the employees to, for example, ask questions.

(Z) Good communication on targets and means how to go through the change.

By looking at the three comments given by the individuals above about their wishes in the change management process, it can be observed that they wish for sustainable communication that would be followed in the different phases of change management. In addition to sharing information, communication was felt necessary to accept and understand change. The more communication is carried out in connection with change management, the better the chances are for the success of the change management process from the point of view of different parts of the organisation. The opportunities for utilising communication in change management are extensive, and the organisation can choose communication methods that suit its structure and needs. To get the overall benefit, the relevance of communication in change management communication and creating a connection must be recognised by those involved in change management.

4.3   Summary of the key findings

Four special attentions and themes were identified by examining the experiences, thoughts, and wishes of the individuals in the research target group. These four identified themes are communication, involvement, transparency, and the allocated time to the change (Figure 21). When analysing the target group's answers, similarities were noticed precisely in these three aspects their importance in the change management process in virtual operational environments emerged in the research results at different stages.

Figure 21. Key findings of the study (conducted by the author of this study).

Previous studies on the topic have identified the importance of communication and involvement in the change management process. Communication is multidisciplinary, and it includes different forms of communication. However, reflecting on the quotations of individuals from the target group presented in this paragraph, it can be stated that different forms of communication are needed in the organisation's change management process. By utilising these formats of communication, two-way communication can be established, with information flowing through organisational levels from upwards to downwards and vice versa. By doing this, the parties planning the change can get information from individuals at the lower levels of the organisation that would otherwise not come to their attention.

The individuals in the target group of this study shared their thoughts on how the organisation's personnel could be involved in the change management process even more. The ideas about the forms of participation were communication-oriented, in which case involvement could be increased, and communication could be improved simultaneously. Ways for this cooperation based on the thoughts of individuals in the target group could be organising workshops or town hall meetings. When organising a workshop about change, involving members of the organisation's personnel could share their own visions and thoughts, while at the same time getting more information about the goals of the change and how to do it in the form of communication. This cooperation-based perspective of communication and involvement can be interpreted as one of the factors affecting the attitude towards change.

Examining this study's results from the research's novelty value perspective, allocating sufficient time to planning and implementing the change management process is critical to its success and the organisation's willingness to change. Previous change management studies have not acknowledged adequate time allocation, and in the analysis based on the experiences of the individuals in this study's target group, time use was raised as an essential issue in the change management process.

5 Discussion

Considering the findings of this study, it can be stated that the cornerstones of successful change management when operating in a virtual operating environment are an open and continuous two-way communication between management and employees, the participation of personnel in the planning phase of the change through listening and utilising their views, and the time allocated for implementing the change. The importance of communication cannot be underestimated when managing change in virtual operating environments. Due to geographical location differences, the face-to-face interaction of the organisation's personnel may be minimal, or it may not be there at all. For this reason, information on the personnel and consultation, especially from the point of view of change management, should be considered in change processes. In connection with the rebuilding or planning of the operating model or the structure of the organisation, the participation of the personnel can contribute to the feeling of the involvement of the personnel and thus facilitate the acceptance and implementation of new processes or methods of operation that are the goals of the change.

In the change management of virtual operational environments, it is essential to reserve sufficient time for the different stages of the change process. It may take time for the personnel to understand and internalise it, especially if it is a relatively significant change in the organisation's structure or operating method. When planning a change, the parties responsible for change management must consider the overall schedule of the change process, starting with the planning of the change, its presentation, possible questions and suggestions for improvement or change, and then implementation.

Change management and its different forms and ways have been studied before, for example, based on the models created by Kotter (1996), Lewin (1947), and Schein (1996). This study presents Lewin's model in Figure 1 and Kotter's model in Figure 2. Lewin's and Kotter's 8-step change management-oriented models and their weaknesses are presented in section 2.1 of this study. In this study, Kotter's 8-step change process has been examined from the point of view of its limitations. Implementing the change process in

question in a virtual operating environment is not a profitable method in terms of the research results of this study. However, Kotter's 8-step change process (1996) has a few excellent points that are considered and used later in this chapter.

Schein´s model (1996) strongly focuses on researching and identifying issues related to learning and change, which are based on the socio-psychological thoughts of individuals. Schein's model, presented in Figure 2, has a three-part process description of the change process from a socio-psychological perspective. These three identified process stages contain the thoughts and experiences that individuals may experience in the different stages of change (Schein, 1996). The model based on Schein's socio-psychological perspective can be examined and combined with the model of Oreg and others (2018), presented in Figure 4, of the ability to accept change in an organisation. In Oreg et al.'s (2018) model, the ability to accept change is divided into four different experiences of change: Change Resistance, Change Proactivity, Change Disengagement and Change Acceptance. The experience of the individuals of the target group of this study about their organisation's ability to accept change shared opinions and thoughts. Focusing on Schein's (1996) socio-psychological model in the change management process, especially in its early stages, would reduce the organisation's resistance to change and disengagement with change.

The model mentioned above's limitations are their focus on traditional models and ideas, which cannot necessarily be applied and implemented in the virtual operating environment that has become common nowadays. In addition to the three change management models mentioned above, this study, presented in chapter 2.4.6, introduces two models designed for the virtual operating environment and the activities of the teams operating there.

The first of these is the proposal developed by Marlow and others (2017) about the process description of the communication model of virtual teams. This model is presented

in section 2.4.6. in Figure 6. Examining the model created by Marlow et al. (2017), similarities with the results of this study can be noted. The model presents communication in three categories: frequency, quality, and content. Observing the experiences and wishes of the target group of this study regarding change management, it can be stated that the target group recognises the need for all three communication methods set by Marlow to ensure successful change management. Although Marlow et al. (2017) model is not directly created for change management situations, it can be seen as a process that includes input, communication flow, trust, and the result. As a result, satisfaction, eligibility, and performance were identified.

Smith's (2014) description of the global business model of virtual teams, shown in Figure 7, is examined in this study for its applicability from the point of view of change management. The presented model was initially created based on observations of a proposed business model that would be available in global virtual teams (Smith, 2014). However, its process-like content allows one to study the model's applicability as a change management process. By looking at Smith's (2014) process (Figure 7), one can notice its weakness in the level of communication. While Marlow et al.'s (2017) model was communication-oriented, Smith (2014) identified communication as part of his process in only three different stages. These phases are named Communication phases 1, 2, and 3. Of these three identified communication phases, only two are centralised as the communication phase intended for different parts of the organisation. By observing the results of this study, it can be stated that the level of communication based on Smith's (2014) idea is insufficient to meet the needs and wishes of individuals operating in virtual operating environments.

By combining previous studies on change management with the data and findings of the empirical part of this study, a process suitable for virtual operating environments has been created by the author of this study. This process aims to serve organisations in the moment of change management when operating in virtual environments. The process is named the Change Management process in virtual operating environments and is shown

in Figure 22. The purpose of the process is to describe and present, from the point of view of change management, such identified critical phases, the recognition and consideration of which are considered to play a significant role in successful change management from the point of view of this research.

The purpose of this process, presented in Figure 22, is to meet the needs of the research target group regarding what is perceived as a good change management process and how it should be developed to serve the organisation as well as possible during change. In addition to the responses of the target group, during the creation phase of the diagram shown in Figure 22, earlier, more traditional change management models were familiarised and analysed. The structures, usage possibilities and possible limitations of these previous change management models were studied by observing and considering how they could be applied to a virtual operating environment. A change management model suitable for the virtual operating environment was created by identifying the limitations presented in Figure 22.

In the preparation of the process, in addition to examining the perspective of individuals and previous change management processes, Marlow et al. (2018) model, presented in Figure 6, of what kind of communication in virtual teams would be needed and what actions could be taken to examine and improve it has been considered. The process presented in Figure 22, created in this study, consists of 14 different phases, of which the last phase focuses on the reflection of change. Thus, the process has defined 13 active stages that support change management performed in virtual operating environments. The final step of the model, step number 14, is marked with dotted lines so that its meaning can be specified when examining it.
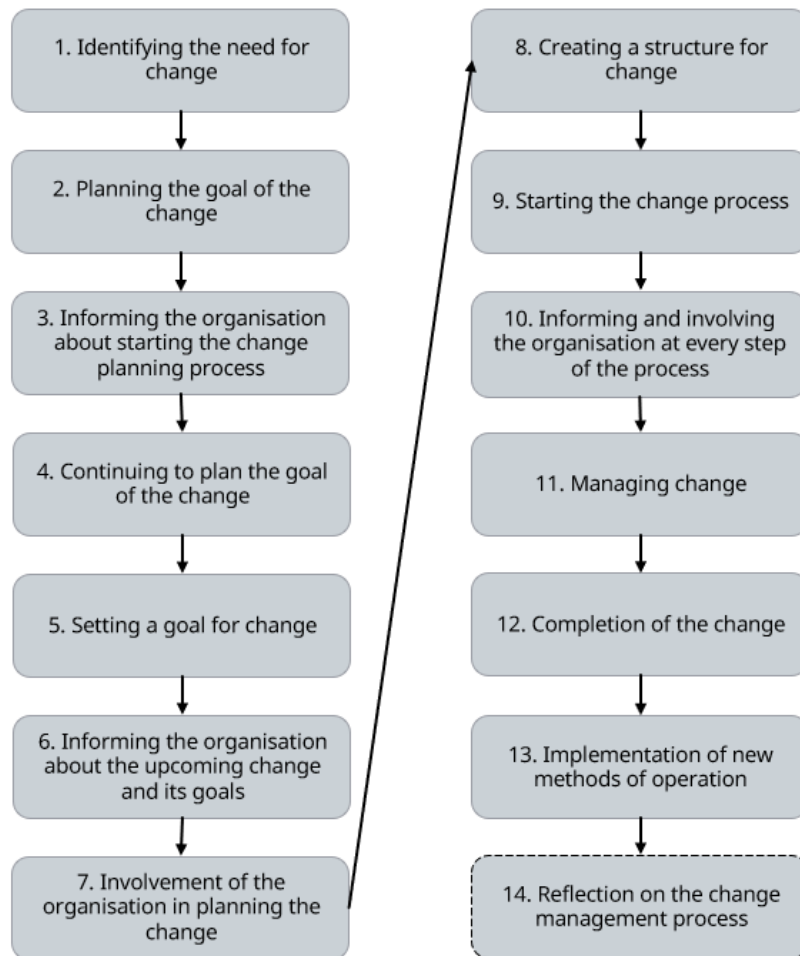
Figure 22. Change management process in virtual operating environments (conducted by the author of this study).

The process shown in Figure 22 starts with identifying the need for change and setting the change goal for the result of the change. The reason for recognising the necessity of change is that it can help guide the organisation in considering and planning the goal and outcome of the change. When there is a plan for the result to be achieved with the change has been identified and set, the future change and its goals should be communicated to those parts of the organisation that are affected by the change and the operating methods or structures that will change with it. In this way, the changing mindset can also be activated among the organisation's personnel, and their attitudes and needs can be met.

In the fourth stage of the process, after informing the organisation's personnel, one can focus on carefully planning the change's goals and the process needed to achieve them. The change's goal is locked in the fifth step, and in the sixth step of the process, the organisation's personnel are informed about it.

During step seven of the process, the focus is on mutual communication and listening to the opinions and thoughts of the organisation's members. When the goal has been defined in the fifth step, and the organisation has been informed about it in the sixth step, the seventh step is reserved for gathering and sharing quiet and accurate information. Whether it is an organisational change taking place in a virtual operating environment or a change in its operating methods, listening, understanding, and recording the experiences and views of the organisation's members can play a significant role in the successful implementation of the change. This phase relating to communication would include workshops or internal town hall meetings, where feedback and ideas could be collected from the personnel.

In the eighth step, the focus is on creating a plan for the change management process. This includes creating a schedule, ensuring, and strengthening continuous mutual communication, and dividing the change process into different stages. By dividing the change process into parts, smaller goals similar to the sixth stage of Kotter's Change Management Model are sought, making the overall change management process more accessible to manage and understand in the organisation's operations. It is good to structure and divide these changes, which resemble an intermediate step, precisely in connection with the process of creating the change structure, in which case the change management will be smoother. In addition, in the intermediate stages of the change, their schedule and content should be communicated to different areas of the organisation. Dividing the change process is also an excellent way to maintain a positive attitude towards change and atmosphere in the organisation's operations while the change is underway.

The organisation's personnel must also be openly informed about the change schedule. If the change process encounters delays, the personnel must be informed about them within a reasonable time window allowed by the prevailing situation. A well-planned change process is initiated in the model's ninth step. By paying attention to step 10 of the process, it can be ensured and checked that change management is carried out with respect for the organisation by nurturing an approach oriented towards informing and involving.

In step 11, the focus is on managing change. This phase includes an operating model based on communication and transparency, which has already been utilised in earlier process models. During step 12 of the process, the change management process is completed, in which case the goals locked in step five have been achieved through change management. Accepting and internalising new operating models or organisational structures can take time. For this reason, step 13 of the process focuses on implementing operating methods or organisational structures that have changed due to the change. When operating in a virtual operating environment, implementation can take time. The last step described in the process, number 14, describes the reflection process of change management. Reflection on the future would be essential to carry out directly after the change management process; development targets can be considered when possible.

6 Conclusions

This study examined change management and its processes in a virtual operating environment. The study presented and analysed previous change management models while examining their applicability to virtual operating environments. The topic of the study, *´´Managing a virtual team through change´´*, was approached from a perspective based on the previous experience of individuals. The goal of the selected perspective was to use a survey to map the experiences and thoughts of the individuals in the target group about the process, quality, and future goals of change management.

The purpose of the study was to answer in section 1.1 of this study to the defined research questions. These research questions were set to meet the topic and goals of this study. When examining previous studies on the topic, a research cap was identified in change management processes in a virtual operating environment. The research questions defined in this study are:

1. How to lead through the change in a virtual team?
2. What are the phases of the change process?

Many previous studies were found on change management as a subject area, which in this study has been analysed by dividing them into three sub-areas. The first of these includes the change management models formed at different stages of the 19th century. The second area is divided into studies that analyse the applicability and possibilities of using change management models developed in the 19th century in ever-developing organisations. The last of the sub-areas is the COVID-19 pandemic, which has affected humanity and its operations globally, and with it, the remote work culture has become even more common. With the increasing remote work culture, organisations' activities utilising virtual operating environments have increased.

When combining this study's research results with previous research on the subject, similarities and differences can be noticed in the learned thought models about change

management and its processes. Despite their publication date, previous studies on change management models have succeeded in identifying critical perspectives and phases in change management. However, the requirements of today's society have changed, which is why the previous models no longer serve today's organisations and their operations in the same way.

Chapter 4.3 of this study presented the key findings that emerged from the research results. Communication, involvement, transparency, and time were critical findings in the vortex's change management process. The value of these four aspects has not been recognised or included on the same scale in 19th-century change management models.

Allocation of the necessary time for process planning and implementation emerged among the target group. The findings of this study show a new perspective on two-way communication and its benefits. By allocating enough time for the overall change process, both the organisation's personnel and the change leaders are given time for a successful change management process and the experience it creates. To ensure that the necessary time is included in the change management process, in the planning phase of the change, short-term goals can be used in the long-term plan to ensure the organisation has the time and capabilities to understand and accept the change and its different phases. From the interpretation of the analysis based on the experience of the individuals in the target group and the conclusions drawn from it, the importance of time allocation as a success factor in the change management process creates novelty value for this research.

Because of these aspects, the change management model suitable for a virtual operating environment presented in Figure 22 of this study is built to contain the key findings of the research results. The model also answers the research questions by presenting the process of leading change in a virtual operating environment and the different stages of the change process.

Based on research and observations, this study states that by paying attention to communication, involvement, and transparency in every phase of the change management process, and especially in the phases of planning and active management of the change, the understanding, change-mindedness, and satisfaction of the organisation's individuals would reach a higher level. Understanding, willingness, change-mindedness, and satisfaction play a significant role in accepting a new operating model, contributing to smooth implementation in the organisation's operations.

6.1 Limitations and Future Research

The limitation of this study is that it focuses on the general way of conducting the study. Using the non-probability sampling technique, the selected target group enabled experience and need in the change led in virtual operating environments. In this study, it is recognised that the data collected on a large scale provides information about changes in virtual operating environments implemented in different ways, which are designed in the organisation and represented by each individual to meet the needs of the organisation in question. However, the differences between the respondents support the study's validation; thus, the study's results can be classified as valid and comparable.

The further research proposals correspond to the limitations outlined in the previous paragraph. Change management and its process in a virtual operating environment could be studied from the perspective of an individual organisation in two different ways. The first proposal for further research would be to study and analyse how an individual organisation utilising virtual operating environment conducts change management from the perspective of its personnel or management.

As another further research proposal, the change management model suitable for the virtual operating environment opened in Figure 22 could be studied in a case study style. When researching in a case study model, a target organisation operating in a virtual operating environment, which is about to start a change process, would be selected for the

research. In this case, the model of Figure 22 and its usefulness and limitations could be examined practically. In this way, the process formed in Figure 22 could be utilised to determine how the learned change management processes could be modified and adapted to the virtual environment. In a case study, it would be possible to concretely see how the challenges and different requirements brought by the virtual operating environment must be considered when the organisation faces a change situation. In this case, change management could be regarded as an organisational change from the perspective of the virtual operating environment.

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Appendices

Appendix 1. Questions for the survey 1: Survey for employees

Background questions:

1. What industry do you work in?
2. What is your area of expertise?
3. How long have you worked in a virtual environment? (Indicate the amount of time using years)
4. How large is the organisation you work in regarding personnel?

Change Management questions:

5. Do you feel that the organisation where you work is flexible and observes its operations actively from the point of view of its operations in the face of changes?
6. Does the organisation where you work have the capabilities to plan and facilitate a successful change?
7. Are change situations in your organisation perceived as negative or positive?
8. When a change becomes relevant in your organisation, do you feel that the change process has been planned from start to finish, also considering the presentation and implementation of the change?
9. Do you feel that the organisation's current operating model and future goals archived by the planned change have been considered and examined with the necessary precision in the change's planning phase?
10. Do you think the parties implementing the change planning have accurately presented the goals and effects of the change on the organisation's operations?
11. Was the change implemented transparently, and were the goals of the change clearly presented by the parties who planned the change?
12. Have the parties responsible for planning and leading the change involved other parts of the organisation in the planning phase? Specifically, have they ensured the involvement of other teams or departments?
13. Do you feel it essential to involve people from different parts of the organisation when planning a change?
14. How would you like people working in different areas of the organisation to participate in planning the change in the organisation?

The management of the change questions:

15. Do you feel that changes in your organisation are planned as sustainable parts of the organisation's future instead of short-term or temporary changes?
16. Do you feel that your organisation achieved high-quality end-to-end management in connection with the change process?

17. The attached picture by Zigurs (2003) describes the emotional states that emerge with the change. Reacting to change is an individual experience, and there are many influencing factors. Please choose one emotional state that describes your mood during the latest change.
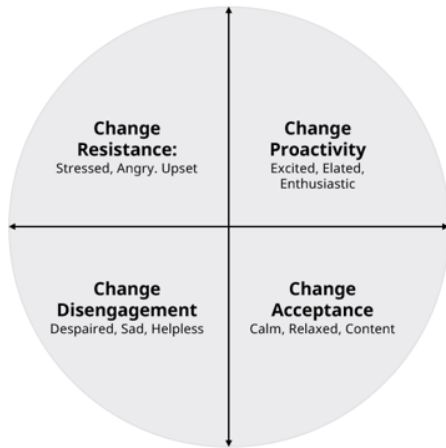
18. Do you feel that implementing change is more challenging when operating in a virtual environment?
19. How do you experience management, especially during change in a virtual environment?
20. Do you find your organisation's change management successful?
21. Do you find your organisation's most recent change management sustainable or long-lasting?
22. In which management area did you see room for improvement in connection with the latest change in your organisation?

Appendix 2. Questions for the survey 2: Managers' view on Leading Virtual Teams through the change.

Background questions:

1. What industry do you work in?
2. What is your area of expertise?
3. How long have you worked in a virtual environment? (Indicate the amount of time using years)
4. How large is the organisation you work in regarding personnel?
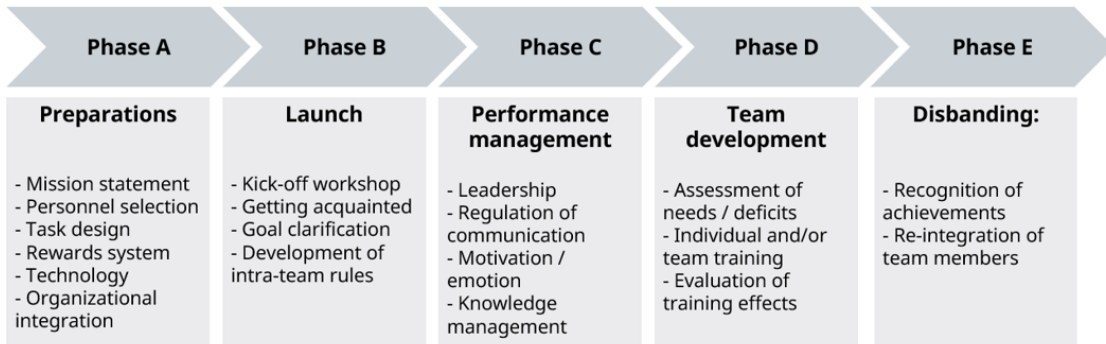
Change Management questions:

5. Do you feel that the organisation where you work is flexible and observes its operations actively from the point of view of its operations in the face of changes?
6. Do you feel that the organisation where you work has the needed capabilities to plan and facilitate a successful change within the organisation?
7. Are change situations in your organisation perceived as negative or positive?
8. When a change becomes relevant in your organisation, do you feel that the change process has been planned from start to finish, considering the presentation and implementation of the change?
9. Do you feel that the organisation's current operating model and future goals archived by the planned change have been considered and examined with the necessary precision in the change's planning phase?
10. Do you think the parties implementing the change planning have accurately presented the goals and effects of the change on the organisation's operations?
11. Was the change implemented transparently, and were the goals clearly presented by the parties who planned it?
12. Have the parties responsible for planning and leading the change involved other parts of the organisation in the planning phase? Specifically, have they ensured the involvement of other teams or departments?
13. Do you feel that it would be essential to involve people from different parts of the organisation when the planning phase of the change is starting?
14. The attached picture by Zigurs (2003) describes the emotional states that emerge with the change. Reacting to change is an individual experience, and there are many influencing factors. Please choose one emotional state that describes your mood during the latest change.
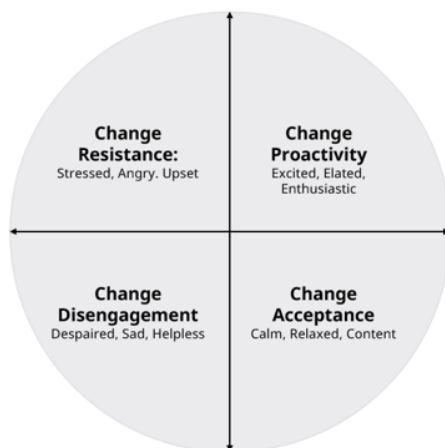
15. How do you think the organisation's members could be utilised in the planning phase of the change?

Questions about the Management of a change in the organisation:

16. Do you feel that following Hertel´s five-step model is introduced and implemented in your organisation during change situations?
17. The following table presents Hertel´s ideology of the critical activities in the lifecycle of virtual management. The ideology is divided into five steps, which, by being followed closely, can be helpful during the change. The steps include the change process from the planning table to implementation and the feedback collected from the employees.

Phase A	Phase B	Phase C	Phase D	Phase E
Preparations	**Launch**	**Performance management**	**Team development**	**Disbanding:**
- Mission statement - Personnel selection - Task design - Rewards system - Technology - Organizational integration	- Kick-off workshop - Getting acquainted - Goal clarification - Development of intra-team rules	- Leadership - Regulation of communication - Motivation / emotion - Knowledge management	- Assessment of needs / deficits - Individual and/or team training - Evaluation of training effects	- Recognition of achievements - Re-integration of team members

18. If you answered either neutral, I partially disagree, or I disagree with the question above, do you feel that Hertel´s model would be beneficial to take into use in your organisation?
19. Please note that question 15 is not required. If you answered the question above with the answer I partially agree with or agree with, you do not need to answer this question.
20. Have you faced challenges in leading a virtual team through change? What are the most common challenges you face?
21. Do you feel that you get support and guidance for managing your team from the upper levels of the organisation?