Digital Transformation: Governance as a Transition Tool

A case study at a Swedish municipality

MATHILDA AIDANPÄÄ

MATHILDA SJÖBERG

Digital Transformation: Governance as a Transition Tool

A case study at a Swedish municipality

by

Mathilda Aidanpää
Mathilda Sjöberg

Digital Transformation: Styrning som ett Transformativt Verktyg

En fallstudie på en svensk kommun

Mathilda Aidanpää
Mathilda Sjöberg

Abstract

As society becomes increasingly digitalised, pressure is put on public organisations to keep up with technological developments. Thus, digital transformations, which is a strategic relocation of the business, have become essential for organisations. Digital transformations are associated with complexity and a high failure rate, partly due to organisational barriers and the necessity of structural changes and possessing several dynamic capabilities. Private organisations have led the way in the era of integrating technology with business, and public organisations have attempted to follow. As a result, governing inspired by private organisations have been developed for public organisations, namely new public management. However, this governing does not cover values essential for public organisations, e.g., public value, nor facilitating digital transformations. Governance that enables adaptation and responsiveness as well as creating public value is necessary, e.g., adaptive and agile governance. This thesis aims to investigate digital transformation in public organisations and the effect governing principles have on it. The study also explores the potential of adaptive governance and if digitalisation can enable municipalities to work with sustainability. To answer this, an exploratory study is conducted, which includes a case study, and a framework is constructed based on a literature review together with four in-depth interviews with scientists. The framework is then applied to the case study, consisting of 11 semi-structured interviews. The findings indicate that digital transformations of public organisations can be conducted without considering governing principles. However, governance can affect how successful the transformation is and what value creation it can bring. Using governance that does not facilitate the transformation could impact its success. Adaptive governance can solve many issues in municipal digital transformations, but may not solely be the solution. It emphasises learning and trial-and-error and observes the transformation through an ecosystem perspective. However, the practical implications of it are limited as no methods exist. Thus, combinations with other governing principles may be required. Additionally, digitalisation cannot enable municipalities to achieve sustainability aims on its own. Instead, digital technologies are tools that the municipality can use achieve sustainability. The study contributes to research by investigating the effect governing principles has on digital transformations of public organisations in a Swedish context, which previously was lacking. The framework can provide a guide and analysis tool for public organisation's digital transformation, and shows potential to be applied in practice.

Keywords: *Digital Transformations, Public Organisations, Governing Principles, Adaptive Governance, Sustainability*

Sammanfattning

När samhället blir alltmer digitaliserat pressas offentliga organisationer att hålla jämna steg med den tekniska utvecklingen. Således har digitala transformationer, som är en strategisk förflyttning av verksamheten, blivit väsentligt för organisationer. Digitala transformationer är förknippade med komplexitet och hög andel misslyckanden, delvis på grund av nödvändiga strukturella förändringar och innehav av flertalet dynamiska kapaciteter, såväl som organisatoriska hinder. Privata organisationer har lett vägen i att integrera teknik med verksamheten och offentliga organisationer har försökt följa med. Detta har resulterat i att styrningen av offentliga organisationer inspirerats av näringslivet, nämligen new public management. Denna styrning täcker dock inte värden som är viktiga för offentliga organisationer, t.ex. offentligt värde, eller underlättar digitala transformationer. Styrning som möjliggör anpassning och lyhördhet samt skapar offentligt värde är nödvändigt, exempelvis adaptiv och agil styrning. Denna uppsats syftar till att undersöka digitala transformationer i offentlig sektor och vilken effekt styrande principer har på det. Studien undersöker också potentialen för adaptiv styrning och om digitalisering kan göra det möjligt för kommuner att arbeta med hållbarhet. För att svara på detta genomförs en undersökande studie, som inkluderar en fallstudie, och ett ramverk skapas baserat på en litteraturgenomgång tillsammans med fyra djupintervjuer med forskare. Ramverket tillämpas sedan på fallstudien, bestående av elva semistrukturerade intervjuer. Resultaten tyder på att digitala transformationer av offentliga organisationer kan genomföras utan att ta hänsyn till styrande principer, men styrningen kan påverka hur optimal transformationen är och vilket värdeskapande den kan ge. Att använda styrning som inte underlättar transformationen kan påverka hur framgångsrik den är. Adaptiv styrning har förmågan att lösa många problem som finns i kommunala digitala transformationer, men är inte enskilt lösningen. Den betonar lärande och experimenterande samt observerar transformationen ur ett ekosystemsperspektiv. De praktiska implikationerna av den är dock begränsade, då den inte innehar specifika metoder. Således kan kombinationer med andra styrande principer krävas. Därtill medför inte digitalisering att kommuner uppnår hållbarhetsmål på egen hand. Istället bör digital teknik ses som verktyg som kommuner kan använda för att uppnå hållbarhet. Studien bidrar till forskning genom att undersöka vilken effekt styrande principer har på digital transformation inom offentliga organisationer ur ett svenskt perspektiv, vilket saknas i tidigare forskning. Ramverket kan tillhandahålla ett guide- och analysverktyg för offentliga organisationers digitala transformation och visar potential att kunna användas i praktiken.

Nyckelord: *Digitala Transformationer, Offentliga Organisationer, Styrande Principer, Adaptiv Styrning, Hållbarhet*

Acknowledgements

Table of Content

List of Figures

List of Tables

Abbreviations

CDO	*Chief Development Officer*
CIO	*Chief Information Officer*
DBS	*Digital Business Strategy*
DTS	*Digital Transformation Strategy*
EOR	*Extraordinary Results*
ICT	*Information and Communication Technologies*
IS	*Information System*
NPM	*New Public Management*
SEK/Krona	*Swedish currency*
SMACIT	*Social, Mobile, Analytics, Cloud, and Internet of Things technologies*

Glossary

Adaptive Governance	*A concept dealing with the development of public organisations and institutions for managing shared assets and turning organisation into flexible, collaborative, agile and learning-based organisations*
Agility	*Methods helping organisations to be responsive and prepared for changes in the surroundings as well as focus on customisation over standardisation*
Digital Initiatives	*Operations combined with digital services and tools, as well as the introduction of new digital services and tools*
Digital Transformation	*The process of leveraging digital technologies through transforming the organisational process, models, and activities*
Digitalisation	*Incorporation of digital technology into business processes and leverage these to improve business processes and realise more value*
Digitisation	*The process of converting the format of information from analogue to digital*
Governing Principles	*Agreements governing an operation or purpose of a non-profit organisation or association and the obligations and rights of the organisation's managers and members*
New Public Management	*A collective concept of changes in steering of public organisation which proposes that public organisations are to use methods from the private sector to increase efficiency*
Public Value	*The value an organisation brings to society, can be described as public management shareholder value*
Transformation	*Changing the internal culture in organisation to handle challenges, changes and/or gain more competitive advantages*
Waterfall Approach	*A sequential system development process where progress is shown as a downward flow schedule*

1.   Introduction

The following chapter presents the research context of the thesis. The chapter begins with a background to the problem that is investigated, providing relevant knowledge to understand the issue. The chapter continues with a problematisation framing the problem, followed by the thesis's purpose and research questions. The expected research contributions, as well as delimitations, continues the chapter. The sustainability considerations and thesis outline conclude the introduction chapter.

1.1   Background

During the last couple of decades, digitisation[1], digitalisation[1], and digital transformation[1] have composed a crucial factor for various types of organisations in most industries. The emerging digital technologies enable simplified business processes, new possibilities, flexibility, and new value creation paths. Organisations unable to incorporate such technologies, changes and developments, will meet significant challenges in the era of an increasingly digitalised world (Chang et al., 2020; Jakob & Krcmar, 2018; Bloomberg, 2018). Digital technologies have the potential to bring several organisational advantages, implying that organisations need to become more digital as well as changing their organisations to fit the new ways of doing business. While digitisation, digitalisation and digital transformations are essential development and change steps, they are often associated with substantial costs and investments. Besides the financial aspect, they also require other forms of resources (Davenport & Westerman, 2018) related to human competencies, i.e., the organisation's individuals' abilities. This includes leadership, organisational understanding, communication and various dynamic capabilities (Vial, 2019; Weritz et al., 2020). Such competencies, especially the ones associated with financial resources, are often found in private organisations where monetising business opportunities are a "make it or break it" factor. In private companies, exploiting new value creations and resource efficiency are more common (Davenport & Westerman, 2018). However, digital development and change are not limited to private companies. Public organisations are also affected by societal and industrial development as well as public demands (Chang et al., 2020). At the same time, public organisations have considerably more external responsibilities compared to private organisations. Combined with aiming to stay relevant in the increasingly digital business arena with emerging digital technologies, public organisations need to handle challenges related to citizens, including demographic changes and the evolution of living patterns. Public organisations in general, and municipalities in particular, need to manage an ageing population, an increase in demand of the municipal service level and an expanding population living in cities due to urbanisation (Frennert, 2019). Digital transformation could provide solutions to such challenges municipalities experience as well as provide more value in general to citizens. This could potentially be the municipal way of monetising business opportunities. Digital transformations have the potential to enable municipalities to provide better healthcare services, more efficient waste management and enhanced sustainability work, for example (Ringenson, 2021; Chang et al., 2020; Davenport & Westerman, 2018).

Despite the challenges associated with digital development and change together with the responsibilities municipalities hold, some municipalities have performed successful digital transformations and embraced the advantages digital technologies could bring. Nevertheless, a majority of all municipalities struggle with conducting digital transformations (Ringenson et al., 2018). To realise a digital transformation, the organisation needs to fundamentally change their identity. They need to transform[1]

---

[1] See the glossary for definition

the whole organisation, entire operations, and internal structures and practices (Wessel et al., 2021). In essence, it is a strategic relocation of the organisational business (Bloomberg, 2018) and concerns more than just technologies. Ruud (2017) propose that 80% of the digital transformation is associated with the people (Ruud, 2017). This can constitute an obstacle since some municipalities are traditional and rigid which can obstruct the change and development process. Literature highlights the possibility that this is due to outdated or malfunctioning governing principles[1] (Wällstedt & Almqvist, 2017). Besides the hindering governing principles, municipalities are often unable to handle the complexity and uncertainty transformation projects entail (Jakob & Krcmar, 2018). To cope with this, municipalities often apply the waterfall approach[1] when incorporating larger digital initiatives[1]. This approach often requires complete shutdowns and potential cost increases as well as being time-consuming (Ruud, 2017). This may also constitute an obstacle, as municipalities generally are unwilling to take risks with taxpayers' money (Cedergren et al., 2019; Raineri & Shanske, 2017). Additionally, the issue of having functioning sustainability work is an aspect that becomes increasingly pressing for municipalities, which, combined with internal obstacles and external pressure to become more efficient, has intensified the interest in municipal digital transformations. Thus, research suggests that methods promoting agility[1] and adaptivity should be used when initiating digital transformations, to cope with the complexity, uncertainty, reduce the risk of increased expenses and extended project times, and ultimately make the organisation adapt as the process goes along (Ruud, 2017).

1.2   Problematisation

Private companies have led the way in the era of technology integrated business. They appear to have the answer on how to manage businesses and transform organisations to be better suited to the new paradigm. Due to this, many public organisations have taken inspiration, or the development process straight away, from private companies. This initiated a way of steering public organisations, namely new public management[1] (Pollitt et al., 2007). The new public management incorporates the customer perspective in a new way public organisations had not done before, turning the organisation into more customer-related organisations (Self, 2000). However, leading private companies such as Nike, Procter & Gamble and Lego have failed in the ambition to digitally transform their businesses, implying that private companies may not have the solution to this challenge (Davenport & Westerman, 2018). In fact, in 2018 the Swedish government declared that municipalities should stop using the new public management governing principles and instead use governing that is based upon employee trust (Finansdepartementet, 2018). At the same time, researchers have found that the new public management governing principle does not create sufficient public value[1], hence not transforming the organisation sufficiently (Broucker et al., 2018).

Although the new public management approach aimed to solve issues and stressful situations, it did not work as intended. Instead, researchers constructed a new approach to help municipalities handle disruptive changes and environmental development, namely, adaptive governance[1]. The adaptive governance approach aims to decentralise public organisation to "break" the traditional public organisational structure of top-down steering. The approach merges and utilises the commonly fragmented capabilities within the municipalities to detect initial changes and acts on them right away (Janssen & van der Voort, 2016; Soe & Drechsler, 2018). Adaptive governance can enable municipalities to become more flexible and responsive, and is often associated with agile approaches (Mergel et al., 2018). However, many municipalities' governing principles are deep-rooted (Finansdepartementet, 2018; Soe & Drechsler, 2018) and unwilling to change the internal operations,

---

[1] See the glossary for definition

i.e. factors necessary to digitally transform (Ruud, 2017; Jakob & Krcmar, 2018). Whether adaptive governance can help municipalities surpass obsolete governing principles or not to digitally transform and thus align their development with the one occurring in the industry and society lacks research, especially in a Swedish context, and if this ultimately leads to an enhanced sustainability work is still uncertain.

1.3   Purpose

Given the problematisation, the thesis aims to investigate the effects governing principles has on municipalities' ability to digitally transform their operations in line with society's digital development. More specifically, the thesis will investigate whether adaptive governance can have a positive impact on such abilities or not. To support the investigation, the study will also investigate if digitalisation can enhance municipalities' sustainability work.

1.4   Research Questions

Based on the problematisation and purpose, the research questions for the thesis is the following.

> *RQ1: How does governing principles in public organisations affect their abilities to transform their operations as society becomes increasingly digitalised?*
> *RQ2: Does adaptive governance enable municipalities in their digital transformation, and if so, how?*
> *RQ3: Does digitalisation enable municipalities to work with sustainability, and if so, how?*

1.5   Expected Knowledge Contribution

The thesis is expected to contribute to the area of digital transformation and governing principles. Research on the digital transformation of public organisations in a Swedish context is scarce. What effects governing principles can have on such processes is another topic limited in previous research. Thus, the thesis is expected to fill the knowledge gap within these areas. The thesis also includes sustainability aspects concerning the use of digital technologies. This is an area that has rigorous existing research. However, in the context of this thesis, the previous research is lacking. Furthermore, as the digital transformation of municipalities is a highly important subject, the thesis is expected to not only fill a knowledge gap but also contribute with relevant, important knowledge that is demanded from the public sector.

Given the nature of the study, the research conducted can be of use to public organisations, and more specifically municipalities. As this study examines issues, solutions and outcomes of a pressing challenge, practical implications can be of substantial use for public organisations facing similar issues. As the study examines relevant, updated subjects, there is potential for continuing this study and building on the research in the future.

1.6   Delimitations

Delimitations are made to limit the scope of the thesis and ensure the quality of the research, given the time frame. Firstly, the study is delimited to observe and investigate the digital transformation and governing principles as well as their correlation, no other factors will be considered. The study is delimited to Sweden as a geographical area as well as a single subject case study at a single Swedish municipality. Moreover, the study is delimited to exclude political aspects. The political organisation of

municipalities in general will not be included in the study. Furthermore, the citizens' opinions on the digital transformation of public organisations will not be included. The study will also be delimited to only observe and investigate the preliminary stages of a digital transformation, the execution and actual relocation is not included. Lastly, the study is delimited to provide a holistic understanding of the digital transformation of municipalities and how it contributes to sustainability. Analysis of detailed and specific aspects is thus not included.

1.7   Sustainability Considerations

The UN sustainable development goals are a guideline (see *Figure 1*) to evaluate the sustainability contributions of this study. The main contributions concern three out of the 17 UN goals. These are goals number 8, 11 and 16. The thesis also touches upon goals number 3, 4, 6, 7 and 15.

Figure 1. The UN set sustainable development goals(UN, 2015)

The thesis includes goal number 8 since it investigates how digital transformations affect employees and their workplace as well as its effect on value creation and efficiency to ensure economic growth. Goal number 11 is included since the thesis investigates how digital transformations and digital technologies can help municipalities become more sustainable, which includes both environmental and social sustainability. Goal number 16 is included because investigations are made regarding how digital transformations can help municipalities become better organisations that provide more value for their citizens, i.e., increase their presence in society. The thesis also somewhat includes goals number 3, 4, 6, 7 and 15 since it investigates how sustainability within municipalities can be achieved through digital transformations. This includes improved social services (e.g., elder care and school systems), how digital technologies can facilitate that municipal citizens receive clean water and efficient energy usage, and finally how a digital municipality can enable sustainable and efficient mobility.

1.8   Thesis Outline

In *Table 1* the layout of the thesis is presented with a brief overview of each chapter.

Table 1. The thesis disposition

Chapter 1 Introduction	*The following chapter presents the research context of the thesis. The chapter begins with a background to the problem that is investigated, providing relevant knowledge to understand the issue. The chapter continues with a problematisation framing the problem, followed by the thesis's purpose and research questions. The expected research contributions, as well as delimitations, continues the chapter. The sustainability considerations and thesis outline conclude the introduction chapter.*
Chapter 2 Literature Review	*This chapter presents the literature and theories related to the research topic. The main concepts included in this chapter is digital transformation and governing principles.*
Chapter 3 Methodology	*The following chapter presents the methodology. The chapter begins with describing the research purpose and continues with the research approach, which includes a section regarding the conducted case study. This is followed by a comprehensive presentation of the literature review and the data collection. The chapter continues with an overview of the data analysis process and ends by discussing aspects related to research ethics as well as research quality.*
Chapter 4 Academic Insights	*The following chapter presents the findings from the in-depth interviews with scientists.*
Chapter 5 Framework	*The chapter presents a framework for how to conduct the primary phases of digital transformation in a municipality. The framework is based on the literature review presented in Chapter 2 as well as the academic insights presented in Chapter 4.*
Chapter 6 Case Study	*The following chapter present information about the case study organisation, obtained from provided material and the organisational website. The chapter also includes findings from the interviews conducted at the case study organisation. To conclude the chapter, a summary of the interviews is presented.*
Chapter 7 Discussion	*In this chapter, a discussion based on the literature review and empirical findings is presented. The discussion follows the framework presented in Chapter 5 and thoroughly discuss the different aspects of the digital transformation Värmdö kommun are conducting. The chapter continues with the framework applied on Värmdö kommun as a summary of previous discussions and a discussion about the framework's potential is presented. The interviewees referred to in the subsequent texts is the semi-structured interview respondents.*
Chapter 8 Conclusion	*In this chapter, the conclusions are presented. Reflections on findings and execution of thesis are presented. The chapter concludes with practical and theoretical implications, limitations and recommendations for future research.*

2.   Digital Transformation of Public Organisations

There is a need for public organisations to transform in the years ahead. As the complexity of public issues increases, and the development of Information Technologies (IT) as well as services, e.g., big data, intensifies, higher demands are put on governments. Therefore, governments need to develop a capacity to manage new technologies and processes, and to have the ability to evaluate, respond to and implement them (Wang et al., 2018). Ruud (2017) further adds that for the public sector to meet the changing urban, demographic and financial challenges, they have to become more efficient. The goal of digital transformation is to deliver better outcomes with fewer resources by improving the way services are provided (Ruud, 2017).

The digital transformation of public organisations has many different labels in the literature. The concept of e-government is defined as the use of ICT by government agencies (Almarabeh & Abuali, 2010), especially the internet (OECD, 2003). However, it might not lead to significant changes in organisational structures. Digital government is seen as the paradigm shift from e-government. It has technology integrated into strategies to create public value and realises that governments are a part of an ecosystem with other actors who help produce and access data. While e-government is about putting services online and increasing operational efficiency, the digital government sees ICT as a critical component of public sector transformation, which can help governments become more open, effective, and efficient. Digital government integrates ICT with public sector reforms to create public value (OECD, 2016). Another concept for digital public organisations or digital governments is smart cities, which is usually combined with sustainability. Here, ICT tools are used to achieve sustainability and solve environmental problems while at the same time supporting a good life for citizens. The word "smart" can be seen as an intended outcome (Hollands, 2008) or as a feature instead of a performance indicator. The opposite of "smart" in this context is seen as "without the use of advanced ICT" (Höjer & Wangel, 2015). Smart cities look at all aspects of cities, where government, or public organisations, is a part of its so-called smart government (Anthopoulos & Reddick, 2016). Nevertheless, the concepts have, in literature, recently started to converge and are increasingly being used as synonyms for each other (Mechant & Walravens, 2018; Soe & Drechsler, 2018).

There are numerous challenges for public organisations related to digital transformation. Previously, governments gradually transferred their internal capabilities to outside of the organisation through increasingly outsourcing projects (Cordella & Willcocks, 2010). This has left public organisations with limited capacity as well as having reduced skillset internally (Wang et al., 2018). Related to the digital transformation of public organisations, there exist several issues. Organisations in the public sector have deep cultural roots, which is one of the hardest parts to change. Therefore, succeeding with digital transformations projects is complex (Ruud, 2017). Further, there can be technical challenges such as a shortage of relevant talent, relevant software is underdeveloped, data storage, integrating multiple sources of data, and access (Chen & Hsieh, 2014). Public organisations are also affected by societal problems caused by technological developments, which they have to address (Janssen & van der Voort, 2016).

It is important to understand that public and private organisations differentiate in several aspects. Public organisations tend to have a more hierarchical decision-making structure which commonly is slow-paced compared to the private sector. The main goal of public organisations is to increase public value. In contrast, private organisations aim to increase the value for shareholders. Additionally, the values which permeate public organisations centre around legitimacy, accountability and justice, whereas

values in a private organisation generally focus on profitability, revenue generation, competitiveness, and customer relationship. Public organisations also have to ensure that they make the best use of taxpayers' money and avoid poor outcomes (Mein Goh & Arenas, 2020).

2.1   Digital Transformation of Organisations

Digital is a familiar concept nowadays as the world considerably relies on technologies such as computers and the Internet. In its purest form, the word digital means electrical technology, which generates, saves and processes information through combinations of binary numbers, i.e., 1 and 0 (Negroponte et al., 1997; Copeland, 2013). The concept of transformation was first minted by Karl Poyani in the 16th and 17th century (Pfliegl & Seibt, 2017), and can be defined as

> "*the radical shift from one state of being to another, so significant it requires a shift of culture, behavior and mindset [...] in other words, transformation demands a shift in human awareness that completely alters the way the organization and its people see the world*" (Anderson & Anderson, 2002, p.39).

Digital transformation is the process of leveraging digital technologies through transforming the organisational process, models, and activities, i.e., it is a strategic relocation of an organisation's business. Digital transformation is often confused with digitisation and digitalisation, which are similar but still fundamentally different. Digitisation is the process of converting the format of information from analogue to digital. Digitalisation is the leveraging of digitisation to enhance business processes. Digital transformation is hence customer-oriented, while digitisation and digitalisation are solely technology-oriented (Bloomberg, 2018).

The concept of digital transformation was not introduced as early as the concept of transformation, but as soon as the computer power enabled multidimensional data processing, the term gained magnitude (Pfliegl & Seibt, 2017). The concept of digital transformations has, consequently, been around for several years. However, a clear standard definition seems to be hard to formulate. When referring to digital transformations, the main idea is organisational transformations driven by the enabling and accessibility of new IT ideas, trends and solutions. This can ultimately lead to increased value creation, productivity and enhanced social welfare (Duarte & Ebert, 2018). The term originated from organisational transformation and when computers and computer systems became powerful competitive advantages and organisations realised that digital tools should be incorporated into the business strategies to create more value (Williams & Schallmo, 2018). Although a clear, standard definition of digital transformation is not formulated, Vial (2019) presents a study investigating multiple different definitions and ultimately constructing a conceptual definition:

> "*A process that aims to improve an entity by triggering significant changes to its properties through combinations of information, computing, communication, and connectivity technologies*" (Vial, 2019, p.121).

This definition implies that an improvement can be achieved through digital transformation if the organisation successfully transforms its strategies and business (ibid).

To digitally transform an organisation, there are several tools and prerequisites necessary. Digital transformation can be explained as a process (Lammers et al., 2018), which can be visualised through the figure below (see *Figure 2*). The boxes equal digital transformation processes, where technologies

are a central creation aspect and where disruptions are reinforced both at the industry and society level (Vial, 2019).
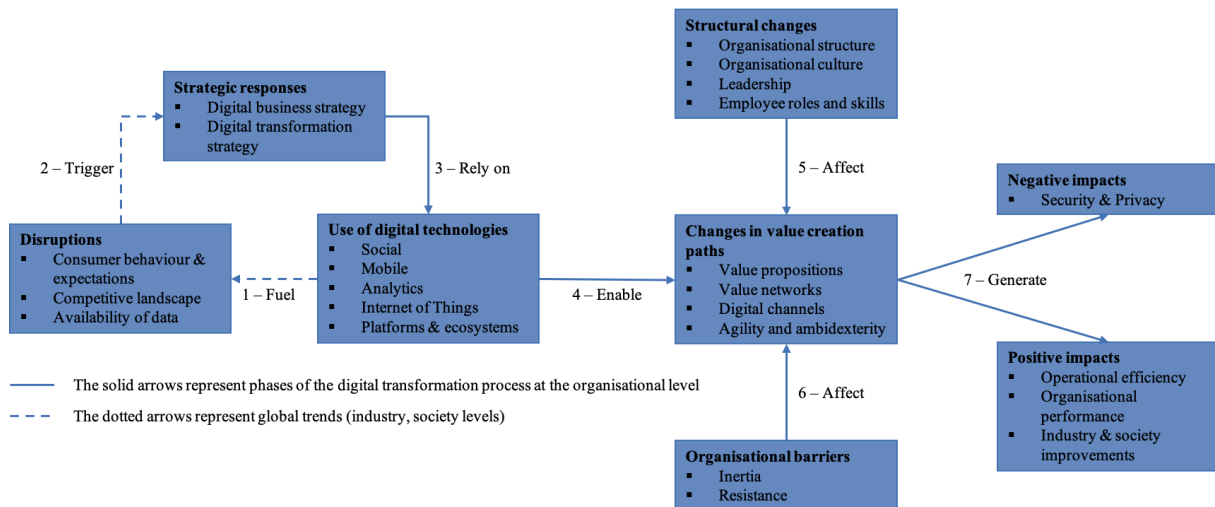
Figure 2. The digital transformation process with overarching arrows describing their mutual relationship (ibid, p.122)

As can be seen in the digital transformation process, several enablers and barriers can empower or hinder the development. Since a digital transformation is a fundamental change of the organisation and its activities, the enablers need to be appropriately incorporated, and barriers dealt with to realise the transformation and enable the strategic relocation of the organisation's business (Jakob & Krcmar, 2018; Wessel et al., 2021; Bloomberg, 2018).

2.1.1 Digital Technologies

According to Vial (2019), digital technologies are the fuel for initiating a digital transformation (see *Figure 2*). Digital technologies often emerge from the industry or society, pushes the digital transformation of organisations, as these need to respond to the digital environmental development. This forces organisations to strategically respond to the changes (Vial, 2019). Digital technologies can be defined as all technologies combining communication, information, connectivity and computing, which are changing and interconnecting processes and services both internally and externally in the organisation (Bharadwaj et al., 2013). A term commonly used in literature is *SMACIT*, standing for social, mobile, analytics, cloud, and Internet of Things technologies. SMACIT is considered a "game-changer" for successful digital transformations, as these facilitate combinations of technologies (Sebastian et al., 2017). Another helpful technology when doing a digital transformation is platforms, which facilitate knowledge sharing tools and the possibility to gather information about customers (Vial, 2019). SMACIT also includes other powerful digital technologies essential for digital transformation, such as artificial intelligence (AI), robotics, blockchain, and virtual reality (Sebastian et al., 2017).

Literature also highlights that ICT plays an important role in digital technologies to enable digital transformations (Hanna, 2016). ICT is a term stemming from IT, that advocates the role of unified communication, telecommunication and computer integration, as well as the imperative use of middleware, software, audio-visual and storage to enable storage, accessibility, transmission and manipulation of information for users (Petkovics, 2018; Cuno et al., 2019). Hanna (2016) proposes that a digital transformation is an alteration in the techno-economic paradigm, where ICT tools are powerful enablers to endorse transformation. The fundamental structural changes needed to relocate the

organisational business can benefit from harnessing ICT, as the ICTs' transformative characteristics have the potential to alter multiple business activities, such as innovation, financial services, transportation, learning, etc. (Hanna, 2016). Petkovics (2018) proposes that some technologies included in SMACIT are in fact ICT, implying that the benefits SMACIT provides to organisations are allocatable to ICT as well. The main advantages ICT can bring to an organisation concerns efficiency, accuracy, processing and data analysis (Petkovics, 2018). Although, Hanna (2016) suggests that the benefits of ICT extends beyond the organisation, and can have positive effects on societies (Hanna, 2016).

2.1.2 Disruptions

Digital technologies can be considered disruptions which, according to Vial (2019), are the triggering point for digital transformation. Digital disruptions can be categorised into three categories: consumer behaviour and expectations, competitive landscape, and availability of data (Vial, 2019). Digital technologies disrupt the traditional organisational context, fundamentally altering organisations so they can adapt to the new fast pace of innovation and change (Yoo et al., 2010). Due to this, digital technologies impact customer behaviour and expectation vastly, as customers can interact with organisations and have a substantial mandate to influence organisational decisions. Furthermore, the ability to generate and access more data is facilitated through digital technologies. This has disrupted organisational activities, as organisations now have access to vast amounts of data that should be analysed and used to their benefit (Vial, 2019). All these disruptions caused by digital technologies triggers organisations to adapt to the new digital environment, i.e., to digitally transform. This cause-effect relationship can either be considered an endogenous opportunity or an exogenous threat (Sebastian et al., 2017). Digital transformations can be seen as an endogenous opportunity, as digital technologies disrupt organisational contexts and markets, creating opportunities for organisations to respond (Vial, 2019), or an exogenous threat since the disruptions caused by digital technologies forces organisations to digitally transform and respond to demands (Sia et al., 2016).

2.1.3 Strategic Responses

The responses required from organisations stemming from the digital disruptions are often generically called strategies. Associated with digital transformations, there are two main strategies proposed; digital business strategy (DBS) and digital transformation strategy (DTS) (Vial, 2019). The DBS can be defined as an "*organisational strategy formulated and executed by leveraging digital resources to create differential value*" (Bharadwaj et al., 2013, p.472) and has gained vast traction in practice as the fusion between organisational and IS strategies creates synergies (Vial, 2019). The DTS can be defined as a "*focus on the transformation of products, processes and organisational aspects owing to new technologies*" (Matt et al., 2015, p.399) and are considered a blueprint for how to govern a transformation arising from digital technologies as well as the post-transformation operations. These strategies hence focus on different aspects of digital transformation (Vial, 2019). Depending on the state of an organisation's digital transformation, either or both of these strategies can be useful (Bharadwaj et al., 2013; Matt et al., 2015). Thus, the strategic responses (i.e., strategies) rely on the digital technologies incorporated and used within an organisation (Vial, 2019).

2.1.4 Value Creation Paths

In line with the endogenous opportunistic view of digital disruptions, the context in which digital technologies are utilised is the opportunity to create new value creation paths. Digital technologies alone often bring little value themselves. Instead, it is the distinct context of their usage that can bring

substantial value. Digital technologies constitute transformative elements, which can be observed through the potential new value creation paths. Vial (2019) identifies four prominent value creation paths that are changed and enabled through digital transformation, namely, value propositions, value networks, digital channels, agility and ambidexterity. These are essential factors for organisations, especially those that are driven by monetising their business. Despite the organisations' goals, many organisations' ultimate aim of their digital transformation is enhancing value creation (Morakanyane et al., 2017).

Through a digital transformation, an organisation's value proposition may be altered via digital technologies. The technology opens new paths which often relies on services. The transition of selling physical products to services or innovative digital solutions changes the organisation's value propositions, for example. Through technology, organisations may enhance their service offering, as they can combine products with services, make the services more customer-oriented and generally extend their offering (Porter & Heppelmann, 2014). Digital transformation also enables organisations to create new or redefined value networks using digital technologies. This allows the implementations of mediation strategies. Andal-Ancion et al. (2003) propose three main mediation strategies enabled by digital technologies, specifically new ITs. These are the classic disintermediation, remediation and network-based mediation (Andal-Ancion et al., 2003). By either of these mediation strategies, organisations can alter or extend their value network, and ultimately enhance their value proposition (Vial, 2019).

Digital technologies can create new digital channels to enhance sales and distribution channels. Vial (2019) proposes that this can be done in two ways: by creating customer-facing channels to bring new customer dialogue routes, or by enabling new effective organisational activity coordination software. The creations of customer-facing channels through social media minimise the gap between the physical and digital world by allowing organisations to have a steady flow of communication with customers, for example. This opens the possibility to create an omnichannel strategy (Hansen & Sia, 2015). Effective activity coordination is enabled through decision-making algorithms empowered by digital technologies. This could potentially streamline procurements processes via IoT, for example (Porter & Heppelmann, 2014).

Furthermore, the adaptation to societal and environmental development can be simplified by digital technologies (Vial, 2019). These technologies can significantly contribute to the organisation's agile abilities. Agility can be defined as

> "[...] *the ability to detect opportunities for innovation and seize those competitive market opportunities by assembling requisite assets, knowledge, and relationships with speed and surprise*" (Sambamurthy et al., 2003, p.245).

Agility combined with and enabled by digital technologies, such as IoT and analytics, may improve the overall performance of an organisation and minimise otiose resources (ibid). Sumbamurthy et al. (2003) argue that there is a correlation between enhanced IT competence and organisational financial performance. Digital transformation also enables the obtaining of ambidexterity, i.e., the ability to combine the exploration of innovations and exploitation of current resources (Magnusson et al., 2019). More specifically, as Haffke et al. (2017) defines it, IT ambidexterity. Digital transformation is an organisational change, where new digital technologies often are implemented and fuels the transformation. However, many digital technologies that are already implemented are often still exploited, even though new digital technologies are explored. Meaning, to successfully digitally

transform an organisation, IT ambidexterity is both required and obtained, creating new value creation paths as new possibilities open up and resources may be saved by utilising already existing systems (Haffke et al., 2017; Vial, 2019). Ultimately, the organisational ambidexterity enabled through digital technologies can be compared with the quest of digitalisation, i.e., to increase innovation or efficiency (Magnusson et al., 2019).

2.1.5 Structural Changes

A digital transformation requires the organisation to perform multiple structural changes, similar to other transformations which alter the fabric and context of an organisation. These changes are also essential for altering the potential new value creation paths. The structural changes necessary are related to the organisational structure and culture, leadership, and employee roles and skills (Vial, 2019).

In the previous section, the organisational capabilities agility and ambidexterity are considered necessary to create new value paths enabled by a digital transformation. However, Weritz et al. (2020) suggest that an organisation needs to obtain other capabilities to successfully digitally transform. One of them is working with cross-functional teams and collaborations to foster flexibility and innovative thinking (Weritz et al., 2020). In *Figure 3* below, internal attributes fostering and enabling digital transformation is visualised. The level of incorporation and acceptance of these attributes dependent on the maturity of the digital transformation shows their independent importance. The maturity of the digital transformation is correlated to the extent these cultural and structural attributes are inveterate in the organisation (Kane, 2019).
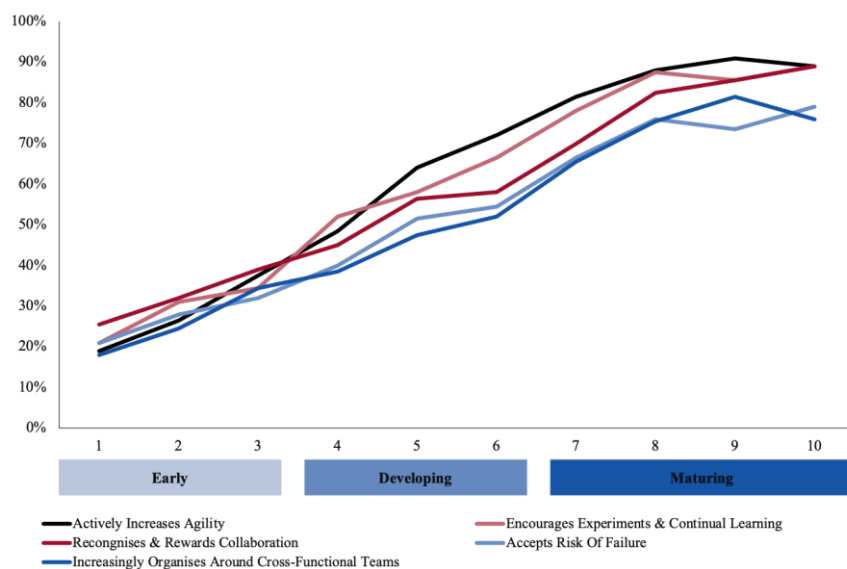
Figure 3. Cultural and structural attributes dependent on the level of digital maturity of the organisation (ibid, p.47)

The organisational capability to align different business departments and units by cooperation and implement comprehensive understanding of different and shared goals, knowledge sharing, and solution and product development, can be defined as cross-functional collaboration (Weritz et al., 2020). There are often chasms between departments and units in organisations that need to be minimised or removed entirely for the digital transformation to have full effect. Observations have been made showing that digitally mature organisations are more likely to be structured and organised around cross-functional teams, enabling collaboration between business units (which also can be observed in *Figure 3* above)

(Kane, 2019). For organisations novel to digital transformation, cross-functionality can be achieved by implementing independent teams separate from any business unit. These independent teams have the opportunity to be innovative while also utilising existing resources. Independent teams that have access to the organisational resources can engineer new ways to incorporate digital solutions and new business processes by being more risk-prone than the whole organisation, without jeopardising the organisational performance (Vial, 2019; Weritz et al., 2020). Besides working with cross-functional teams and collaborations and not being risk-averse, Kane (2019) also proposes that organisations should work with continuous learning and experiments to simplify and realise the digital transformation.

These structural changes necessary to enable a digital transformation is closely related to the organisational culture changes. According to Kane (2019), the success of digital transformations is primarily based on the cultural characteristics of the organisation. The structural attributes presented in *Figure 3* above also correspond to the culture of the organisation. The necessary changes need to be culturally welcomed and allowed within the organisation to gain magnitude (ibid). The chasm between business units is associated with the organisational culture. This could potentially harm the organisational ability to alter their value propositions, as this altering is dependent on values (among other variables), for example (Kane et al., 2016). As stated above, cross-functional teams and collaboration can solve such issues. These can also be good proxies for pilot projects, experiments and taking a more significant risk than the organisation in general (Kane, 2019) and are also cultures needed for digital transformation. Many studies show that organisations should take risks and experiment with digital technologies on a smaller scale before implementing this in the organisation, for example. For organisations to adapt and accept the potential implementation, the organisational culture needs to accept risk and failure, and encourage experiment and continuous learning. These cultural features can be compared with organisational agility, another essential aspect to digitally transform. Through these cultural and structural changes, an organisation can incrementally and iteratively develop (Vial, 2019; Kane et al., 2016).

Besides the structural and cultural changes, digital transformations requires a shift in leadership (Vial, 2019). Studies have shown that leadership is the second most crucial factor for a successful digital transformation. These studies also show that the more digitally mature an organisation becomes, the more employees rely on leaders digital expertise and knowledge on the way forward. This can be observed in *Figure 4* below. In mature digital organisations, employees consider their leaders capable of leading the organisation in digital environments. This figure also shows that employees in organisations positioned in the early stages of their digital journey commonly consider their leaders unfit to lead the organisation in digital environments (Kane, 2019).
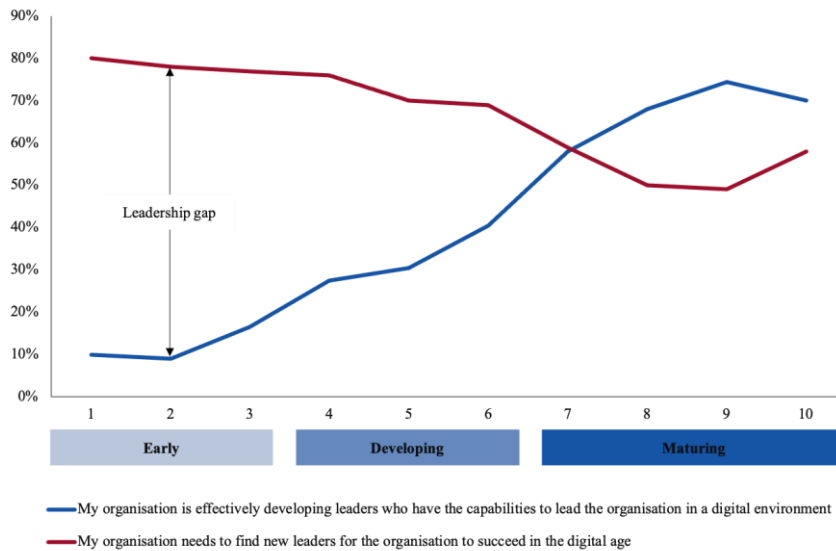
Figure 4. Employees need for digital leadership (ibid, p.46)

There is a need for a leadership shift and development during a digital transformation. Leaders in such organisations need to implement a common digital mindset and develop their capabilities to handle disruptions stemming from both technologies and the transformation itself. Some researchers propose that introducing new leadership roles could be beneficial and help leadership development (Vial, 2019). Such roles could be CDOs or CIOs. By implementing such leadership roles, the strategic nature of the transformation solidifies and sends out clear signals of the digital transformation's strategic aspect (Singh & Hess, 2017; Haffke et al., 2017). Sow and Aborbie (2018) propose that leaders in an organisation undergoing a digital transformation also need to support the digital disruptions occurring while also obtaining a progressive mindset. Leaders should be role models for employees in adapting to the new structure and culture (Sow & Aborbie, 2018). The role of leaders is thus crucial, and an introduction of new, creative leadership roles may help alter the organisational logic through concrete actions of the DBS necessary for the digital transformation (Vial, 2019).

In digital transformation employees and their respective roles are also altered. Due to the new nature of business processes, strategies, value creation paths, and so on, employees often must assume roles that were outside their role description before the digital transformation (Vial, 2019; Hess et al., 2016). Through this, the organisational human capital of the organisation could increase. However, digital technologies enable enhanced decision-making processes and automation, implying that the need for increased human capital is unnecessary. The existing employees will have to develop their analytical skills as the business problems organisations face in the future will become increasingly complex due to (Vial, 2019) globalisation, urbanisation, and the environmental crisis, for example (Ushakov & Chich-Jen, 2020). Assisting employees through digital transformation is a challenge extending beyond the capacity of human resources (Vial, 2019). Thus, the role of leaders during a digital transformation is magnified. Without employees, a digital transformation is not possible, i.e., the organisation needs to appropriately let employees develop, adapt to new tasks and roles, have competent leaders and acclimate to the organisational structure and culture changes (Tabrizi et al., 2019; Haffke et al., 2017).

2.1.6 Organisational Barriers

The aspects mentioned above are requisites, changes and enablers related to digital transformation. However, several barriers may obstruct a digital transformation. The most salient barriers are inertia,

resistance (Vial, 2019), and the employee's fear of replacement (Tabrizi et al., 2019). These barriers are most prominent considering changing the value creation processes, which are one main goal with the digital transformation (Vial, 2019).

Organisational inertia is the tendency to continue on the organisation's current trajectory and is common among mature organisations. Researchers often talk about two elements when discussing inertia, namely routine and resource rigidity. Routine rigidity often arises from inabilities to alter patterns and business processes, while resource rigidity often originates from an unwillingness to make new investments. Routine rigidity relates to the response structure. In contrast, resource rigidity associates with response motivation (Kelly & Amburgey, 1991). Inertia often becomes salient when resources, capabilities and routines hinder implementations of disruptions, such as digital technologies. As inertia often stems from the tendency to stay in the same trajectory, it becomes evident that path dependence fostered by existing resources, routines and capabilities may constrain innovation possibilities enabled by digital technologies. Inertia is a substantial issue when undergoing a digital transformation. The issue of inertia often does not stem from top management, although support from top management when implementing technologies and doing a transformation is beneficial. Instead, researchers propose that the organisation's structural components, i.e., tangible and intangible components, are the primary source of inertia. As these components are so ingrained in everyday processes and practices, these are the actual hindrance of fully leveraging digital technologies (Vial, 2019).

Resistance among employees is another barrier that may hinder a digital transformation. This barrier often emerges when disruptive technologies are presented and introduced and the pace of such introductions. The way these are introduced is also a potential aspect resulting in resistance. Researchers propose that innovation fatigue is a potential cause of this resistance (ibid). CDOs and CIOs could minimise the risk of resistance, as those leaders can ensure the usage and leverage of digital technologies as well as assure that the implementations follow the organisational culture. If these preventing aspects are considered, the employees' possibility of accepting and adapting to the new technologies is greater (Singh & Hess, 2017). However, the opinion on whether these resistance minimising measures is effective or not is uncertain. It is proposed that resistance stems from inertia, which is too deep-rooted in everyday processes and practices to simply be addressed by changing employee behaviour or controlling the pace of technology introduction, for example. These researchers propose that a fundamental change of processes to obtain sufficient flexibility to meet the changes needed are the solution to employee resistance. Resistance can also be caused by the lack of long-term perspective and visibility on the possible advantages, benefits and efficiencies digital technologies can bring. Workshops to increase organisational involvement may prevent resistance. The involved actors will gain more understanding of the process, advantages and benefits a digital transformation can bring while also enhancing cross-functional collaboration (Svahn et al., 2017; Vial, 2019).

Digital transformation often involves digital technologies aiming at effective business processes and management (Vial, 2019). Employees may interpret that digital transformation potentially can threaten their employment. This scare could result in both conscious and unconscious resistance to change. For example, this barrier toward digital transformation is evident especially in production companies where humans can be replaced by technology. If this scare is realised, the digital transformation may turn out ineffective. The ineffective digital transformation may be a goal of scared employees, as they may hope for an aborted transformation and save their jobs in that way. Hence, leadership and management need to realise and recognise such fears and handle those employees with care. Leaders should assure employees about their employment, and explain potential expertise and role development to solve this digital transformation barrier (Tabrizi et al., 2019).

2.1.7 Impacts

A digital transformation impacts a wide range of areas, such as within the society level. It is proposed that the most noticeable impact of a digital transformation is at the organisational level. The main areas of digital transformation influences are operational efficiency and organisational performance. Literature highlights that digital technologies may impact operational efficiency (Vial, 2019). For example, accelerated decision-making processes facilitated by analytics and big data. Operational efficiency thus includes automation and enhanced business processes (Bharadwaj et al., 2013). Furthermore, cost reductions can be obtained by digital transformation. For example, cloud services and computing facilitate on-demand, flexible solutions and resources that do not need to be maintained and managed by IT employees (Kane, 2015). Hence, the technologies associated with digital transformation have a vast impact on the efficiency of processes, practices, and proceedings (Vial, 2019).

Another impact of digital transformation, which is also partially associated with operational efficiency, is the potential for enhanced organisational performance. The possible organisational performance improvements are innovativeness, growth, financial performance, competitive advantages, and organisational reputation. Current literature proposes that, on a conceptual level, digital technologies can endorse an organisation's abilities to foresee and respond to the increased environmental complexity to be able to construct strategies, changes, responses, and developments to increase the possibilities of survival by redefining and adapting core processes and activities (ibid).

Although the organisational level impacts are the most prominent in both literature and practice when discussing digital transformations, several higher-level impacts are considered. These relate to both the industry and society level (ibid). One significant positive impact frequently raised is the potential of enhanced living conditions for individuals, e.g., enhancement of the healthcare industry through electronic records, analytics, developed physical products, etc. (Haggerty, 2017). One can consider digital transformation as a value reinforcement mechanism, where the value created by one parameter can create more value. However, there are several undesirable outcomes of digital transformations, primarily associated with security and privacy (Vial, 2019).

2.1.8 Dynamic Capabilities

Not included in the framework presented by Vial (2019), see *Figure 2*, but also seen as an important aspect in digital transformations is dynamic capabilities (Weritz et al., 2020). Dynamic capabilities as a concept were introduced in the 1990s as an attempt to analyse how organisational methods, resources, and structures can contribute to the organisational competitive advantage in an era of rapid technological change. The concept dynamic can be defined as

> "*[…] the capacity to renew competencies to achieve congruence with the changing business environment*" (Teece et al., 1997, p.515),

and the concept capabilities can be defined as

> "*[…] the key role of strategic management in appropriately adapting, integrating, and reconfiguring internal and external organisational skills, resources, and functional competencies to match the requirements of a changing environment*" (ibid, p.515).

There are many different definitions of dynamic capabilities, and each dynamic capability has sole or multiple purposes and principles. Some dynamic capabilities aim to extend the organisation's existing business or to emerge to new markets by acquisitions, internal growth, or strategic alliances. While other dynamic capabilities aim to enhance innovation to create new products or processes, and others on the managerial principles to enable a profitable and effective organisation. There are endless purposes of dynamic capabilities, as there are endless ways and strategies for organisations (Helfat et al., 2009). However, the original definition of dynamic capabilities was made by Teece et al. (1997) and is defined as

> "*the firm's ability to integrate, build, and reconfigure internal and external competencies to address rapidly changing environments*" (Teece et al., 1997, p.516).

The highest order of dynamic capabilities is sensing, seizing, and transforming competencies, which are the ones top management should focus on. These dynamic capabilities are innovation-enablers and business model selectors. The highest-order capabilities direct and aggregate "ordinary" capabilities as well as dynamic capabilities of the second order. The dynamic capabilities framework is a multidisciplinary model where the dynamic capabilities are the core that reflects on the interdependence of dynamic capabilities of various orders, business models, strategy, etc. (Teece, 2018). This can be observed in *Figure 5*.
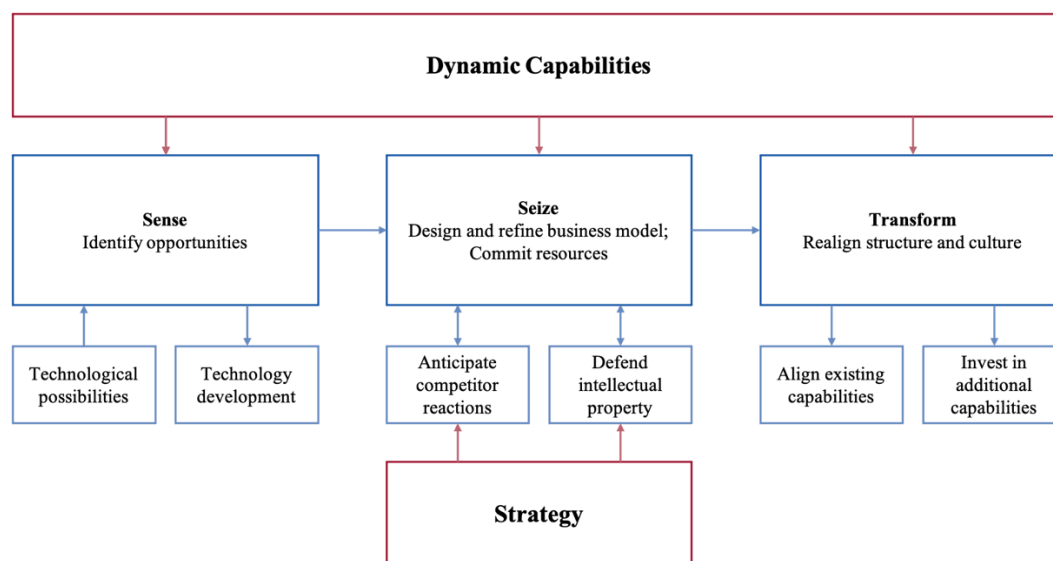
Figure 5. Scheme of the interdependence of dynamic capabilities, business model and strategy (ibid, p.44)

The figure above illustrates the omitting feedback channels, such as the feedback channel between dynamic capabilities and organisational design. The organisation's strategy and dynamic capabilities aim to create and redefine the business model, which directs and manages a transformation (ibid). Sensing capabilities include examining the environment and market for trends or demand that can disrupt the organisation. Seizing capabilities includes capabilities for neutralising threats or addressing opportunities, such as avoiding deception, hubris, and bias among leaders. The seizing capability is experimental and supports commitment and action. Sensing and seizing capabilities thus are capabilities to create and detect opportunities. Transforming capabilities are different and are capabilities with which organisations can execute and perform a digital strategy. These capabilities include the capacity to renew resources, agile capabilities and network-building potential (Teece, 2007; Warner & Wäger, 2019). The scheme illustrated in *Figure 5* above illustrates how organisations can handle disruptions and complex and uncertain environments they act within today, which are highly dependent on the rapid development

of technology and digitalisation. Hence, dynamic capabilities have gained significance since many organisations nowadays undergo digital transformations to handle these challenges (Teece & Leih, 2016; Teece, 2018).

The subject of digital transformation enabling capabilities has been rigorously researched in recent years. This can be a result of the disruptive nature and complexity of digitalisation and digital transformation, and that the dynamic capabilities framework is a powerful tool for digital transformation, especially for organisations within traditional industries (Warner & Wäger, 2019). Several studies have been done to define which dynamic capabilities are essential during digital transformation. Weritz et al. (2020) did a multiple-industry study and identified six dynamic capabilities relevant to digital transformation. An organisation should have *absorptive capacity capabilities* to effectively explore, exploit, obtain, process, and transform knowledge, both internal and external. This will enable the early detection of opportunities and threats. The organisation also needs to be *agile and flexible* to react to environmental, customer and market changes and quickly implement such changes into business models, for example. *Cross-functional collaboration* is another dynamic capability important for digital transformation, as the organisation will obtain the ability to align work and processes between departments and cooperate toward a common goal. The cooperation between departments may also benefit the digital transformation development by new ways of thinking, for example. The organisation needs *innovation capabilities*. This capability allows an organisation to create or transform managerial practices, process or structures, and internal routines. Organisations with innovative capabilities are more prone to experiment and take risks, enhancing the possibility of leveraging new technologies and improving new products and services. The organisation also needs to be *market-oriented*, which can be explained as examining the market and environment to detect new opportunities, trends and demands. This capability may enhance the organisational performance during the digital transformation as understanding and knowledge of the market will bring insights into new value creation paths and changes in demand, which the organisation can respond to. Lastly, the *relational capability* is essential for digital transformations. This is the ability to construct relations with other stakeholders and partners and to share technological, institutional, and financial resources with these relations. This creates a network that can be beneficial during digital transformations, as the development processes may be simplified (Weritz et al., 2020). Warner and Wäger (2019) agree with these dynamic capabilities to enable digital transformations and classify these into three types of capabilities. The relevant dynamic capability is related to manoeuvring innovation ecosystems, renovating and rebuilding internal structures, and developing and improving digital maturity. Moreover, digital transformation differs from the strategic change as digital technologies accelerate the pace of change, ultimately increasing the environmental volatility, uncertainty and complexity (Warner & Wäger, 2019). Because of this, dynamic capabilities have gained significance, as they can be the tipping point of a successful digital transformation and organisational failure (Helfat et al., 2009; Teece, 2018; Warner & Wäger, 2019). Additionally, Weritz et al. (2020) propose that the organisation's digital culture should include continuous development and learning, data governance and ethics, and new and redefined digital leadership to proceed toward digital maturity (Weritz et al., 2020).

2.1.9 Successful Digital Transformation

A digital transformation is a fundamental change of the organisation and a strategic relocation of its business. By this, researchers and practitioners consider a digital transformation a necessity associated with significant risk. In 2019, researchers did a survey for CEOs, directors, and senior executives, which showed that they consider the risk associated with a digital transformation the number one risk to their organisation. The study's findings can be validated by the fact that 70% of all digital transformations

fail to reach their goals, and during 2018 $1.3 trillion was spent on organisations' digital transformation, out of which $900 billion went to waste due to failure. Tabrizi et al. (2019) propose that the high failure rate is because organisations fail to understand that a digital transformation is about people, not technologies. For example, digital technologies bring possibilities to optimise processes. However, suppose the people in the organisation have flawed processes and practices, and the people in the organisation do not have the right mindset and willingness to change and adapt. In that case, the digital transformation will most likely fail and magnify flaws (Tabrizi et al., 2019). Pihir et al. (2018) agree with this, who proposes that digital technologies are not just about information science or technology. They constructed a methodology to assess determinants for digital transformations to converge toward digital maturity (Pihir et al., 2018), which can be found in *Table 2*.

Table 2. Determinants of assessing digital maturity for digital transformations (ibid, pp.143-144)

Determinant	Description
Strategy orientation	*Leadership, management, vision*
Customer centricity	*Customer monitoring*
ICT and process infrastructure	*Management of ICT resources and business processes*
Talent, capability, and capacity strengthening	*Permanent investment culture regarding new capacities, skills, and knowledge*
Innovation culture and organisational commitment	*Engagement to innovation culture and organisational culture and other factors*

Given these determinants, it becomes evident that digital transformation is about people and digital technology is merely a tool (ibid), and as Vial (2019) defines it, a fuelling factor. However, the fact remains that 70% of all digital transformations failed in 2018 (Tabrizi et al., 2019). Bongiorno et al. (2018) propose that the lack of collaboration between managers and academics may be why organisations fail to utilise the full potential of digital transformations (Bongiorno et al., 2018). It is proposed that failure to understand how fundamental the change of the organisation has to be is the reason why these initiatives fail. Ruud (2017) propose that 80% of the digital transformation is about people, practices, processes and the organisational structure, and only 20% is about technology (Ruud, 2017). Since digital transformations, digitalisation and digitisation are concepts commonly misinterpreted (Bloomberg, 2018), a reason why digital transformations fail is that the misconception of how fundamental the organisational change needs to be when doing a digital transformation. Some organisations may only digitise and digitalise during a digital transformation while leaving the organisational structure and strategy unchanged (Davenport & Westerman, 2018; Vial, 2019).

There exist several tools to enable successful digital transformations, some described in previous sections in this chapter. However, Sow and Aborbie (2017) present several organisational qualities and elements required to achieve the digital transformation's goals. The organisation needs to identify future business and leaders that will direct and manage the transformation. The organisation needs to convince stakeholders that the digital transformation is an appropriate step and a good idea. The organisation needs to determine how to obtain a competitive position in the current digital era and how decisions should be made while undergoing digital transformation. The organisation also needs to identify potential success areas of the initiative and how to accomplish these goals efficiently. Ultimately, a

digital transformation requires substantial human, technological, and financial capital, which all needs to be aligned. Consequently, a digital transformation strategy, both while undergoing the transformation and for the future, needs to be constructed and get all organisational members to get the right mindset and accept the transformation to come (Sow & Aborbie, 2018). To obtain these qualities and elements, much responsibility falls on leadership to motivate, direct, and manage employees in the direction of the digital transformation. A digital transformation is thus an arduous process. Kane (2019) suggests that the more digitally mature the organisation is, the more employees will utilise and adapt to the digital technologies and embrace the digital transformation, which can be observed in *Figure 6*. Meaning that the longer an organisation has come in the digital transformation, the less arduous the process becomes (Kane, 2019).
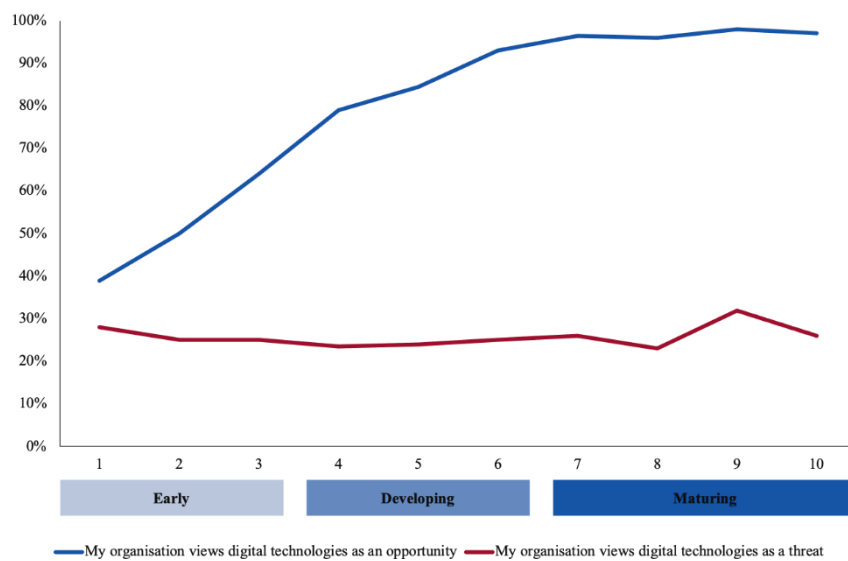
Figure 6. Employee perception of digital technologies (ibid, p.45)

Kane's (2019) study shows that as organisations become more digitally mature, the digital technologies implemented can help organisational members get in the right mindset and utilise the digital strategy changes. This is in line with what Sebastian et al. (2017) argue are the essential elements to successfully digitally transform an organisation. A digital transformation should have a digital strategy defined by a value proposition inspired by SMACIT, an operational, structured backbone that facilitates operational performance and excellence, and a digital platform enabling responsiveness and innovation to increase the potential of new market possibilities. These essential elements are quite technology-related (Sebastian et al., 2017), which differs from research in general. However, Tabrizi et al. (2019), Davenport and Westerman (2018), and Vial (2019) highlight the importance of technology, although not as a primary factor. These differences of opinions and no real "go-to" strategy regarding how to alter the organisation, create suitable strategies and change the mindset of the organisation may be one reason for the low success rate of digital transformations (Tabrizi et al., 2019; Davenport & Westerman, 2018; Vial, 2019; Sebastian et al., 2017).

2.2   Governing Principles in Public Organisations

The relation between governing principles and digital transformation has been established in the literature (Janssen & van der Voort, 2016; Obwegeser et al., 2020; Soe & Drechsler, 2018). For example, an organisation's usage of IT is dependent on governance (Wu et al., 2015). *Governance* can be defined as an attempt to improve the coordination between actors, which are relatively dependent on

each other, with the purpose of it being to solve societal problems (Klijn, 2008). Hartfield-Dodds et al. (2007) use the following definition.

> "*Governance refers to the institutional arrangement which shape actors' decisions and behavior, including the exercise of authority within groups or organisations (such as firms or nations)*" (Hatfield-Dodds et al., 2007, p.3).

For public organisations, governance is essential in decision-making and responding to technological developments, which can cause disruptions in society (Janssen & van der Voort, 2016).

2.2.1 New Public Management

New public management, or NPM, brought objectives from market economics to the public sector's managerial and governing practices. NPM promotes a result-driven culture, where the efficiency of the management is prioritised over the effectiveness of delivering public services (Self, 2000). Furthermore, it promotes organisational choices which decentralise, separate, and strive towards a single-purpose organisation. It also promotes quasi-markets, as public and private organisations compete over policymakers with the same resources (Cordella & Bonina, 2012). NPM advocates a "slim government" and a "slim state" through "slim management" (Cordelia, 2007), and to make public organisations more entrepreneurial and "run them like businesses". It was a response to bureaucratic government, which was perceived as inefficient due to its high level of unnecessary independence between public organisations and boredom in the bureaucracy. NPM shifts administrative practices and organisational solutions by promoting competition, measuring the performance of outcomes and not inputs, and sees citizens as customers (Osborne, 1993). As the main driver of public sector reforms, NPM set ambitious aims to make governments accountable, decentralised, responsive, results-orientated, and customer-oriented (Batley & Larbi, 2004).

Hood (1991) identified seven components that characterise NPM. These are (Hood, 1991):
1. Clear division of accountability and power
2. Specific standards and measurable goals, indicators of success
3. Strong emphasis on outputs. The results are more important than procedures
4. Decentralisation of the public sector, create smaller units, improve efficiency by hiring services both within and outside of the public sector
5. Increase competition in the public sector as rivalry results in lower costs and improved standards
6. Management practices inspired by the private sector. Increase flexibility in hiring and rewards, improve PR
7. Cost-effectiveness. Cut direct costs, improve the use of resources, "do more with less".

The era of NPM has impacted public organisations. Many government organisations have been left with a reduced skill set, as well as with limitations in their capacity to upgrade their own IT infrastructure (Dunleavy et al., 2006). Furthermore, public value has been neglected in the pursuit of efficiency (O'Flynn, 2007). In 2018, the Swedish government released a statement announcing that the strong belief in NPM within public organisations in Sweden has to stop (Finansdepartementet, 2018).

2.2.2 Public Value

Public value is by some considered a paradigm to NPM (O'Flynn, 2007; Stoker, 2006). Public value was introduced as a concept by Moore in 1995 and referred to outcomes of NPM. Moore (1995)

emphasised that public managers and private managers' goals are different, where private managers commit to creating economic, or private, value. In contrast, public managers should create social or public value (Moore, 1995). Public value is not necessarily defined by those who produce them, e.g., public organisations, private firms, or other types of organisations, but rather by the desires of the citizens collectively. This can be challenging for public managers as citizens can have conflicting interests and desires, and these can also change over time, sometimes quickly (Alford & Hughes, 2008). Compared to private values which can be measured financially through, e.g., profits, public values are much harder to define. In an ICT implementation, prioritising public value relates to improving governance and strengthening the democratic process (Brewer et al., 2006).

Public value centres around the government's actions (Stoker, 2006). According to Karunasena and Deng (2010), the performance of public services is examined through the perspective of citizens. Public value offers freedom for innovative solutions through innovative ways to design and implement digital initiatives in governments (Karunasena & Deng, 2010). The theory has received more attention from researchers since it offers an alternative approach to NPM, where the focus is shifted from internal efficiency to value creation outside of the organisation (Panagiotopoulos et al., 2019).

Implementing private sector management tools in the public sector can be problematic, as the goals and aims of the two are not strongly correlated. In the private sector, the aim is to generate private value, while the goal of the public sector is to improve the public or social value. It is vital to understand the difference between them, and Soe and Drechsler (2018) propose that this is the core reason why public value is more applicable for digital governments rather than NPM. Moreover, it has the potential to establish open ecosystems (Soe & Drechsler, 2018). It is important to include a public value perspective in the implementation of e-government as an understanding of it can facilitate whether it is successful or not (Twizeyimana & Andersson, 2019).

Panagiotopoulos et al. (2019) developed a framework for public value creation in digital governments, which shows links between the different processes that produce public services and how technology can impact their production. Furthermore, it presents how the capabilities of organisations have to be coordinated, manage production processes, and the integrated outcomes of consumed public value services (Panagiotopoulos et al., 2019), see *Figure 7*.
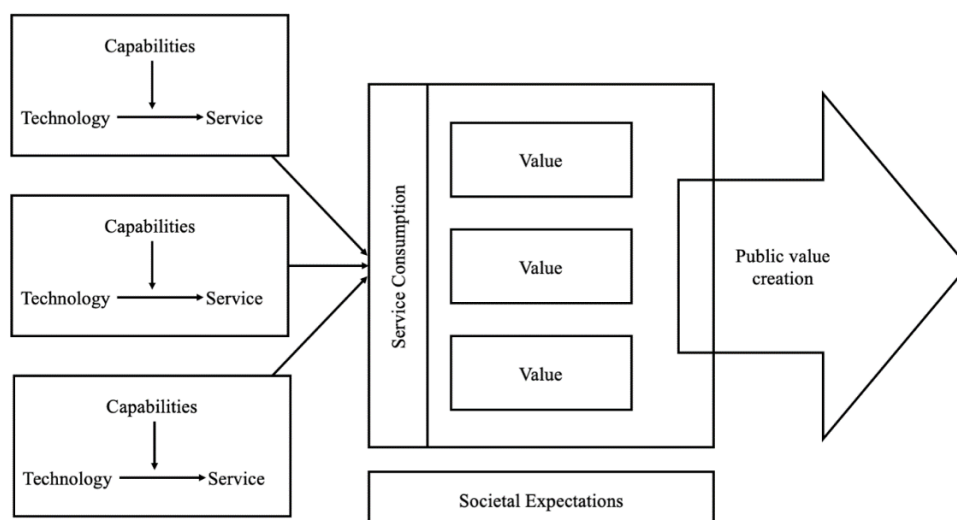
Figure 7. Conceptual framework of public value creation (ibid, p.4)

The framework's left side portrays how digital technologies can support and enhance public services by improving efficiency, accessibility, transparency, and accountability, similar to aspects central for digital governments. Organisational capabilities and the configuration of technologies facilitates the production of services. It is a systematic ability to deploy, integrate, and reconfigure resources that enable organisational capabilities. Capabilities have the potential to create public value "*by permeating the boundaries between the various digital government implementations that may exist in relative isolation from each other*" (ibid, p.4). Organisations vary in their institutional characteristics, context, and resources, which implies that not all organisations can implement all technologies or are required to have all capabilities. If organisations are unable to develop capabilities internally, these can be acquired externally through collaboration (Cabral et al., 2019). However, this might affect the openness of data and accountability, as well as flexibility (Panagiotopoulos et al., 2019). The organisational capabilities focus on creating the best public value outcome rather than ensuring that individual innovations or technological implementation are successful. Thus, competing public values can be addressed by services that are enhanced by individual technologies or services (Rose et al., 2015). Competing values can cause various directions in which technologies and organisational capabilities are deployed (Panagiotopoulos et al., 2019).

The middle of *Figure 7* illustrates the combined consumption of public services aimed at different values. According to Panagiotopoulos et al. (2019), the combined consumption of various services enabled by digital technologies through which public value is created. The outcome, presented on the right side of *Figure 7*, is a specific arrangement of capabilities together with technologies. These can span across the organisation. At the bottom of *Figure 7* is societal expectations which are a core component of public value and must constantly be balanced with the delivery of public services. To meet these over time, providers of public value have to remain responsive to technological developments and changes in societal expectations. To create public value that meets societal expectations, the configuration of capabilities and technologies can be adapted. Thus, creating public value is an integrative process rather than implementing new technologies (ibid).

2.2.3 Adaptive and Agile Governance

Digital government, adaptive governance and agile governance are usually coupled; however, there are differences between them. Soe and Drechsler (2018) differentiate the concepts, categorising digital government as the broadest and agile governance as the narrowest, see *Figure 8*.
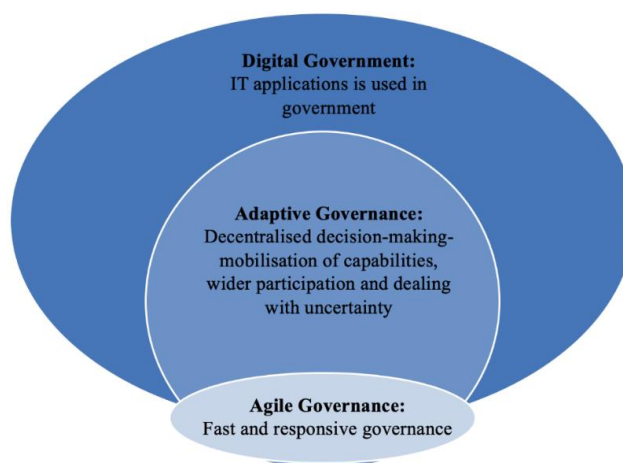
Figure 8. The relationship between the concepts Digital Government, Adaptive Governance, and Agile Governance (Soe & Drechsler, 2018, p.324)

Adaptive Governance

Adaptive governance originates from the research field of socio-ecological systems, with the purpose to introduce a new approach of governance to manage uncertain and complex environmental challenges, such as climate change (Dietz et al., 2003; Chaffin et al., 2014). It is suitable for problems and projects that involve several actors, and are complicated and uncertain (Nelson et al., 2008). Adaptive governance distinguishes that there is no standard way to handle technology projects which are complex, uncertain and can involve different stakeholders, whose interests can at times be conflicting. There is no uniform way that works in all situations. Thus, organisations have to be prepared and learn (Gunderson & Holling, 2002).

The main characteristics of adaptive governance agreed up-on was introduced by Janssen and van der Voort (2016). They consist of decentralised decision-making, mobilisation of internal and external capabilities, adjustments to handle uncertainty and broad participation (Janssen & van der Voort, 2016). Adaptive governance has learning as the core value instead of stability or accountability (Gunderson, 2001). To achieve adaptive governance, organisations should be able to manage changes and implement bottom-up decision-making structures, which are decentralised (Soe & Drechsler, 2018). Adaptive governance has the potential to increase organisations ability to handle changes, while at the same time ensuring that the organisation does not become unstable. For organisations that struggle to adapt and innovate, adaptive governance can improve the adaptive capacity to address uncertainties as well as complexities (Janssen & van der Voort, 2016).

Digital transformation requires organisations to generally become better at adjusting to change (Bloomberg, 2018). However, organisations have few instruments which enable them to react and adapt to disruptive changes. Generally, organisations are too focused on their daily operations. The traditional governing principles advocate for stability as well as accountability. This leaves little margins to adapt to environmental changes and utilise new developments. According to Janssen and van der Voort (2016), there is an evident need for organisations to be adaptive. Technological developments are changing society, and organisations have to be able to react and adapt (Janssen & van der Voort, 2016).

As mentioned before, adaptive governance promotes learning above stability or accountability. It is not as easy compared to stability if the aim is to ensure continuity and provide reliable and accountable processes. Yet, governments also need to provide essential public services and responsibly use public resources. It is a major challenge to simultaneously ensure both adaptability and stability. Change can cause instability and it is, therefore, necessary to have knowledge about the organisation, and which parts can or needs to change and which should remain stable. Adaptive governance has, thus, the ability to challenge stability and accountability which governments deem as essential. Hence, there is a need to have adaptive governance which is ambidextrous and has can balance stability and accountability with adaptivity and agility (ibid).

Adaptive governance is associated with sustainability. In literature, adaptive governance is frequently linked to environmental governance (Karpouzoglou et al., 2016) and can be described as a process that outlines a path for working with sustainability (Boyle & Kay, 2001). Adaptive governance has been applied to context for, e.g., water management, coastal management and urban sustainability (Karpouzoglou et al., 2016).

Agile Governance

Adaptive governance and agile governance are commonly misinterpreted to be the same or similar, however, there are differences between them (Janssen & van der Voort, 2020). Agile methods have their origin in the software engineering domain, intending to respond to changes rapidly and discover mistakes early in the developing process. In software development, the agile approach is to gradually create, test and improve the quality of technological products in short and iterative sprints (Rigby et al., 2016). Agile methods enable fast and responsive processes (Martini & Bosch, 2016), and within the private sector, agility enables organisations to respond to environmental changes such as technological developments or changes in customer desires and needs (Tallon et al., 2019). Agile government, on the other hand, extends the focus of agile methods to a broader perspective. The aim is to transform the organisational culture and collaboration methods to increase adaptiveness. Extensive practice of agile government requires both knowledge and theory for governments to address various opportunities of challenges they face. Potential challenges could be accountability, needs for new policies or information overloads (Mergel et al., 2018).

There are several advantages of agile governance in public organisations. Firstly, agile assumes that situations shift and vary over time, and the goal is to satisfy citizens through solving problems rather than produce detailed documents. Secondly, agile promotes adaptive structure above hierarchies or silos. Instead of strongly embedded administrative divisions, these take a less prominent role. Cross-functional arrangements between the divisions are put in place, to improve transparency, distribution of resources as well as capabilities. At the front end, agile should work seamlessly. Thirdly, agile emphasises that the expertise of individuals in the organisation should be utilised, above following traditional operations. This can potentially increase ownership of those involved, and could, as a result, improve acceptance during implementation. Furthermore, agile promotes continuous learning, especially from previous mistakes. Thus, zero-failure cultures are abandoned for trial and error approaches. This, however, demands continuous evaluation. Lastly, agile increases the organisation's knowledge about processes and procedures, as well as requirements concerning new services or processes (ibid).

There are also challenges with agile governance. Agility conflicts with many traditional bureaucratic organisations, which requires the organisation to promote experimentation, not be afraid of public failure and have managers who take responsibility for and defend outcomes. Additionally, this type of governance requires new forms of leadership as decisions are made in teams and trial and error approaches are supported. According to Mergel et al. (2020), this is not frequently adopted among middle managers in public organisations. Agile governance also requires new contracts and procurement approaches that are flexible. It is contradictory to traditional contracting processes as it works with continuous improvements, instead of stepwise delivery of a specific product or service (ibid).

Combined

As mentioned before, adaptive and agile governance are, despite their differences, intertwined with each other (Janssen & van der Voort, 2016; Mergel et al., 2020) and these can also be combined with public value. A study on cross-border cities found that government performance can be managed with public value combined with agile and adaptive governance and effectively improve the quality of mobility services, reduce emissions and build trust in institutions. They propose a framework of public value and adaptive/agile governance in digital government (Soe & Drechsler, 2018), see *Figure 9*.
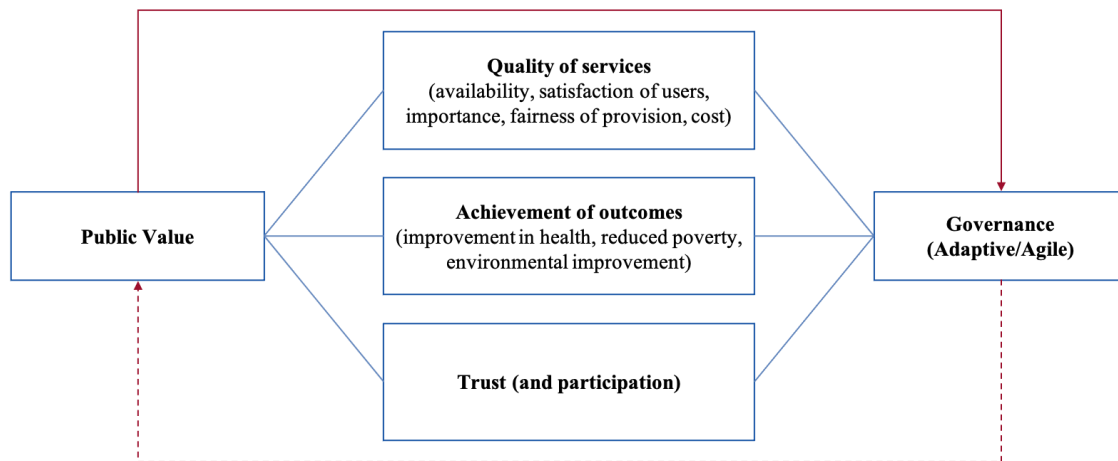
Figure 9. The public value theoretical framework (ibid, p.326)

The framework illustrates how to organise and manage public value in e-government and links adaptive and agile governance to it. There are three drivers which create public value: quality of services, the achievement of outcomes and trust. Quality of services concerns availability, satisfaction, importance, fairness, and costs, while achievement of outcomes concerns improvements in health, environment, and poverty reduction. Trust relates to the trust citizens have in public institutions, as well as the participation of citizens in value creation. In the study, Soe and Drechsler (2018) concluded that governments can be adaptive and agile while simultaneously public value (ibid).

Janssen and van der Voort (2020) studied adaptive and agile governance in the Dutch government during the response to the COVID-19 pandemic. Their research shows that agile and adaptive can be combined, however, they can also be conflicting in practice. Although both centres around change and uncertainty, agility may impact adaptivity negatively. The main difference between agile and adaptive governance is that agile governance is, at its core, a method that has been applied to organisations. Adaptive governance on the other hand is agnostic towards methods and uses a more contingency approach. Hence, agile and adaptive governance should not be mixed up. Agile governance follows agile methods and responds quickly to changes, which can lead to lock-ins or prioritising certain issues at the cost of others. In contrast, adaptive governance has its core in learning but lacks specific and applicable solutions. Instead, it emphasises a thoughtful use of methods (Janssen & van der Voort, 2020).

3.   Methodology

The following chapter presents the methodology. The chapter begins with describing the research purpose and continues with the research approach, which includes a section regarding the conducted case study. This is followed by a comprehensive presentation of the literature review and the data collection. The chapter continues with an overview of the data analysis process and ends by discussing aspects related to research ethics as well as research quality.

3.1   Research Purpose

A research design can be descriptive, evaluative, explanatory, exploratory, or a combination of these and depends on the study's aim (Saunders et al., 2015). The chosen research purpose should be dependent on the nature of the research question and the study's analysis. Given that the research of this study aimed to gain a broader understanding and knowledge about municipalities' digital transformation, the associated governing principles and sustainability, an exploratory research design was considered the most suitable. Digital transformation is an explored area, including numerous different aspects, definitions, opinions, and perceptions. However, the perspective of digital transformation in public organisations, specifically on Swedish municipalities is limited. Thus, the research area can be considered unexplored and in need of deeper understanding, which also confirms the chosen research purpose. An exploratory research design is notably useful when a broad understanding of a phenomenon of unknown nature researched (Dudovskiy, 2018). Hence, exploratory research is not conducted to present conclusive answers, but instead to attain new knowledge, insights and assess a phenomenon, which can constitute a foundation for future research that can provide conclusive answers (Saunders et al., 2015). Given the nature of the study, the research designs that aim to provide conclusive answers would not have been feasible for this study.

Furthermore, exploratory studies need to be adaptable to discoveries and findings that may alter the direction of the study (Dudovskiy, 2018). Due to this, the study began with a wide research scope, which continuously was narrowed down and specified as the research progressed. As digital transformation is a wide concept attaining vast interest in academia for the last couple of years, the research scope was narrowed down by focusing on municipalities, governing principles, and sustainability. The scope was further narrowed down and adapted to the scientists' in-depth interviews findings that were held during the same time as the main part of the literature review. Hence, an exploratory research is appropriate as the research context and questions can be rephrased and altered when additional findings are made. Moreover, an exploratory approach is suitable when the initial information need is uncertain, while also an investigation of further research worth pursuing is needed at the early stages (Saunders et al., 2015). Thus, the results and conclusions of exploratory studies are commonly ranging of multiple options of solutions or causes to a specific problem, which is appropriate given the study conducted.

3.2   Research Approach

The approach of a study can either be inductive, deductive, or abductive. The choice is based on the nature of the research topic. A deductive approach develops theory by testing a theoretical proposition that is explicitly designed for the purpose of the study. In contrast, an inductive approach observes the empirical data to develop a theory. An abductive approach can be seen as a combination of an inductive and deductive approach. A new theory can be developed, or an existing theory can be modified, by exploring a phenomenon, identifying themes and explaining patterns (Saunders et al., 2015). In the following figure (see *Figure 10*), the thesis's research approaches for the different sections are presented.
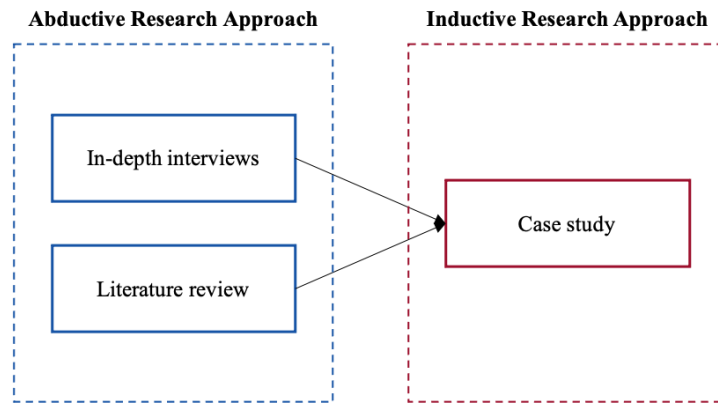
Figure 10. Research approach for the thesis' sections

The research in this thesis was divided into two sections, which can be seen in *Figure 10* above. The first section consisted of in-depth interviews with scientists who research relevant topics associated with digital transformations of public organisations. These were held simultaneously as the literature review was conducted. Thus, the in-depth interviews influenced the literature review and vice versa. These two sources of data either supported or questioned each other, which also modified and developed the path of research. This process was adaptive and iterative, and constituted the foundation for the developed framework and laid the groundwork for the case study. As the process needed to be adaptive and iterative, and as the path was consistently developed and altered, the abductive approach was determined to be the most suitable for this section of research.

The second section of the research consisted of a case study. The previous section of research constituted the foundation of this section and facilitated the scope of the case study and its corresponding analysis. Since the empirical findings from the case study were the main focus of the second part, an inductive approach was the most suitable approach for this part. The empirical data from the case study developed a theory to answer the research questions jointly with the findings from the first section of research, which also confirms the applied inductive approach for the second sections. Hence, the research approach applied for this thesis was a hybrid approach between abductive and inductive. However, Saunders et al. (2015) state that one will generally be dominant when multiple approaches are used (Saunders et al., 2015). Given that the first section has such influence over the second section, and that the second section is dependent on the first section, the dominant approach of this thesis was the abductive research approach.

Given that the study conducted in this thesis is of an exploratory nature, the data collection was based on qualitative research methods throughout the study. Qualitative research methods aim to develop a broader understanding of a complex phenomenon, gain and develop a more rigorous theoretical perspective than what current literature presents and where the major issues and concepts are unknown or uncertain (Hennink et al., 2020). This study aimed to obtain a greater understanding of municipalities' ability to transform their operations, in this case, a digital transformation. The phenomenon can be considered complex, which indicated that the most suitable method was qualitative.

3.2.1 Case Study

According to Saunders et al. (2015), a case study is a research strategy that researches a topic or phenomenon in-depth in its real-life context. For example, the case can be a person, group, organisation

or change process (Saunders et al., 2015). Farquhar (2012) defines a case study as "*an empirical inquiry that investigates a contemporary phenomenon in depth and within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident*" (Farquhar, 2012, p.5). Thus, utilising case studies are beneficial for obtaining insights into a phenomenon in its current context. Yin (1994) proposes that a case study is appropriate in certain situations: when the questions asked are "how" or "why", when the research focus is on a contemporary phenomenon, and when the researchers have little to no control over the study's events (Yin, 1994). This thesis researched the phenomenon of digital transformation in municipalities and its association to governing principles and sustainability. The research questions are of "how" or "why" nature, it is a contemporary phenomenon, and the authors of this thesis had no mandate to manipulate the event taking place. Hence, a case study approach was suitable to complete this thesis work.

The case study was conducted at a public organisation, specifically a Swedish municipality called Värmdö kommun. Värmdö kommun is a municipality situated in the Stockholm greater area and has approximately 45 000 inhabitants with approximately 2950 employees working for the municipality. The empirical data from the case study was conducted through semi-structured interviews. The selection of the case study organisation is motivated in *Chapter 6*.

3.3   Literature Review

A literature review was conducted during the first section of the research. This was done to gain both a broader and in-depth understanding of the phenomenon and obtain more knowledge of the current research. The literature consisted of two main concepts, digital transformation and public organisations (which also includes governing principles). Digital transformation is a concept vastly researched and published. There exist multiple different definitions, areas of use, strategies and applications of digital transformations, and the literature does not show a common scope of what is included in the concept. Thus, the selection of literature to include in the research was critical. As there exist a vast amount of academically approved and published articles on the concept of digital transformation, no "grey literature" had to be used for this section. The first step in the selection processes was to consider the number of citations the article had and which year it was published. The vast majority of the articles used had been cited over 100 times and were published in the last ten years. As the subject of digital transformation is continuously evolving and new research is published regularly, articles published too long ago were considered outdated and as the existing literature is extensive, articles cited multiple times were considered an appropriate selection step. However, there are a few articles that were published more than ten years ago and cited less than 100 times. These sources are often used to present original definitions, history of the subject or show the development of research, or to present niched research relevant for the study subject. The second step of the selection process was to read the abstract to streamline the selection process. The articles relevant to the research subject were chosen. These articles were carefully read and (if still applicable) included in the literature review.

The second concept, public organisations, includes a few sub-concepts, namely digitalising public organisations and governing principles. These concepts are not as researched as digital transformation, however, vast academically approved, published articles exist. Thus, no "grey literature" was needed for this part. The selection process for public organisations followed the same selection process as the one for digital transformation. Though, as there is more limited research on this area than digital transformation, literature cited less than 100 times and published longer than ten years was used. The subject of governing principles in relation to digital transformation is an area of research that is scarce.

Thus, the strict selection criteria could not be utilised in the same manner for governing principles as for digital transformation.

The literature used in the literature review was found on online search engines, such as KTH primo, Google Scholar, Web of Science, etc. The literature review aimed to build a theoretical foundation of the digital transformation concepts, the impact digital transformation has on organisations (especially municipalities), how public organisations adapt to the current digital development, and which governing principles exist in association with digital transformation. To find this literature, the main keywords was: *Digital Transformation, Digital Transformation + Public Organisation, Digital Transformation + Municipalities, Digital Transformation + Sustainability, Governing Principles, Adaptive Governance, Agile Governance, Digitalisation, Digitalisation + Municipalities*.

3.4   Data Collection

Different methods of collecting data have been utilised in this thesis, implying a multi-method qualitative approach. The data collection relied both on primary and secondary sources, which further enabled the triangulation of data. Triangulation aspires to develop an extensive and comprehensive view and understanding of the study subject (Saunders et al., 2015). The data collected through various methods have been utilised in the developing and iterative manner previously described. The primary sources in this thesis consisted of in-depth interviews with scientists researching fields relevant to the thesis subjects (see *Table 3*) and semi-structured interviews with employees at the case study organisation (see *Table 4*). The interviewees chosen for the in-depth interviews were chosen to gain a deeper understanding of the study subject from an academic point of view, while also examining how these are implemented in "real-life" contexts as the chosen scientists all have connections to the industry. The in-depth interviews also provided high-quality academic findings which ware not found in existing literature, providing another aspect of the gathered literature and further insights that could not be obtained in other ways. The interviewees for the semi-structured interviews were chosen to get a broad understanding of the organisation and its challenges as well as identifying how the digital transformation influenced different departments of the organisation. The aim was, as previously mentioned, to gain broad understanding of the organisation, but also to investigate the different hierarchical layers of the departments. Thus, semi-structured interviews with operational leaders, middle managers and operations employees were held.

3.4.1 In-depth Interviews

According to Saunders et al. (2015), in-depth interviews, or unstructured interviews, are informal and aim to explore a general area in depth. These types of interviews do not have predetermined questions, only clear ideas of themes and aspects which are aimed to be explored. The interviewee can talk freely about the subject (Saunders et al., 2015). Thus, the interview script is not presented for this interview process. These types of interviews are beneficial when investigating a complex phenomenon or processes, with the potential of gaining rich, descriptive data regarding the subject. These interviews are optimally held in person, as body language can alter the perception of answers. The interviewer ought to listen more than talk during these types of interviews, as the main aim of the interview is to listen to the interviewee's thoughts, experiences, and knowledge. In-depth interviews are also beneficial for multi-method research designs (Ritchie & Lewis, 2003).

The abductive approach suggests an iterative research process By letting in-depth interviews with scientists influence the outcome of the literature review, this is granted. These interviews were

conducted as a part of the qualitative research accentuating this thesis. Four in-depth interviews with scientists were conducted as part of this section of the thesis work. The interviewees were carefully selected based on their respective type of research. All researchers work at prominent universities in Sweden and have published articles and research regarding digital transformation and development, digital technologies and ICT, sustainability, and smart cities, with some or complete focus on public organisations. A presentation of the interviewees participating in the in-depth interviews can be found in *Table 3*.

Table 3. In-depth interview participant presentation

Interviewee	Description	Time (min)	Referenced as
Susanne Frennert	*Senior lecturer at the faculty of Technology and Society Department of Computer Science and Media at Malmö University. Main area of research is technology usage among elders and the experience of digital transformation within municipal health and social care, with special focus on welfare technologies and digital welfare technologies*	38	Frennert, 2021
Anna Kramers	*PhD in Planning and Decision Analysis with a specialisation in Environmental Strategic Analysis at the Royal Institute of Technology. Main area of research is Information and Communication Technologies (ICT) for Smart Sustainable Cities and how cities can make use of ICT solutions to reach sustainability targets*	42	Kramers, 2021
Johan Magnusson	*Docent at the faculty of Applied IT at Göteborgs Universitet. Head of the department for informatics and director for SCDI Gothenburg. Main area of research is innovation and efficiency within digitalisation, mainly concerning concepts such as shadow innovation and disintegration of value creation within public and private sector organisations*	44	Magnusson, 2021
Tina Ringenson	*Postdoctoral position at Department of Civil and Industrial Engineering, Industrial Engineering and Management at Uppsala Universitet. PhD in Planning and Decision Analysis with a specialisation in Environmental Strategic Analysis. Current research includes smart electricity networks*	44	Ringenson, 2021

All interviewees were contacted via email, where the purpose of the interview and the thesis proposal was stated. The interviews were then held via Zoom due to Covid-19. The interviews were recorded, with the approval from the interviewee and then transcribed to facilitate the coding and analysis of the interviews.

All participants in this interview process were offered to be anonymous, but all interviewees chose to display their name. The inquiry whether the interviewees should be kept anonymous or not, was not an issue in this case, as none of them opposed that their names were displayed. To be able to display these scientists' names vastly increase the reliability of the thesis's research. However, there exists some validity risk when displaying interviewees full name, as their opinion might reflect their organisation's opinion and thus their statements can be biased. Although, as these interviewees work at different

universities or research projects, their knowledge about the area is considered too profound to be biased based on their employment. The organisations they represent are rooted in academia, which further ensures unbiasedness regarding organisation driven opinions. Moreover, the quotes taken from the in-depth interviews were sent to the interviewee in question with the quotes' corresponding context to ensure that it is not taken out of context or used in an unintended way.

3.4.2 Semi-Structured Interviews

Semi-structured interviews have some predetermined themes, key questions and allow follow-up questions to be adapted to each interview context (Saunders et al., 2015). For example, the interviewees' knowledge of the subject or interest in it. The semi-structured interview process was conducted at the case study municipality and was the main contributor to the empirical data gathering, as these constituted the main part of the number of interviews. Moreover, the questions and the direction of the interviews varied from interview to interview depending on the organisational position of the interviewee and the flow of the interview. According to Saunders et al. (2015), when doing exploratory research, semi-structured interviews are a preferred method as they allow flexibility and adaptability regarding the new findings and their influence on the research (ibid). The semi-structured interviews provided essential knowledge and understanding of the organisation, which was associated, and cross-referenced with the previous findings (see *Section 3.5 Data Analysis* for more information about this process). The process of semi-structured interviews is time-consuming. However, critical insights can be obtained through this method, as the interviewee can discuss their insights and understanding of the subject, providing detailed data (ibid). The semi-structured interviews held aimed to gain insights into the interviewee's own experiences, views and opinions of the digital transformation and changes in governance currently occurring at the case study organisation. The collected data extended the previously collected data, as the theories developed could be tested on a "real life" organisation and further develop these to comply with the studied context. These advantages motivate the use of semi-structured interviews as a primary source collection method. Although, there are several drawbacks and criticism directed toward the use of semi-structured interviews, as they might imply low reliability such as biases. These will be further discussed in *Section 3.7 Research Quality*.

The interviewees were selected based on their role within the organisation, their expertise and area of work, and their hierarchical position. As previously mentioned, these interviews aimed to get a broad understanding of the organisation while also gaining a deep understanding of each offices' internal transformations and changes. Thus, the interviewees chosen represents all offices, besides the education office within the case study organisation and have various hierarchical positions within each office. Through this, both a broad and deep understanding was obtained. The interviewees were categorised into three different hierarchical levels to ensure a depth within each office. Executives/strategists have operational and strategic responsibility, middle managers are managers of departments within the municipal offices and operations are the employees that perform the operations.

The interviewees were contacted via email, where the purpose of the interview, a brief background and the themes of the interview was stated. By this, the interviewee could reflect on the interview beforehand and the answers and examples provided were thought through. Due to Covid-19, all interviews were held via Microsoft Teams. With permission from interviewees, the interviews were recorded and then transcribed. Before this interview process began, complete anonymity was decided to be applied for the participants in the semi-structured interviews. This was done to ensure that the interviewee could speak freely without the risk of repercussions. This could, however, hamper the reliability of the thesis (which will be further discussed in *Section 3.7 Research Quality*). In *Appendix 1,* a script of the conceptual

questions and themes of the semi-structured interviews can be found. In *Table 4,* the interviewees are presented as well as their respective hierarchical positions. *Figure 11* illustrate the respective interview time for each office. The interviewee will not be described in more detail to ensure their anonymity.

Table 4. Presentation of semi-structured interview participants and their hierarchical level

Interviewee	Hierarchical level
A	*Executive/Strategist*
B	*Executive/Strategist*
C	*Operations*
D	*Operations*
E	*Executive/Strategist*
F	*Middle Managers*
G	*Middle Managers*
H	*Middle Managers*
I	*Executive/Strategist*
J	*Operations*
K	*Operations*
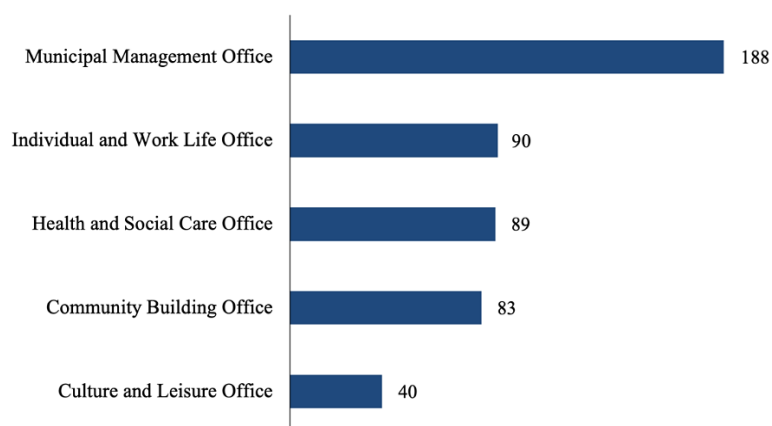
Figure 11. Participants spread of office sorted by the united time of interviews in minutes

3.5   Data Analysis

Qualitative data is, by nature, lacking standardisation and accuracy in its descriptions and explanations. The data collected consists of academic literature, the material provided by the case study organisation, notes, and interview transcripts, which can be considered to be less precise and accurate as well as more complex than quantitative data that consists of numerical data, for example. The data analysis followed a thematic data analysis, which allows the researchers to identify patterns and themes associated with the research questions. The thematic data analysis is flexible and accessible and offers a logical way of analysing data. The two research approaches utilised in this study is the abductive and inductive approach, which suggests that the data collection analysis should occur simultaneously. This allows a

dynamic and flexible approach to the research and readjustments can be made to the prospective data collection and analysis process, based on the outcome of the previous data collection and analysis process (Saunders et al., 2015). Thus, the thematic data analysis was presumed suitable for these two research approaches.

The analysis conducted in this study was divided into several steps. Similar procedures were applied to the in-depth interviews and semi-structured interviews. The analysis of the collected data occurred simultaneously as the collection. Directly after each interview, a recap meeting was held discussing the main take-aways and the general perception of the interview. Notes were taken during this meeting as well, to ensure that the first impression of the interview was remembered. The next step of the data analysis was transcribing the audio recordings of all interviews. During this process, all interviews were reviewed again, and the notes taken during the initial step could be developed. This process also ensured thorough scrutiny of the data, as the process involved both listening to the interviews once more and writing down the whole interview. When the transcribing processes occurred, identification of similarities and keywords was emphasised to facilitate the subsequent analysis steps. In the next step, the interviews were coded to reduce the data that was irrelevant to explore the chosen research object. During this step, the data was also sorted and summarised to distinguish patterns, themes, relationships and to establish a synthetisation. Due to the extent of the semi-structured interviews data set, these interviews had another coding within the initial coding to distinguish relationships and patterns within the first coding. This step was not done for the in-depth interviews, as this data set was not as extensive as the one for the semi-structured interviews. And lastly, the coding procedure was finalised by comparing the identified patterns, themes, and relationships with the research questions.

The first part of the study consisted of research following an abductive approach, which aimed to explore the phenomenon and identify its patterns and themes. These should later, during the analysis, be concluded in a framework which should be tested or applied in subsequent data collection (Saunders et al., 2015). The first part of the study included a literature review and in-depth interviews with scientists. These jointly constructed the framework presented in *Chapter 5*. However, following the inductive research approach, this framework was not constructed before the second data collection process. The second part of the study consisted of research following an inductive approach. According to Saunders et al. (2015), when conducting inductive research of exploratory nature, it is favourable to avoid having a framework until the end of the data gathering process. By not having a framework prior to or during an inductive data collection process, the risk of sensitising the data from previous theoretical material is minimised. The framework should be developed after the inductive data gathering and should guide future work (Saunders et al., 2015). Furthermore, both the abductive and inductive approach suggests that the data should be analysed simultaneously as the gathering. Thus, following the guidelines for these approaches, all data ware analysed while being gathered, the framework based on the first part of the study was constructed after the data collection process of the second part of the study, the framework was applied on the second part of the study and guided the future work of the study.

3.6   Research Ethics

When conducting research, there exist several ethical aspects and guidelines which has been taken into consideration when writing this thesis. By continuously considering this, the integrity and respect of all study participants can be ensured as well as assure that the gathered and provided information do not harm anyone. Furthermore, the ethical aspects are also crucial to ensure that the study participants are not misled and to attain impartialness. Hence, the thesis has followed the suggested guidelines for doing ethical research. The respected guidelines are the Swedish Research Council's four principles regarding

ethical academic research (Vetenskapsrådet, 2002) and the Swedish Engineer's guidelines on how to conduct research (Sveriges Ingenjörer, 2020). The four principles suggested by the Swedish Research Council involve information, consent, confidentiality, and good practice to ensure that ethical aspects are being fulfilled. The first principle revolves around information and stresses that the people participating in a study are required to be informed about the study as well as what the purpose of the study is in advance. The second principle involves the consensus requirements, which states that participating in a study is voluntary and participants have control over their participation. The confidentiality requirement is the third principle and highlights that information gathered from participants must be treated with confidentiality and in consent with the participant. The fourth, and last principle, concerns the good use requirement, which requires the information gathered during the study to only be used for the purpose it was gathered (Vetenskapsrådet, 2002).

The ethical aspects have been important during the empirical data collection, as interviews with scientists and municipality employees were conducted. Thus, these aspects have been taken into consideration before, during and after the interview process. All interviewees were contacted via mail, where the purpose of the thesis and empirical data gathering were stipulated. The mail also emphasised that participation in the study was voluntary. This information was also provided at the beginning of the interviews. At the beginning of each interview, the participants were also asked whether they would accept that the interview was recorded or not. A thorough explanation of why the interview should be recorded was given as well as an explanation of the handling of the recording after the interview. All interviewees that participated in the in-depth interviews chose to not be anonymous. To ensure consent, all quotes and sections used from their respective interview were sent to that participant to avoid misinterpretation, biasedness, unintended use of information or that the information was taken out of context. The participants of these interviews then had the possibility to amend their statements. The authors of the thesis decided before the semi-structured interview process that all interviewees that participated in the semi-structured interviews should be anonymous. The reason for deciding this was to ensure that all interviewees felt comfortable to express their opinions, experiences, and feelings, without the risk of hampering their employment or other consequences. The authors also decided to keep these participants anonymous to get unbiased data that was not obstructed with beautifications of situations or processes. Furthermore, the study has also respected the General Data Protection Regulations (GDPR) existing in Sweden. Thus, transcriptions, names, companies, etc., is only presented if permitted by the participant.

3.7 Research Quality

Typically, the research quality is dependent on the used and presented methodology. Assurance that the findings are contemplated correctly is an essential aspect of achieving high reliability and validity of the research. Moreover, the data gathering and analysis process must be consistent to attain reliability and validity. This aspect could be assured by critically reviewed literature as well as optimal research methods (Yin, 1994; Saunders et al., 2015). To analyse the quality of a study, the central concept within reliability and validity can be assessed (Saunders et al., 2015).

3.7.1 Reliability

The reliability of a study refers to whether another researcher can recreate the study using the same research design and achieve the same results or not. Thus, a study can be considered reliable if other researchers can obtain the same findings when utilising the same research design, or if the original researcher can achieve consistent findings and results at subsequent occasions (Saunders et al., 2015).

However, obtaining high reliability can be problematic in qualitative research, as the replicability of qualitative data can be a challenge (Leung, 2015).

According to Saunders et al. (2015), a common drawback of using in-depth and semi-structured interviews is that it might imply low external reliability, as these types of interviews are nearly impossible to replicate. As that the interviews reflect the real-time situation at the time of the interview, and that the setting and situation might differ substantially, replicating identical interviews is nearly impossible. Furthermore, in-depth and semi-structured interviews have no or few predetermined questions, meaning that the outcome of the interviews is highly dependent on the interviewees' answers and the setting of the interview. Due to this, the replicability becomes hampered as well, which may imply that the external reliability is low. And lastly, as the interviews are highly dependent upon the interviewees' answers and since all interviewees in the semi-structured interviews are anonymised, the external reliability may be hampered by the anonymisation as well (Saunders et al., 2015). Nevertheless, the reliability of qualitative research can still be sufficient if the results are consistent with similar studies. The advantages and strength of research including in-depth and semi-structured interviews should not be undermined by the potential low external reliability (Carcary, 2009). To cope with the external reliability issue, the explanations and motivations regarding the methodology and research design have been emphasised in this thesis, which may simplify replicability for other researchers as well as increase the research process understanding.

Furthermore, Saunders et al. (2015) propose three types of biases that may hamper the reliability of qualitative research: interviewer, interviewee, and participation bias. The interviewer bias present how the behaviour of the interviewer might influence the interviewee, i.e., if the interviewer's opinions or expectations interfere with the objectivity of the interviews, which might cause a bias toward participant responses. The interviewer bias includes behaviours such as body language, leading questions, comments, or the interviewer tone. The interviewee bias relates to the bias occurring if the interviewee would only present a limited picture of the discussion topic or in the event of the interviewee presenting false statements or responses. Since in-depth and semi-structured interviews are, in their nature, intrusive, this bias generally occurs when an interviewee wants to portray the organisation or themselves in a more attractive way or if the interviewee fears that the information revealed might be considered sensitive. The participation bias is associated with the sample of interviewees and their individual traits. The outcome of the research is influenced by the selected interview participants, which could be biased if the selected sample is considered non-representative for the organisation or study population (Saunders et al., 2015). To prevent the risk of the study being contaminated with these three biases and increase the reliability of the thesis, vast preparations for the interviews were made as well as plans on how these would be conducted. These preparations and plans comprised the development of questions and themes prior to the interview process and practising interview and listening skills. Due to Covid-19, all interviews were held via either Zoom or Microsoft Teams, which limited the required preparation of interview location. Since all interviews were held digitally, the risk of interviewer bias could be considered decreased, since the body language and interviewer tone becomes less significant digitally. Although, this bias was still considered throughout the interview process to ensure that no leading questions were asked or that the researchers' preconceptions did not influence the interviewee. Moreover, the interviewees participating in the in-depth interviews are not anonymised, which could imply interviewee bias as these interviewees might feel unease to speak their mind. Although, these interviewees are scientists working on various research projects and as these interviews aimed to get a more comprehensive view on the subject, it could be considered unlikely for these interviewees to fear presenting sensitive data or portray the municipal situation in a more attractively. Nevertheless, this bias was considered throughout the in-depth interview process. Furthermore, the participants in the semi-

structured interviews were anonymised, which may decrease the risk of interviewee bias, as these interviewees did not have to fear the repercussions of their answers. However, there might still have been some interviewee biases, as the investigation in this thesis revolves around their employer. Thus, the interviewee bias has been taken into consideration through this process. And lastly, the participants in the two interview processes have been selected either considering their expertise or by their employment role at the case study organisation, as can be read in *Sections 3.4.1* and *3.4.2*. The participants in the semi-structured interviews have various hierarchical positions within the organisation as well as work at different departments and offices. Due to this, the potential risk of participation bias has been limited. However, out of the 15 interviewees participating in the two interview processes, only three were men. This could have a potential impact on the outcome of the collected data.

3.7.2 Validity

Validity in research refers to the appropriateness and suitability of utilised the methodology, as well as the generalisability and accuracy of the obtained results (Saunders et al., 2015). To acquire validity in qualitative research, the methodology has to enable findings or a phenomenon to be studied in an appropriate context (Leung, 2015). According to Saunders et al. (2015), validity can be measured both internally and externally. Internal validity is achieved when a causal relationship can be found between two variables and is generally applied to quantitative research and causal or explanatory studies. In qualitative research, internal validity is usually not seen as a problem, since theoretical relationships can be shown through an in-depth and rich collection of data (Saunders et al., 2015). Given that this thesis has an exploratory focus and followed qualitative research, the internal validity has not been taken into consideration. External validity concerns the generalisability of the study and will be discussed further in *Section 3.7.3 Generalisability*.

Another method that can be used to ensure the validity of the research is validation, i.e., verification of data and analysis (Taylor, 2013). In this thesis, continuous feedback meetings with supervisors have been held to ensure that the findings and plans for the continued work seem reasonable. Furthermore, the scientists participating in the in-depth interviews have been contacted to ensure that the findings from these interviews are correct, while also getting the possibility for further feedback and developments. These methods have been used to assure the validity of the research by validating findings.

3.7.3 Generalisability

According to Saunders et al. (2015), generalisability, or external validity, is the extent to which the findings of a study can be applied in other contexts (Saunders et al., 2015). Achieving generalisability in qualitative research can be challenging, as the qualitative research may lack sufficient data, due to limited cases studied or sample size, to create statistically significant, generalisable results (Schofield, 1993). This challenge is salient when using in-depth and semi-structured interviews when doing exploratory research. Furthermore, utilising a single organisation case study may impact the generalisability of the research. However, generalisability can still be achieved from qualitative research and case studies, as findings might be applicable in other research settings if characteristics are similar, for example. Moreover, as the research had an exploratory focus, i.e., contributing with a deeper understanding of the research subject, the necessity to create statistically significant, generalisable results was not as applicable to this kind of research nor its objectives, compared to research developing new theories, for example (Saunders et al., 2015; Leung, 2015). Although, some researchers propose that external validity can be interpreted in other ways than statistical generalisability (Polit & Beck,

2010). For example, such researchers argue that intersectional, naturalistic, and analytical generalisability are more appropriate concepts for evaluating the external validity in qualitative research. Intersectional generalisability refers to when deep research is made, covering a community for a set period and record historically exploited, or people or communities that have been colonised as well as research their resistance movement. Naturalistic generalisability refers to when research finds results where the reader recognises differences and similarities. Analytical generalisability refers to when a particular set of findings are generalised to facilitate a theory or concept with which their research concept can be displayed as generalisable. This kind of generalisability also refers to when research produces a new theory or concepts, which later have significance to other research projects, despite that the population or context might differ. The analytical generalisability can thus be seen as fluid ideas rather than asserted or fixed (Smith, 2018). Since the research in this thesis has produced a framework that municipalities can use if they are doing a transformation, the thesis obtains high analytical generalisability, as this framework aims to help municipalities in general, not only the case study municipality. Furthermore, the framework is based upon literature and in-depth interviews with independent scientists, which further strengthens the analytical generalisability, as these two types of sources are not limited to a specific organisation or context.

4. Academic Insights

The following chapter presents the findings from the in-depth interviews with scientists.

4.1 Digitalising Municipalities

In Sweden, there are 290 different municipalities with separate prerequisites. As organisations, municipalities differ vastly from private organisation. They are extremely complex organisations. Even small municipalities are complex compared to well-established industrial companies. Inertia in public organisations is strongly embedded. In the private sector, the ambition is to continuously reduce costs and improve margins, and there is almost an unwritten rule to improve efficiency by five percent per year. In the public sector, the budget increases by five percent per year (Magnusson, 2021).

4.2 Purpose of Digital Initiatives

According to Frennert (2021), it is important to evaluate the purpose of digitalisation is. Even though this development can bring several benefits, the purpose behind it is not always considered. One problem is that many municipalities aim to be modern but fail to identify a purpose. To have a clear objective which aims to increase value creations is essential. On the other hand, it is important to recognise that interests do not always comply with each other, e.g., care logics and economic or technological ambitions. It is important to reflect on what value will be created from each initiative and to whom. The ambition should not only be to improve efficiency, but also consider other value creations. If the purpose of initiatives is to create more value for citizens or employees, it could reduce resistance towards change within the organisation. In many cases, digitalisation without value creation is performed. During transformations, the organisation should utilise the opportunity to make it optimal and reflect on how to maximise value creation. Currently, many initiatives towards citizens are perceived as strange. Even though the core idea might be good, many citizens have limited time to engage, and usually only desire safety and proper function of municipality services (Frennert, 2021).

Moreover, the vision public organisations have influences city development. Whether a prognosis built historical data or goals permeate the vision influences how future plans are constructed and how investments are prioritised. According to Ringenson (2021), one is not more optimal than the other. For example, the investment made to solve traffic situations can either be based on increasing efficiency to address prognoses indicating continuous growth of cars, or on goals aimed to decrease the number of cars. Hence, there is a difference between planning based on a prognosis compared to planning based on a goal (Ringenson, 2021).

4.3 Governance in Transformation

For decades, the public sector has copied governing principles from the private sector, particularly logics from product development companies. This is somewhat contradictory, as the public sector is a service sector. As a result, there exists an obsession to measure outcomes and throughput, and a belief that, e.g., care can be measured the same ways as car manufacturing. This has caused a lot of inertia and poor governing in the public sector. According to Magnusson (2021), the governing which exists in municipalities today counteracts digital transformations. There is a desire to change this now, however, there exists a risk that this change phase will be placed on top of existing governance, and thus the previous governing is not changed (Magnusson, 2021). There is a desire to become more adaptive (Frennert, 2021), but currently, adaptive governance is just an academic product that does not exist in

practice. There is a misconception that municipalities need to be agile. A majority of the organisation is stable over time, where parts can be agile (Magnusson, 2021). However, employees can be trained in business development by working in short sprints and projects with soft targets (Frennert, 2021).

Municipalities view themselves as competitors on a market and are trying to attract citizens and businesses, sometimes through digitalisation (Ringenson, 2021). For municipalities to be relevant, they have to be able to offer digital welfare. Otherwise, other actors will step in. Public organisations are hesitant to take risks with taxpayers' money, and they do not understand that the opportunity costs are extremely high (Magnusson, 2021). Public organisations need to learn to accept criticism in e.g., the media when taking risks with taxpayers' money (Magnusson, 2021; Frennert, 2021), which requires bravery from politicians. Furthermore, Magnusson (2021) suggests that inertia within municipalities is a choice they are making. There exists a consensus that accepts that implementations take 15 years. However, as society becomes more digitalised and changes rapidly, municipalities have to keep up. This requires fundamental structural changes (Magnusson, 2021). Additionally, Frennert (2021) suggests that to succeed with digital transformations, the organisation has to be capable of change. The organisation must also be convinced that the transformation is beneficial. Thus, it is important to embed the transformation among employees in the organisation, and avoid a top-down approach. This will ensure that everyone feels involved and is convinced of the transformation. Resistance towards transformation in municipalities can be a result of changes pushed down from the top management levels. This is magnified if systems are not adapted to the employees' work processes before implementation. This could be a result of lacking employee involvement in the change process (Frennert, 2021).

Many organisations strive towards being innovative. However, the distinction between efficiency and innovation is important to understand. Efficiency is governed by the perception that the current state is constant. Innovation, on the other hand, has no governing. It is undirected and requires the organisation to create slack. From a short-term perspective, innovation is equal to inefficiency and it only consumes resources. For an organisation to be innovative, the degree of inefficiency has to be increased. The aim of innovation conflicts with governing which strives towards optimal efficiency. It is essential for the management of the organisation to create routines around innovation and decide how much of the revenue should be invested in innovation, then create slack and freedom to operate on the innovation side (Magnusson, 2021).

Another aspect raised by Frennert (2021) is that the individual perspective can be hampered due to digitalisation. Citizens, and "customers" of services, are planned into municipalities schedules, e.g., elderly in retirement homes services are planned into a schedule which the municipality has decided before, with limited flexibility and individual perspective. The individuals become objectified and services to them become processes that have to be completed (Frennert, 2021).

4.4   Digital Strategy

It is essential to begin with defining what digital transformation is, and to create a consensus around it, and have a concrete goal with it. Otherwise, it will not be an appropriate or suitable change. Magnusson (2021) proposes that organisations have a digital strategy without actively developing one, which can be based on how the organisation approaches digital transformations. However, the digital strategy of an organisation cannot be outsourced to external actors, as they lack knowledge about the business. An external actor does not need to take responsibility for the strategy, which can make it less optimal. The strategy has to be owned by the organisation itself for it to work. Hence, organisations need to build digitalisation and transformation capabilities within the organisation through both hiring new

competence and teaching existing employees. Moreover, an outreaching function is vital to get a transformation rolling. This responsibility should not be placed on the IT department, but instead be placed on business developers who reach out to the organisation and offer the transformation. Managers in the department do not have time or resources to lead the transformation themselves. Additionally, a transformation could be impeded if the costs of digitalisation have to be covered by operating funds. The costs associated with digital transformation should be placed on digital investing objects to reduce financial thresholds (Magnusson, 2021).

Most domains can be supported by digitalisation, but it has to be done properly which is not always the case. When implementations fail, it is usually because they have not been thought through. Occasionally, the designed solutions do not consider the individual perspective. Although the original idea had good intentions, it can cause negative effects. For instance, digital systems which increase surveillance and can push socially vulnerable citizens further away from society (ibid). Frennert (2021) agrees with this, while also emphasising the employee perspective on digital implementations. Frennert (2021) suggests that it is essential to view digitalisation as an ecosystem. It is easy to focus on just the technology and implementation and forget about adaptation and integration. Implementing a new digital system is a substantial process, which requires the technology to be adapted to the context, such as work processes and existing systems. Otherwise, employees are forced to adapt their work for the new technology to function instead of it supporting the work (Frennert, 2021).

Moreover, a strong will to transform can result in initiating several projects at the same time, which can become too much for organisations to handle. At the same time, the complexity of implementing digital technologies is not always understood. It is a substantial work process for it to function. Usually, it works with small implementations, which can be driven by enthusiasts. Issues begin when the transformation is scaled up. To address this, Frennert (2021) suggests that communication about the purpose of the transformation is necessary to facilitate the change. Workshops involving all levels in the organisation are becoming more frequently used to gain a deeper understanding of work processes and how to make them more efficient. This also embeds the change in all levels of the organisation, which can streamline the transformation and reduce resistance (ibid).

4.5   The Role of Digital Technologies

Although digital technologies can create value by removing tasks that are not meaningful, the technology itself has a less prominent role. It is a tool humans can use, both in positive and negative ways. Digitalisation changes behaviour and such alterations could result in more sustainable behaviour, which is an existing connection everyone does not understand (Kramers, 2021). Digital technologies can be used as a tool to achieve sustainability goals (Ringenson, 2021). Although, Kramers (2021) proposes that the aim to become sustainable is more complex than only utilising digital technologies. Apart from effects related to the production of digital technologies, all digital initiatives do not contribute to sustainable development, e.g., electric scooters which reduce commuters in public transport (Kramers, 2021). Additionally, improved efficiency to, e.g., prevent traffic congestion, can cause more people to use cars, which increases emissions (Ringenson, 2021). Kramers (2021) states that it can be problematic to become dependent on digital systems without an alternative plan. If the system goes down, there is a risk that the service cannot be delivered anymore. It is vital to consider that technologies will require to be managed and updated. They require a business model behind them which makes actors interested in managing and maintaining them (Kramers, 2021).

Sustainability should be a fundamental interest; however, it can occasionally become an interest among others, e.g., economic interests. The economic interest could be a conflicting interest, as sustainability can sometimes be perceived as expensive. Although, sustainability can be cheap depending on how digital technologies are used (Kramers, 2021). Ringenson (2021) states that digital technologies can cause direct and indirect effects, which could cause increases in emissions. A consequence of this is failure to reach sustainability goals (Ringenson, 2021). Kramer (2021) agrees with this, and states that digitalisation in itself contributes to emissions. However, the increase or decrease of emissions due to digital technologies and digitalisation differs depending on which sector is observed. At the same time, the actuality of an emission increase or decrease is uncertain (Kramers, 2021).

4.6 Collaboration with Academia

Municipalities in regions near universities have a higher tendency to be a part of innovation hubs and apply for support from the innovation agency Vinnova. These enable municipalities to continue with their ordinary activities, but also experiment, especially with disruptive changes. Otherwise, changes tend to be small and incremental, e.g., replace paper with digital solutions (Frennert, 2021). Municipalities' role is to provide social services to citizens, which limits their ability to use resources on experimental initiatives. Collaboration with universities can be beneficial for municipalities, as a part of universities purpose is to experiment (Ringenson, 2021). Furthermore, scientists do not aspire to earn money and public organisations have noticed that scientists can provide a completely different weight in their analyses compared to consultants. This could change the dependence on consulting firms (Magnusson, 2021). However, there are difficulties with such collaborations. Research is slow, and it is acceptable to reach uncertain, negative, or unfavourable conclusions which could conflict with the desires of municipalities, who quickly want to invest in something that satisfies everyone (Ringenson, 2021).

5.   Framework

The chapter presents a framework for how to conduct the primary phases of digital transformation in a municipality. The framework is based on the literature review presented in Chapter 2 as well as the academic insights presented in Chapter 4.

The framework is constructed to help municipalities in their digital transformations. It is a guideline of how the primary phases of the transformations should be conducted and which steps need to be included. Currently, there are limited methods offered for digital transformations in public organisations, meaning that municipalities have no model to follow. Thus, this framework can be of importance within the public sector due to the high failure rate of digital transformations. *Figure 12* presents the framework. The framework puts a large emphasis on feedback loops, which are included throughout the transformation process. This is to facilitate the organisation to learn and understand the dynamic process of transformations, as well as to identify points suitable to digitally transform, both inside the organisation as well as in the societal municipality context. Each step of the framework is presented below.
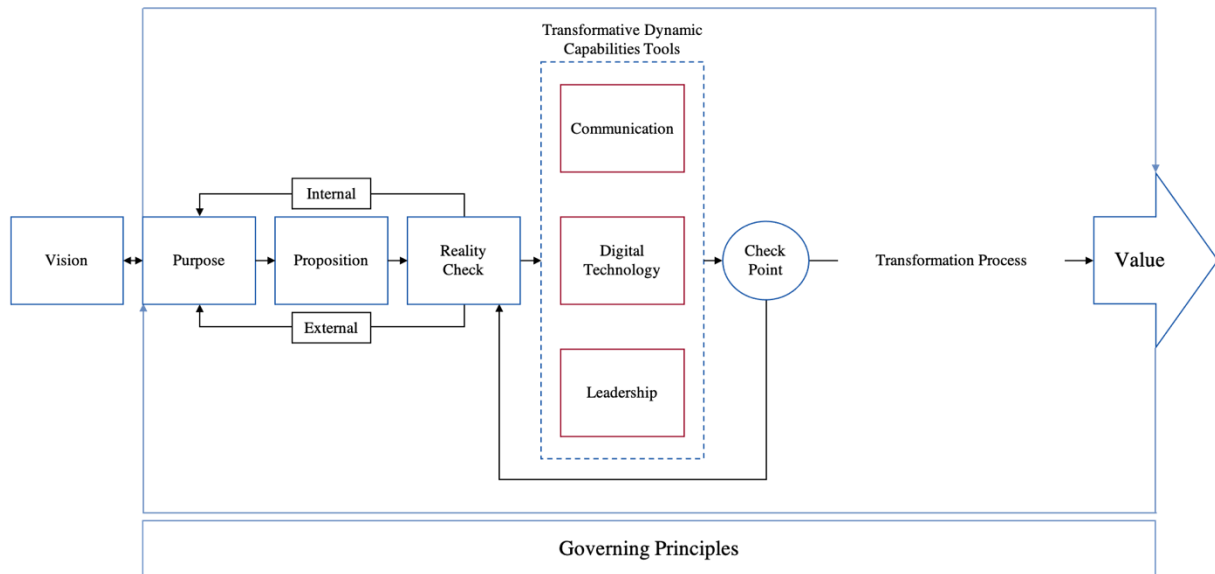
Figure 12. Proposed framework for analysing municipal digital transformations

The framework can also be used to analyse a current digital transformation. The framework thus leads the discussion of the current state of the municipality observed in this thesis. In each section, exemplified implications are presented to concretise the aims of each step.

5.1   Sensing and Seizing Dynamic Capabilities

This first part of the framework is an iterative process that exists to ensure that initiatives are properly thought through before moving on with implementation (Magnusson, 2021; Vial, 2019; Kane et al., 2016; Teece, 2007; Warner & Wäger, 2019). The purpose, proposition and reality check are part of a feedback loop that flows through internal and external paths.

5.1.1 Vision

Before beginning a transformation, a vision needs to be set. The vision does not have to be reachable, e.g., it could be a utopian picture of how the municipality can look, but it must be clear and coherent in the entire organisation as well as communicated to external parties. The vision does not have to be unique to each transformation, rather, it should be the same. Moreover, it does not need to be detailed. The vision permeates the transformation (Pihir et al., 2018; Ringenson, 2021).

For example, the vision is to become a modern municipality.

5.1.2 Purpose

This step identifies what the purpose of the transformation is. The purpose of the transformation is in a feedback loop together with value, which is the result of the transformation. Thus, whatever the purpose is, the aim has to correlate with value creation. The purpose has to be specific (Frennert, 2021; Teece, 2018).

For example, the purpose is to reduce workload for managers.

5.1.3 Proposition

Proposition describes how the organisation is planning to do to achieve the purpose. The organisation has to decide if the purpose is to be achieved through efficiency measures, innovation, digitalising, and so on. It is named proposition as it is a proposal of how the purpose can be achieved, and this has to be embedded both internally and externally before moving forward. Moreover, the proposition as well as the purpose can change, and will most likely, after receiving internal and external points of views (Kane et al., 2016; Porter & Heppelmann, 2014).

For example, to achieve the purpose, the proposition is to make invoice management more efficient.

5.1.4 Reality Check

The purpose of the reality check is to ensure that the proposed transformation or initiative is properly directed. The designed solutions need to consider various perspectives before moving forward to implementation. The reality check includes both internal as well as external aspects. This is to ensure that changes impacting the organisation are internally embedded, and initiatives affecting outside parties are externally connected. Moreover, this loop also enables organisations to identify opportunities internally and externally which can support them in reaching the purpose and vision (Teece, 2018).

For example, employees are encouraged to raise ideas and opinions, e.g., automated invoice management systems. The municipality does a market scan to check if collaborations are available with industry partners.

Internal

It is essential that the transformation is embedded in the organisation. Thus, the vision and purpose of the transformation have to be communicated out to all parts of the organisation. It is not only about communicating the vision and purpose. For the transformation to be driven bottom-up, employees on all levels need to be involved. If the goal is to digitalise one specific unit, the unit has to be involved,

both to embed the change among employees and to receive ideas and perspectives from the unit. Furthermore, this also allows the organisation to reflect upon which parts of the organisation actually needs to change, and which should remain stable (Tabrizi et al., 2019; Magnusson, 2021; Frennert, 2021).

The transformation also has to be checked externally. This is done to ensure that potential initiatives or transformation are actually desired among citizens, businesses or other actors associated wih the municipality. Furthermore, the external loop also allows the organisation to search for external partners to collaborate with during the transformation. This could be businesses, consultants, the local community or universities and scientists. What is worth noting is that this step occurs after the organisation itself has begun determining what it needs and desires on its own (Magnusson, 2021; Ringenson, 2021; Weritz et al., 2020).

5.2   Transformative Dynamic Capabilities Tools

Transforming dynamic capabilities are internal capabilities with which the organisation can execute and perform a digital or transformative strategy, which is the capacity to renew resources and network-building potential, for example (Helfat et al., 2009; Teece, 2018; Warner & Wäger, 2019). Thus, when doing a digital transformation of a municipality, three salient transformative dynamic capabilities have been identified. These are communication, digital technologies and leadership.

5.2.1   Communication

It is essential to ensure that communication channels are set within the organisation before proceeding with the transformation. If communication is not established, involving employees may be hindered, which can cause resistance and worries among the employees. Moreover, communications have to reach through all levels and departments of the organisation (Frennert, 2021; Svahn et al., 2017; Vial, 2019; Teece, 2018).

For example, a rigorous start-up meeting is held including all parts affected by the transformation.

5.2.2   Digital Technologies

Digital technologies push the digital transformation in organisations and assemble a fuel initiating them. They cause disruptions which the organisation has to respond to. Hence, digital technologies have a substantial role in organisations digital transformation. These technologies are tools, which the organisation uses in a way that fits them. These should be adapted to facilitate the operations or work processes of the organisation. Moreover, there has to be a plan beforehand of how these will be updated and managed after implementation and in the future (Vial, 2019; Bharadwaj et al., 2013; Yoo et al., 2010; Tabrizi et al., 2019; Haffke et al., 2017; Kane, 2019; Panagiotopoulos et al., 2019; Frennert, 2021).

For example, appropriate systems and their implementation plan is identified and matched with infrastructure.

5.2.3 Leadership

In change, it is necessary for leadership to shift. To succeed with a digital transformation, leadership is the second most crucial factor. As an organisation becomes more digitalised, leaders will be required to develop their digital expertise and knowledge. Hence, the organisation needs to ensure that leaders have a common digital mindset, as well as have capabilities to address disruption from both the technologies and the transformation (Weritz et al., 2020; Vial, 2019; Kane, 2019; Tabrizi et al., 2019; Pihir et al., 2018; Frennert, 2021).

For example, managers are given conditions to properly obtain knowledge about the transformation and system as well as support employees in the implementation.

5.3 Check Point

The purpose of the check point is to ensure that all steps have been evaluated, performed and achieved. If this is not the case, the transformation has to go back to reality check, as weaknesses in either the transformative dynamic capability tools or in the initial steps are appearing. This feedback loop prevents the organisation from moving forward with a weak transformation idea (Teece, 2018).

For example, ensure that all previous steps have been conducted and fulfilled before moving on with the implementation phase.

5.4 Value

Value is the outcome of transformation. It is divided into three sections: value creation for citizens, value creation for employees, and value creation for sustainability. The transformation does not need to result in value creation for all, however, at least one should be the goal for municipalities (Frennert, 2021; Weritz et al., 2020; Kostopoulos, 2019; Vial, 2019; Hess et al., 2016; Moore, 1995; Soe & Drechsler, 2018).

The value creation for citizens and employees, and achieving sustainability goals are connected to the purpose of the transformation, as they should always be embedded in the initial purpose (ibid).

For example, the value aims towards employees and reduce the time that is spent on unmeaningful tasks which reduce workloads.

5.5 Governing Principles

Governing principles is what permeate the entire transformation. It facilitates the transformation and shapes the behaviour and coordination between actors. Thus, it has to establish goals of the transformation and decision-making paths. The governance should be clear and enable the organisation to fulfil its purpose and conduct the transformation (Wu et al., 2015; Hartfield-Dodds et al., 2007; Frennert, 2021).

For example, each step does not need to have the same governing principles, however, combinations need to be handled carefully as extensive knowledge is needed. The organisation needs to identify which governing principles would be most suitable for each context. Communication and leadership could benefit from agile governance, while reality check could benefit from adaptive governance.

6.   Case Study

The following chapter present information about the case study organisation, obtained from provided material and the organisational website. The chapter also includes findings from the interviews conducted at the case study organisation. To conclude the chapter, a summary of the interviews is presented.

Sweden is a leader within technological development, which makes digital transformations a common phenomenon (Swedish Institute, 2021). Due to the nature of this study, Värmdö kommun is considered a good case study organisation, partly because its proximity to Stockholm. The proximity to Stockholm could also imply that collaborations with prominent technological and economical universities and research institutes is possible. Värmdö kommun is also a municipality that, externally, has shown a significant will to change and has initiated a digital transformation, which makes it a suitable observation object.

Having a case study in investigations such as this thesis is essential to develop the theoretical findings into practical ones and apply those. Applying such findings on a municipality with characteristics similar to Värmdö kommun is considered favourable. Since there exists a knowledge gap regarding how municipalities should conduct a digital transformation, having a case study to apply the framework on is of vast importance.

6.1   Värmdö Kommun

The case study municipality, Värmdö kommun, is situated in Sweden, and is a part of the Stockholm city region. The organisation is divided into two bodies, one political organisation and one management organisation. The political organisation consists of elected representatives, elected every four year, which determine the political orientation of financing, central administration, and planning (Värmdö kommun, 2021a). In *Figure 13*, a scheme over the political organisation can be observed.
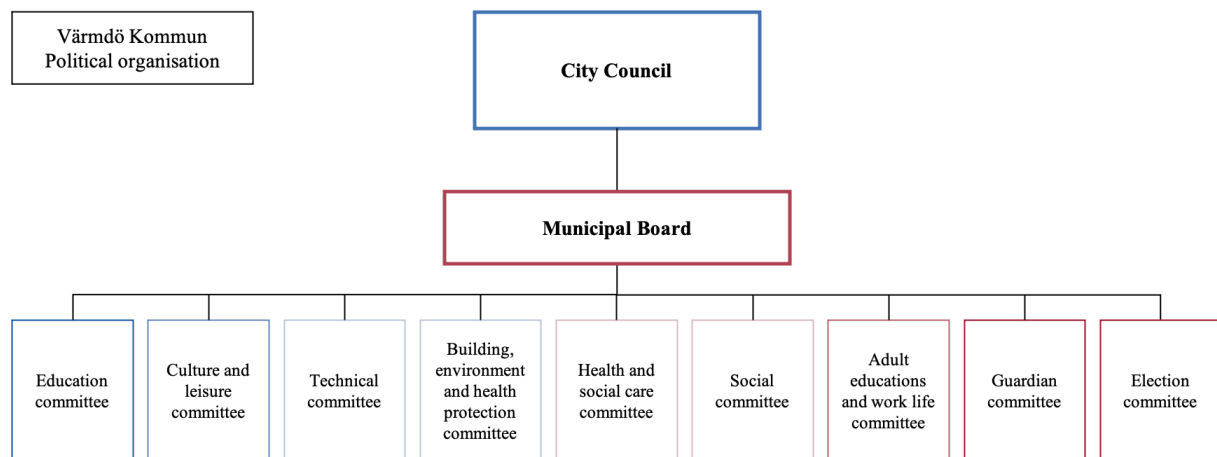
Figure 13. Scheme over Värmdö kommun's political organisation (ibid)

The management organisation in Värmdö kommun consists of offices, departments, and units. The municipality has six offices, where five offices gather the municipality's external core activities and one office, the municipal management office, that is operational and management support. The five offices responsible for core activities are also responsible for exercising political authority within each

associated area as well as financing, follow-ups and setting requirements for external suppliers. In *Figure 14*, a scheme over the management organisation can be observed (ibid).
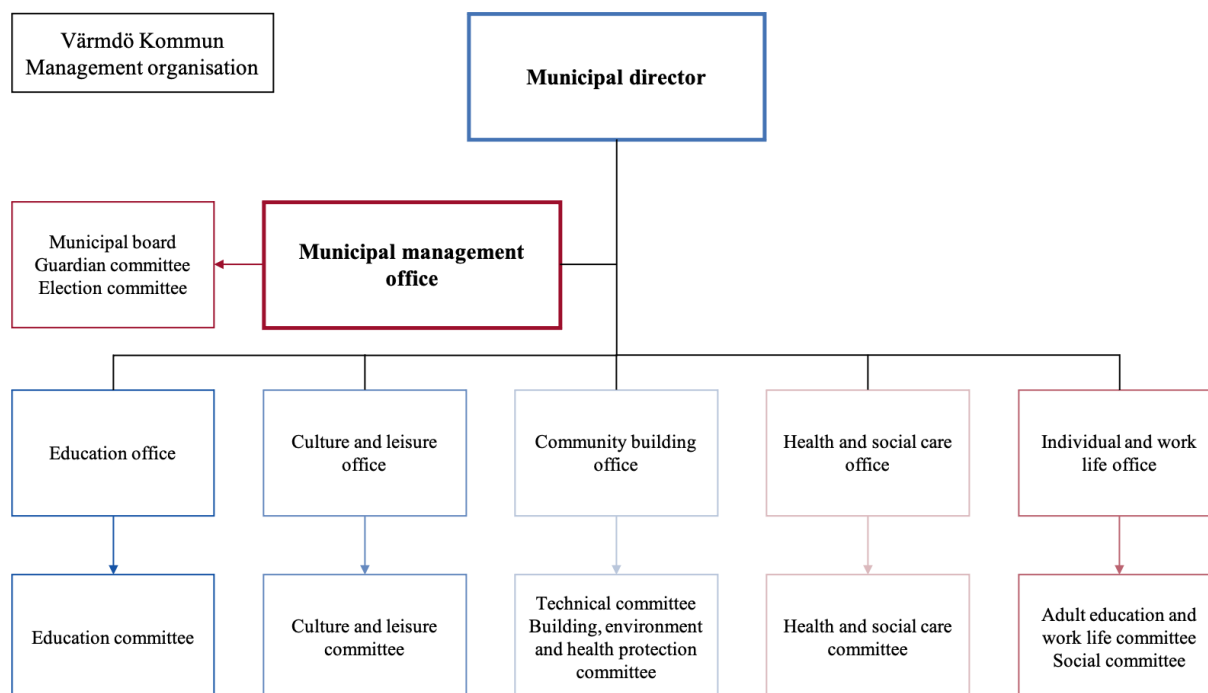
Figure 14. Scheme over Värmdö kommun's management organisation (ibid)

In this study, only the managerial organisation is of interest.

6.1.1 The Digital Transformation of Värmdö Kommun

The digital transformation of Värmdö kommun is called "Vårt Smartare Värmdö" (*Eng.* Our Smarter Värmdö). It is a relocation of the entire operations within Värmdö kommun. The municipality has a website to inform citizens about the transformation. According to the website, the purpose of the digital transformation is based on a prognosis that the older population will increase while the younger, tax paying population is decreasing. Thus, Värmdö kommun receives less tax revenues, which forces the municipality to rethink their operations. Fewer will have to do more while not hampering the service level toward the municipal citizens or businesses. Värmdö kommun needs to extract as much as possible from each tax krona, hence the municipality develops the municipality towards Vårt Smartare Värmdö, jointly (Värmdö kommun, 2021b). The purpose is based upon the prognosis of the demographic changes Värmdö kommun will probably experience. The statistics behind such prognosis can be observed in *Figure 15*, which shows the expected change in demographics (Värmdö kommun, 2021c).
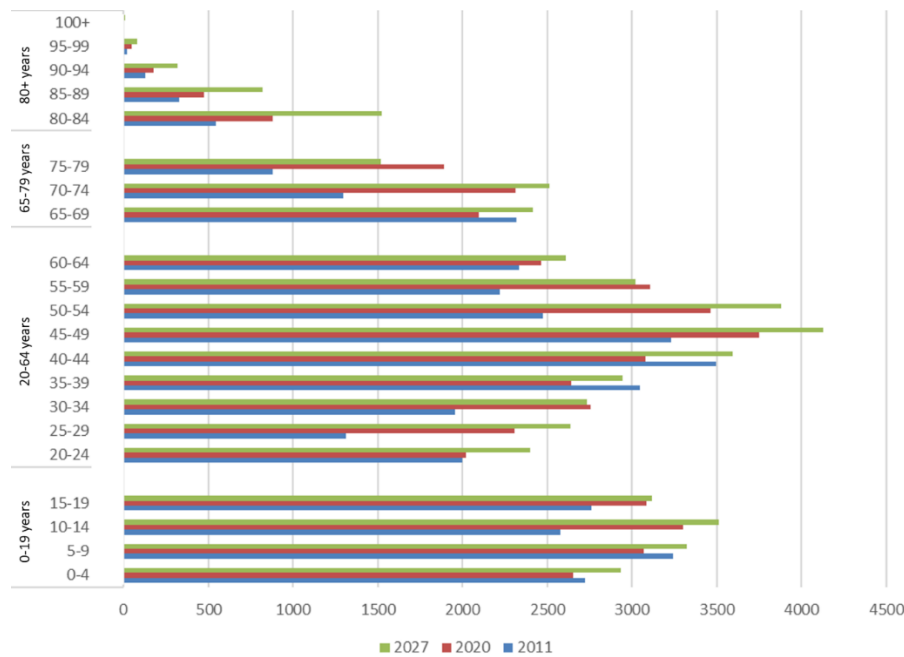
Figure 15. Prognosis of the demographic development in Värmdö kommun (ibid)

To initialise the digital transformations project, Värmdö kommun created "the hub", which is a function that should support, coordinate, and facilitate the groundwork for all initiatives within Vårt Smartare Värmdö. This is to ensure that re-inventions of already existing solutions within the project are avoided. The hub consists of consultants, strategists, project leaders, business developers, controllers, communication managers, and they are responsible for the administrations of the municipality's IT infrastructure. The hub is politically anchored and has their political assignment for the next three years. A municipal-wise portfolio steering is also being implemented at Värmdö kommun, which the municipal management office is responsible for. The portfolio steering constitutes the link between the strategic and operative levels and is also responsible for the digitalisation funding. Since the funding in the portfolio should go to digitalisation, the hub is responsible for this funding and its associated decisions. The digitalisation funding received for 2021 is 25 million SEK, for 2022 25 million SEK, and for 2023 10 million SEK. Besides this funding, additional funding for the digital infrastructure is received, and amounts to, in 2021 15 million SEK, in 2022 15 million SEK, and in 2023 12 million SEK. The funding is aimed to be issued to initiatives that vastly enhance the holistic operations, meetings and abilities that have support of digital solutions and usage of data, i.e., no management or administrative assignments are to receive funding. Moreover, the hub has created a podcast, which aims to communicate and provide citizens with a deeper understanding of the project and the work done so far. In the podcast, some prominent development ambassadors participate to explain how the progress of the digital transformation is going (Värmdö kommun, 2021b).

An initiative called "Academy" was created in conjunction with Vårt Smartare Värmdö, which is described as an important energy and competence aspect in securing the future for the municipality. The Academy aims to help managers carry the heavy load of transforming the organisation and realise the extraordinary. The Academy should help managers become smarter and stronger in the change realisation. According to the Värmdö kommun's website, the municipality cannot plan the future, they must act. To do this, the key player in the transformation needs to practice. The Academy focuses on the support structures and human competences and aspects the organisation needs to change. The standpoint is the extraordinary results (EOR), which is a keystone in realising Vårt Smartare Värmdö. The Academy should find ways to release more value and resources, without compromising quality and

services. During 2021, around 20 managers and leaders within the municipality will participate in the Academy, and the knowledge and abilities gained at the Academy will spread through these employees into the organisation so more employees can benefit from it. Executives within the hub state that the employees are the most important resource to succeed, it is thus essential to ensure that the employees have the right prerequisites, tools, and mindset (ibid).

During the transformation, Värmdö kommun together with the hub has developed a tool, which should permeate the transformation and all operations the municipality conducts. The tools are a quadrant, which is composed of a production, competence, motivation, and culture quadrant. Departments, employees, and operations should be continuously moving within the quadrant and continuously assess changes and operations according to the quadrant. It is described as a pedagogic tool, which will help facilitate the relocation Värmdö kommun is planning (Värmdö kommun, 2021d). The quadrant can be found in *Figure 16* below.

Why is the change implemented?	Which **Value** do you want to achieve?
When in time is this planned?	**Measure** – How should you measure the effect/value?
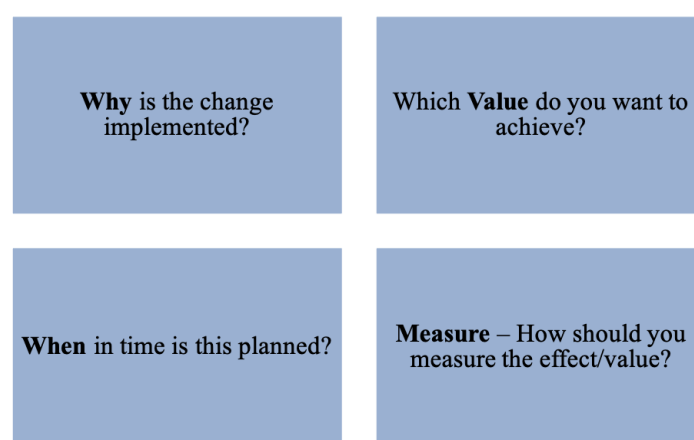
Figure 16. The quadrant used as a transformation tool (ibid)

Since the project of Vårt Smartare Värmdö began, there has been a focus on balancing management, innovation, and development. The initiative communicates that through an increased productivity, an ensured quality and efficient service delivery will be provided to the citizens and industry in Värmdö kommun. Currently, Värmdö kommun is still in the start-up phase of their digital transformation. They compare the process with building new housing areas. Their current state is field work and constructing the infrastructure. They have initialised some digital solutions at certain departments, and are presently gathering competences and resources necessary for the transformation (Värmdö kommun, 2021b).

6.2 Findings from Interviews

In the following sections, the findings from the case study interviews will be presented. These are presented according to different themes, corresponding to the theories applied in the literature review and the topics discussed during the interviews.

6.2.1 Digital Transformation's Impact on Operations

There existed a consensus among the interviewees that digital technology will alter the way the organisation operates. Processes can be simplified and automated, and a more efficient way of using resources could be obtained.

"Within a short period of time, some operations will not have to be performed by the employees. Those will be automated, and the tasks performed by employees will probably alter completely"
- interviewee E

This is confirmed by interviewee A, who states that the main idea of the digital initiatives is to remove unnecessary tasks and automate these. Several interviewees state that the digitally altered working is less time consuming. For example, journalising, which is a time-consuming process, could become more efficient. Journalising is magnified during transformations, as the number of individual errands (i.e., personal issues among the employees) increases and intensifies. However, interviewee I acknowledge that the implementation will require time and digitalisation needs training, although the end results will be beneficial. Operating interviewees experience that the employees' work has changed, while organisational structures and operations has remained unchanged. Although, this opinion is not shared among all interviewees.

"Digital technologies aim to alter the way municipalities are governed" - interviewee B

Interviewee B also states that technologies such as communication infrastructure can amass data from the environment and the municipality as a whole. The aim is that the municipality should be governed solely based on the gathered data and that Värmdö kommun will be entirely data-driven in 2025. Interviewee G agrees with this, and states that digitally immature departments will change vastly. Furthermore, there exists a somewhat joint consensus that digital technologies and digitalisation will enhance the performance within the organisation. Interviewee K suggested that performance associated with security could be enhanced through digital systems, such as salary systems.

"If digital technologies are introduced as tools for the employees, the change is perceived as positive. The implementations can then imply increased accuracy, surveillance and the possibility of reminders during operations, which entail changes and enhance value creation for involved actors"
- interviewee C

Interviewee B also suggests that digital technologies can enhance security, reduce costs and increase the security concerning external communication. This includes automatisation of invoice management. Although, automatised invoice management is an initiative "pushed out" in the organisation. This initiative is supported in the hub, which has also boosted departments-wise internal digital transformations.

Development of Digital Operations

There exists a consensus among a majority of the employees that Värmdö kommun are currently facing an intense digital development, which could imply vast enhancements in the municipality. Digitalisation is not a one-off operation, it is a continuous process requiring certain fundamental applications or data. According to interviewee B and K, the digitalisation will develop the currently non-interactive operating systems to be more dynamic. This could enable sharing features, according to interviewee A. For example, statistical outputs that can be shared with other municipalities or traffic-jam preventions.

There is a moderate difference of opinion regarding how digital development should be conducted.

"The municipality should get an industrial partner that can build a technical platform that is safe, secure and available everywhere" - interviewee A

Some interviewees express wishes to become more involved with suppliers, while others wish to have vast influence over the digital development. Moreover, two interviewees summarise two major digital development projects which have been initialised in the past, which exemplifies the difference of opinions that exist at Värmdö kommun regarding how the digital development should be conducted. One is the automated recruitment module, which was introduced at the year-end 2020, had serious faults. To find a new module, a proper scanning of the market and comprehensive process will be conducted, instead of developing the old one. Another is the implementation of Combine, an operating system, which was introduced 12 years ago, where Värmdö kommun chose to not join the developing process. Instead, they waited for the development process to finish before implementing it.

"When the system was introduced at Värmdö kommun, the reference group responsible for the project held a start-up meeting to go over the procedures of the systems. To the employees present during the meeting, the main context was that they almost would not have to work at all"
- operating level interviewee

This example implies a somewhat discontent among the operating employees. This discontent is another aspect of differences of opinion. Interviewee A proposes that the perception, at the operational level, is that digital change and development are associated with positivity and that employees have waited for this.

Issues of Digital Operations

Numerous issues were raised during the interviews. The municipality is currently quite behind in technological evolution. According to interviewee A, the municipality has been very cheap in developing the technical platform. They have not been innovative in the direction of the transformation. Interviewee K adds that some of the digital systems used at Värmdö kommun are built on a product developed during the 1980s. Thus, the system is not self-learning.

"The user needs to be brilliant for the system to work" - interviewee K

Some systems are so complex and difficult, that some managers journalise the amount of time spent in the system. Moreover, since Värmdö kommun often does not own their digital tools and systems, interviewee D believes that they are limited in their development. Technology has a cost aspect that public organisations, especially municipalities, cannot afford. Interviewee E states that digital technology is part of the solution, although the vast majority of the solution is in the organisational behaviour and problem-solving skills.

"When Värmdö kommun implements a technology, they know that it will not last forever, will be outdated shortly and is only a step in the development" - interviewee E

Another issue raised by some interviewees concerned the adaptation of digital technologies. While some initiatives contribute to their work, some have no significance at all and consume more time. Some interviewees perceive that the implemented technologies solely aim to save time for managers and decrease hourly salaries. They are not introduced to create more value for citizens.

"Employees perceive that the transformation and technologies are pushed "down" in the organisation, and that their opinions are unwanted" - interviewee C

Additionally, interviewee J raised the issue of implementing immature initiatives, which has happened

previously in Värmdö kommun. Changing both operating systems and operations could be too much for the organisation to handle, causing frustration and resistance. The transformation happens too quickly, which can cause the problems to pile up. In large organisations, these issues, frustrations and changes can increase the staff turnover. The digitally altered working could also increase demands put on employees.

Challenges with Digital Development

There are various challenges related to digital transformation. Interviewee H mentioned that the digital transformation may be obstructed due to the amount of systems already existing within the organisation, which can hamper alterations of the digital working. To implement new operations and ways of working is the main challenge when doing a digital transformation. Management needs to construct simplified processes for the managers.

> "*Besides the organisational changes and strategic movements, digital technologies develop all the time, so when implementing something, one does not want to risk it being outdated directly*"
> - interviewee D

Some digitalisation initiatives are not painless, and the systems and solutions are often more complex than anticipated. Interviewee G reckons that the learning and usage will not be an issue, and that the employee will not have to adapt to the system. One challenge when implementing new digital operations is that they often affect multiple departments, which can cause multiple-way scepticism. Thus, they have to achieve mutual trust. Although, digital development cannot be stopped and it may bring other challenges, such as the cessation of occupational groups. One respondent on the executive/strategist level states that the organisation, and management in particular, need to reassure that employees will still be relevant, but not necessarily in the same place. Some employees may feel insecure and hinder the changes.

6.2.2 Organisational Behaviour during a Digital Transformation

The behaviour in Värmdö kommun is associated with the actions made and occurring during the time of the transformation and change. The main aspects of this theme which prevailed in the interviews is communication, processes, development, and barriers.

Communication Behaviour

There exists a chasm within Värmdö kommun regarding the functioning of the communication channel and possibilities. This chasm seems to exist between hierarchical levels within the organisation. An executive/strategist interviewee proposes that while it is impossible to impose employee commitment, Värmdö kommun have begun to find a suitable structure to enable employee and citizen commitment including a model aiming to intercept ideas, initiatives and commitment. The communication initiatives proposed by the executive/strategist level interviewees do not coincide with the opinion of the employees at the operating hierarchical level.

> "*Our opinions and initiatives are irrelevant, as the executives only listen to the managers ideas. Managers only speak with employees in other offices or departments with similar positions, which hamper the input-flow from the lowest ranked in the organisation*" - operating level interviewee

On an operating level, interviewees state that changes suddenly appear without any premonition. The implemented initiatives or changes are not communicated nor is any training given. Employees far out

in the organisation have limited feedback opportunities, and have the perception that their opinions are unwanted and unheard. Such employees even have difficulty to vision how the communication should look like, due to limited influence abilities. This interviewee also points out that the operating employees are the ones meeting the citizens, but still they are the last to know about changes implemented to benefit the citizens.

"The employees far out in the organisation have not been made aware of the current transformation of Värmdö kommun. Evidently, they can look up such things themselves, however this information has not been provided by the organisation" - interviewee C

Another operating interviewee explained that there are some communication initiatives, such as reference groups, which includes non-manager employees in the discussion. Although managers always participate and have more influence. A reason for the communication gap could be that managers do not communicate what is being delivered, while employees do not express requisites. Interviewee D, working at the executive/strategist level, suggests that the lacking ownership of processes and limited inclusion of employees affected by the implementation could cause communication failures. This suggestion coincides with opinions at the operating level, which indicates that some employees at the executive/strategist are aware of the problems faulty communication brings. At the same time, interviewee D states that close dialogue is kept between system owners and developers. This implies an aim to enhance external and "hierarchical-wise" communication.

"Most of the contact between different departments and suppliers are kept between managers, while only a few operational employees are involved in the communication" - interviewee J

However, some interviewees point out the good communication effort Värmdö kommun has done. These include documentation delegates (that will have continuous contact with system developers), and the quadrant that can help facilitate communication. A few interviewees emphasised the importance of communication, transparency, availability and involving employees at early stages in the process, as well as explaining benefits to minimise concerns. The website smartarevärmdö.se, the podcast and social media is a start to achieve these aspects. However, the functioning of these communication initiatives seems to vary considering what interviewee C stated: the employees far out in the organisation have not been made aware of the digital transformation.

"Some departments have the benefit of gaining information directly from the municipal management without multiple intermediaries" - interviewee I

Interviewee I propose that the Academy is a useful tool to turn managers to carriers of knowledge. In contrast, two interviewees suggest that to find new ideas and initiatives, the most optimal process is to let employees complain about unfunctional operations, and question all their internal doings, tasks and operations.

Process Behaviour

Interviewee E proposes that no new processes or initiatives are initiated without a hypothesis of the output.

"Värmdö kommun has tried to keep up its best effort and has not changed the organisation due to that. The organisation needs to change, not continue to do what they have always done and stop doing unnecessary bureaucracy" - interviewee A

Interviewee K suggests that the municipal director wants to make the organisation more efficient to enable to extract more "money", more specifically, 3-4 times the amount invested. Restructurings of processes and the whole organisation is continuously happening, dependent on what is "modern". These interviewees are on opposite ends of the hierarchy, which provides an explanation to the different perceptions of the changes.

"There exists a discontent and fatigue regarding restructurings of processes and the organisation, which entails that employees do not have the time to set in the new structure nor react to new structures" - interviewee K

This discontent and fatigue may constitute an issue, as interviewee B states that the digital transformation is an intensive process aiming to be finished in 2025, and one main objective is to have support. Furthermore, interviewee F emphasises the importance of fast readjustment for the municipality to stay relevant. Covid-19 has actually advanced the transformation, as the organisation quickly needed to readjust and also granted the municipality to enforce changes without embedding it with politics. Two interviewees suggest that politics, governance, laws and regulations are prominent hampering factors for digital transformations. New operations would have worked, if the conditions were in place. Värmdö kommun have had an intense change and readjustment period for a long time, with managerial and organisational changes. This has hampered the development for some departments as well as normal operations, which have been magnified by simultaneous alterations of operations and digital systems. A potential effect of this is increased stress levels among employees and possible sick leaves. Even though the issues related to intense change, some departments have been able to introduce changes they have worked on for four year in a couple of months. Due to the intensified change, some departments have created employee roles with the sole mission of development. These departments have progressed further in the transformation and should be change support, according to interviewee H. Even considering the challenges these interviewees have proposed, interviewees still suggest a rapid change involving new systems, processes and operations, and that simultaneous development and change is possible if continuous follow-ups and measuring are performed.

"The conversation is limited to managers, which also entails that the employee perception is that their participation in the digitalisation and the hub is unwanted" - operating level interviewee

At the same time, one interviewee explains that employees having roles directly connected to the digitalisation is not included in the development process. Meaning that the digitalisation is part of their "regular" tasks, yet they are still not included in the process, which somewhat contradicts the statement made of interviewee G. The perception of unwanted participation exists among employees and employees working far out in the organisation perceive that their holistic participation is undesirable. To increase availability of the development, processes and transformation as a whole, the Academy was launched where the meta-model EOR is being tested. The models suggest that the organisation should work in sprints, not linear, which includes both the processes and operation as well as the organisation. Working in sprints implies rapid changes, which operating interviewees have expressed their concern regarding. Interviewee I state that having employees participating in the Academy has increased the support for managers to transact processes, implying that the aim is to save time for managers. This perception is not appreciated among the operating level interviewees, who believes that digital systems and changed processes are implemented to allow managers to keep track of employees' work.

Development Behaviour

The development to make the organisation more efficient and automated can decrease the number of employees and less used resources, which interviewee B believes can lead to better elder care. Digital development has also simplified for the citizens to find the information they need according to interviewee F.

"Currently, several departments at Värmdö kommun use few digital tools and are considered non-digital departments. Most of the digital initiatives developed in such departments include more of a digitisation or having digital archives, not digital operations" - interviewee H

Some departments apply structured ways of developing their operations. One interviewee explains that they have business days once a year, to go over all their internal processes and operations to optimise these as well as constructing action plans of future development projects.

"We have continuous feedback sessions and work with key measures that can be regularly measured. Our department also uses the lean philosophy to continuously implement improvements" - interviewee G

Some departments have no history of cooperation, as it was unwanted from the previous municipal board. Current development has changed this, and cooperation is now encouraged and a mission set by the hub.

Behaviours creating Obstacles

The interviewees identified several behavioural barriers. Firstly, in public sectors, a lot of investigations and conversations are held, but nothing happens. This causes politicians contempt and distrust to election promises. Several interviewees expressed barriers within departments, where several involved financial aspects.

"Many digital initiatives essential for certain departments have not been initiated due to limited funding" - interviewee G

Large projects have not started due that each department needed to find the funding in their own budgets. The new funding from the hub has changed this and simplified initiations. Another barrier for departments is the short-term perspective. According to a few interviewees, needs are only set for the upcoming year and development representatives are selected by managers that do not consider the long-term development plan. Furthermore, there is a risk that some departments will transform faster than others.

"There may exist some risk in the pace of digital initiatives from different departments. Although, the alternative risk would mean that the organisation would stand still and wait for all departments to catch up, which the municipality cannot afford" - interviewee E

Interviewees at the operating level feel that they are neglected during implementations of digital technologies, as concerns regarding the implementations often are ignored. For example, when the employees ask for more employees due to shortages, these requests are denied because of the expenses related to digitalisation initiatives. When initiatives are pushed down in the organisation and not

grounded with affected employees, they lose the individual perspective. Many digital initiatives are used to control the employees work, which causes a mistrust among the employees.

"The managers and executives pushing down the initiatives [in the organisation] are not aware of the operating employee's needs" - interviewee C

The mistrust among employees becomes evident when one interviewee working at the operating level described a start-up meeting for a new operating system. The system where supposed to be so efficient, almost half of the employees affected by the system will not be needed anymore. Such system implementation has created vast discontent among the employees as well as a concern regarding the employment stability.

"The system turned out to be more complex than expected and the costs of the system was much higher than expected, but the managers kept the system despite the costs and employee complaints"
- operating level interviewee

6.2.3 Organisational Barriers during Digital Transformations

Organisations can have barriers which affects their ability to digitally transform. Citizens can be one hinder.

"Some departments are less prone to change due to the citizen concern" - interviewee F

When change is implemented at departments close to the citizen, the processes are often slow and citizen preparation measures are crucial. Small changes that do not affect the citizen that much often take up to a year to implement.

Structural Barriers

During the interviews, several structural barriers for the municipality appeared. Municipalities are directed by laws and regulations, which can hamper planned changes. Public organisations have controlled resources, proceedings and demands. Thus, the organisation cannot change much according to interviewee J. Furthermore, municipalities in Sweden have decentralised steering, causing 290 different digital solutions. To develop proper data architectures is associated with large costs and complexity. Due to this, municipalities need to develop such architectures themselves, resulting in that only large municipalities have done this. The decentralisation minimises cooperation.

Each department at Värmdö kommun procure the systems they need without assuring the holistic or cooperation between systems. Such decentralised structure may hamper communication between citizens and the municipality, which is magnified by the fact that Värmdö kommun is not a category-based organisation and that Värmdö kommun is scattered geographically and organisationally.

"The vast majority of the organisation's employees do not work in the municipal business office where decisions are made, which hampers the communication as these employees do not get informed about the changes daily. It is a challenge to make all employees committed" - interviewee D

According to interviewee J, there is an abate interest to improve the organisation. Despite preparations, the organisation is not ready when implementations are launch. This can be due to managers having over 100 employees under them and heavy workloads.

"Due to that employees have limited information throughout the process causes the employees to feel like the changes are forced upon them" - interviewee J

Initiatives are pushed down from managers and executives who have little to no insights of the citizen opinion. Employees furthest out in the organisation who have knowledge about the citizens' needs and demands are discarded.

"The hub that is responsible for the digital transformation of Värmdö kommun is very distant for many employees. They do their project, which no one is aware of what that is, have their inspirational meetings, the podcast and so on, but the "normal" employees are not affected nor included in any way" - operating level interviewee

Interviewee H agrees with this statement and also proposes that the communication and transparency structures and channels are not sufficient. The employees and departments structurally located close to the hub and are situated in the municipal business office may receive the information, but the employees that are situated in other places in the municipality may not. The change responsible employees have no idea how these changes are perceived in those departments or how involved these employees are. The management needs to ensure this, and establish proper communication and transparency channels. It may be in a hierarchical way, but if this challenge is included in their work description it will be dealt with.

"Management should not believe that posts on the intranet will solve the issue or create commitment"
- interviewee H

The executive/strategist level of the municipality are aware that employees are not receiving sufficient information. The current structure of knowledge flow makes it difficult to mediate knowledge and information, causing lagging commitment.

"Several employees have been part of five to seven restructurings in three to five years. Värmdö kommun has tried all possible organisational structures existing. The reason for this is that the municipal director wants to make their mark on the organisation, and change until the cheapest way of running the organisation is found" - interviewee K

According to interviewee K, employees are tired of change and restructurings. The municipality does not account staff turnover, lost productivity and lost competence. In the last four years, there have been four restructurings in some departments and management does not let the restructuring set and see the effects of it before it is changed again.

"Management is too prone to change, have too great change visions and want to show their abilities too much, causing the organisation to be ever changing without improving it" - interviewee J

At the same, some interviewees believe that periodical procurements may decimate the amount of existing systems and structures, although this would imply more restructurings and changes. Several interviewees state that positive, committed employees may decrease the inertia and resistance toward initiative. However, this could be difficult based on previous comments made by interviewee J and K.

"A barrier Värmdö kommun experiences is the vast staff turnover, especially office executives. This has caused several departments to lag behind in digital development, and some departments are currently implementing initiatives at a rapid pace while also making large restructurings"
- interviewee I

Poorly functioning operating systems and slow implementation processes far out in the organisation may also magnify such barriers interviewee I describe. Communicating demands and needs are thus hampered and causing the change processes to be lethargic. Extensive feedback is a prerequisite to allow digital change, according to interviewee F. To implement initiatives and make restructurings can be problematic due to its complexity, which might be amplified when employees are stressed and have limited computer experience.

"Managers are unaware and uninterested of the changes and transformation, which further hinders the employees to accept the change" - interviewee J

According to interviewee J, on several occasions, employees have asked if they could postpone the transformation, which has been impossible since the manager had ordered the changes but had not made the employees aware of it. This causes a resistance in the whole chain of change, making the organisation unprone to change. When several changes occur simultaneously, the challenges related to it become too many and large to handle, causing chaotic and hectic periods with continuous issues. Interviewee K adds that there also exists a fear among employees regarding which departments that will be outsourced and dropped.

"When structures are changing due to the digital transformation, employee roles are becoming more diffuse, especially those that are supposed to work with development. The roles become more scattered and employees might feel more uncomfortable with their employment. This causes challenges regarding working uniformly and to not let the individuals decide on the development pace"
- interviewee H

Cultural Barriers

A majority of the interviewees agree that there is an inertia embedded in the organisation. Interviewee F describes that the general mindset of that it was better before exists. There exists a culture to be resistant to implementations and blame it on heavy workloads.

"New initiatives and changes are generally not welcomed" - interviewee I

The public sector culture is to create visions, missions and paper products, but nothing happens in reality. The municipality has to stop talking and start doing, it is all about pace. At the same time, the transformation is about people that need to feel safe in to change.

"The culture, incused by the multiple restructurings in recent years, causes an unwelcome environment, where few employees have trust in the transformation and perceive that the changes will not affect their departments. "Normal" employees do not think, talk or care about the transformation the hub enforces" - interviewee J

Employees that are uncomfortable with working digitally are concerned with the increasing amount of systems and automated tasks, thus not seeing the digitalisation benefits. Such employees want operations to remain the same and are afraid of losing their employment to digital initiatives. They do not see their

organisational value, according to several interviewees. Interviewee K adds that there exists a consistent conflict of achieving results and monitoring the employees work environment.

Barriers Concerning the Employee Perspective

Some managers perceive the new changes as "just another model" and have insufficient trust in the tools provided. Previous initiatives have not succeeded, which can be a result of culture and lacking knowledge.

> *"The lacking communication regarding the transformation causes employees to have trouble assimilating the transformation and feel commitment to it"* - interviewee J

Increased workloads are a result of the transformation, as structures and operations are ever changing. This causes managerial struggles to handle everyday work, which induce insecurities among employees. In this aspect, interviewee A suggests that it is important to stay firm when being criticised. At the same time, most new initiatives stem from executive/strategist levels employees, which often are not anchored in operations. This causes rapid staff turnover while also continuously minimising recruitments.

There have been a few initiatives to increase the level of feedback and follow-ups during and after a change process. However, these assignments are not prolonged due to financial aspects. The prolongation could be beneficial to allow employees to adjust to the change and enable support channels. The existing support channels do not allow continuous, developmental contact.

Economical Barriers

The reason behind the municipality's transformation is financially motivated. The demography is changing, and in a few years, Värmdö kommun will not have the finances to take care of the older population. The municipality is unable to influence the number of tax-paying citizens sufficiently to cover these increased costs, which is why they need to transform the organisation.

> *"The prognosis is to have 105% increase of citizens over 80 in a few years"* - interviewee A

The municipality has previously been forced to financially prioritise which digital technologies would be implemented, as these had to be taken out of their democratically set budgets. This has also limited the potential of feedback and follow-ups, according to interviewee G. The new funding has enabled the implementations of digital initiatives, which has been criticized by employees and the media. Such criticism is directed partly due to the fact that employees and external actors do not realise why financial resources are put on nonconcrete projects.

According to interviewee H, having to fund digital projects with their own budgets has made both doing development and normal operations impossible. However, the hub's digitalisation resources have changed this aspect and enabled the possibility to realise large projects, according to interviewee G. Although, even with the funding, new operating system introductions are often associated with issues. Employees often have to manage both ordinary operations and handling the new systems.

> *"This [system] implementation has cost tremendous amounts, and over a decade later, the system is still not finished nor working properly"* - operating level interviewee

Värmdö kommun wants to increase their business acumen, e.g., through monitoring their contracts more closely which requires an employee per department that matches the procurement role. That will

constitute a vast cost increase. According to interviewee D, an issue with this process is that management and employees see that more money is spent on employment, but it does not generate a specified profit. More resources are used, but the expected profit does not exist. Enhanced quality of contracts, assurance that the contracts are followed and potential costs related to broken contracts are obstacles that are disregarded.

Technological Barriers

The interviewees raised several different aspects related to barriers connected to technology and the limitations of current operating systems, including slow, stalling and complex processes, and an extensive number of systems. These issues are often related to the absent system communication and lacking system transmission.

"Employees should not need to have a masters degree in labour law or a PhD in IT to understand where to click in the system. The salary system was problematic each month and it needed vast education to understand all parts of it" - interviewee K

The communication infrastructure which gathers data may also have related issues, such as issues with privacy and security. The data that is being gathered has to be anonymised. The municipality will have to use the latest technology, which is not tested. This is associated with risk if 5G does not work, for example.

"The digital initiatives implemented are often not adjusted to the employees using them nor do they create value for the citizens. For employees working physically, the digital initiatives are often related to stress" - operating level interviewee

The will to change and digitalise is greater than what the technology allows, there exists a chasm. Municipal directors want to make fast, considerable changes and show his or her abilities, which can happen too quickly compared to the market existing technology. As the process is so fast, several important steps along the way are overlooked. Issues related to legal certainty and personal data security are considered mundane steps that politicians and municipal managers gladly avoid. The municipality shall have the latest technology, everything shall be digital, but the technology does not exist and the director and managers do not let it take the necessary time.

6.2.4 Strategic Agenda in Digital Transformations

The strategic agenda consists of areas such as vision, purpose, goal, and communication.

"Everyone in the municipality should do things in the same way, speak the same kind of language and do a necessary relocation with help from the tools provided" - interviewee I

Managers should be taught these tools and involve operations, analyse the present and try to understand the future. Moreover, costs of restructuring and decreasing of goodwill should be accounted for when implementing change. According to interviewee K, it is important to have a good reputation to attract workers to the municipality.

Vision of the Transformation

The interviewees raised several different aspects when talking about vision. The vision of the digital transformation is to deliver more welfare with less financial resources, according to interviewee E. The

resources used for unnecessary administrations should be used to handle the older population or make the municipality safer. Furthermore, interviewee B's utopian vision is to make 200 million SEK each year in profit when the new digital system is realised. However, if the vision is to increase public value, this might be insufficient. One interviewee state that many introduced initiatives do not work as they have not been checked with operating employees.

"It would be more functional to get rid of all digital technology and hire more competent employees to improve the municipality services" - operating level interviewee

What is currently happening is a forceful investment and effort to create possibilities for the organisation to become a good municipality for its citizens. The trend is to give the citizens more value for their tax money, while no consideration is directed to the employees. Initiatives are based upon visions that managers have constructed in their offices. Operating interviewees would like to take part in the discussion, that managers would observe the operations more before doing implementations and have the possibility to give feedback. Changes could potentially more welcomed if this was the standard procedure, according to interviewee C.

"To create more participation in the organisation is crucial, if the organisation is top-down steered the transformation will not succeed" - interviewee I

The municipality needs to have the employees on board and realise their needs. The relocation should revolve around organisational resource management, which requires a continuous dialogue with employees, according to interviewee I. Some interviewees consider that the Academy and quadrant will help realise this vision.

The vision for the future of Värmdö kommun differs vastly among the interviewees. These visions include that the municipality should be life-event or demand structured, the municipality should be citizen knowledge and assistance nodes, and increased cooperation through enhanced communication flows. A common theme among the interviewees is visions that enhance citizens' situation. Although, some interviewees express visions associated with internal strategies. These visions include introduction of strategist or category leaders that can contribute with industry and market knowledge, implementations of goal management protocols, and that administrative departments provide proactive, strategic support for managers. A few interviewees' visions were based on what digital technologies can contribute with.

"The vision is to be a complete digital municipality in five to ten years" - interviewee A

The data gathering enabled by EOT boxes will allow the municipality to build a smart city and surveillance platform that allows environmental measuring and decision support for operations managers. The gathered data should be visible, comprehensible and published as Värmdö kommun's open data platform. The vision is that all citizens will open their Värmdö-app each morning that provides them with daily information. Another respondent states that the vision is to become more app-based and communicate with society. Sometimes the organisation is limited regarding "we are going to digitalise" and do what others do. The organisation has to realise the patterns among its citizens, see the development associated with digitalisation in society and use parts of that.

"The municipality needs to break general perception of them being dull and retrograde, and stipulate themselves as an attractive employer for all generations" - interviewee D

Only one respondent expressed that environmental sustainability should be part of the vision of Värmdö kommun. Interviewee B has a vision that the municipality will provide citizens with green alternatives. This could minimise the fossil fuels used in Värmdö kommun.

Purpose of the Transformation

Several different purposes were expressed during the interviews. The changing demography is named both the purpose and the driver. The municipality will not be able to offer welfare to the older population, which requires new ways of saving resources. Thus, the transformation is necessary for the municipality to be able to provide welfare and meet citizens expectations. Interviewee A, on the other hand, referred to the prognosis as the driver of the digital transformation. Some interviewees highlighted citizens in the way they described the purpose, which includes increasing availability, enhancing in-house competence, continuously working with improvements and making resource usage more efficient. Interviewee E emphasises that the utmost important purpose is to create more value for citizens, as citizens are their employers.

The communicated purpose, according to interviewee H, of the transformation is to work smarter. Another purpose mentioned is to simplify. Several interviewees raised that the purpose of the transformation is to free time by automating administrative tasks. Many high-level employees are currently working with simple administrative tasks, and the plan is to remove these by working smarter and using alternative operations. Ultimately making the organisation become data driven, as stated by interviewee B.

The purpose behind the digital transformation is in some parts financially motivated, as the municipality needs to reduce cost based on their prognosis. One of the main ways of achieving this is to automate work processes to save resources, especially time. Interviewees expressed concerns about being replaced by digital technologies, which was especially prevalent amongst interviewees on the operating level. Concerns about being replaced or getting fired exists, but interviewees also expressed disappointment in how the transformation views them and their work.

"The purpose of the digital transformation seems to be to reduce staff and replace them with digital tools" - operating level interviewee

The impression is that digital technologies have the ability to assimilate an employee, which is perceived as offensive to them. Moreover, interviewee D emphasises that even though the implemented systems have the potential to save time, it does not save money. In fact, new digital systems have increased expenses until employees are fired.

"The digital system is in fact an increased expense until employees are fired" – interviewee D

Goal of the Transformation

In Vårt Smartare Värmdö initiative, the municipality should work together and jointly: citizens, companies and the municipality. Two interviewees on executive/strategist level emphasizes citizens in the goal of the transformation.

"The goal is to transform the organisation towards being customer driven. The needs of the citizens should organise the municipality" - interviewee A

The municipality should support processes, but not own them. Making it easier for citizens is also mentioned by interviewee F, who states that the goal is to have cloud-based solutions to simplify citizen associated processes. The municipal offering should be of high quality and accessible, but the offering should not be more than absolutely necessary. Interviewee E expressed that the goal of the transformation is to survive, and to be able to provide welfare, which becomes a democratic issue. This somewhat relates to the goal expressed by interviewee I, which is to scan the market and formulate needs. Other interviewees have stated that the transformational goal is to increase commercial and business thinking, understand the industry better, enhance internal competence and improve and plan procurement processes. Thus, the goal differs substantially, but are partly correlated to which office the interviewee works at. Another interviewee suggested that they need to apply smart businesses.

Strategic Communication

All respondents at the operating level mentioned aspects related to communication, specifically internal communication. Two interviewees stated that the purpose of the digital transformation and the hub at the municipality is unclear and unknown to many employees, and has not been communicated in a clear and constructive way. Both agree that the general perception of the transformation is non-existing, and many do not know what the hub is going to do. Some digital initiatives in the municipality raises questions for employees as to why they are implemented because they do not fulfil any purpose.

"It is just another change, which no one reacted upon" - interviewee K

The transformation would be more welcomed if there was a continuous dialogue with involved parties. Employees should get more information and knowledge about the new ways of operations, than just that a new system will be implemented. Interviewee J believes that this would simplify the process. This is also agreed upon by an executive/strategic interviewee, who states that a consistent dialogue regarding the joint focus should exist to enhance participation and motivation, and to ensure that employees are carriers of knowledge.

"*We need to visualise the wished achievement, the purpose, goals and effects the digital transformation should generate*" - interviewee D

The municipality needs to include more people in strategic positions and in development networks, and figure out which parts should be digitalised and their corresponding achievements. Before exchanging operating systems, a more comprehensive investigation should be made to cover all blind spots.

6.2.5 Governing Digital Transformations

The municipality is continuously and constantly involving everyone, according to interviewee A who is an executive/strategist. However, this is not always the case. Sometimes digital initiatives just appear and employees are unaware of the change. The organisation should consider the employees' understanding of potential benefits, which is dependent on their packaging and presentation. There is an uncertain within the municipality on how to increase citizen involvement.

Digitalisation is not a silo operation concerning implementation, it includes sustainability and efficiency aspects as well. The digitalisation initiative could save money, resources and time according to one executive/strategist interviewee. Moreover, it is important for different departments to figure out which way of working and structure that suits them. Interviewee G believes that more departments would

benefit from more structure, routines and continuous follow ups. The key is to measure, keep track of their projects and their proceedings.

Organisational Purpose

The citizens of the municipality are mentioned a lot among the interviewees. For interviewee F, the pervading theme is that the organisation should never forget who they work for, i.e., the citizens. Interviewee E states that money is not interesting, rather that citizens trust the municipal delivery and the tax money they manage. This requires a more holistic view, and to not work in pillars and prioritise.

Employees should question why things are done in certain ways and the utility of it. The utility should correspond to the value of saved time.

> "*The saved time [from altered operations] should go to the citizen, and measures should be made regarding how satisfied the customer is*" - interviewee A

They should have a smarter Värmdö with proud and happy citizens through motivated and healthy employees. Each department has to re-evaluate each effort and potentially make alterations thereafter.

The Structure of Decision Making

The most important thing during a transformation is communication and transparency. Through these, relations can be made with important employees and utilise the employees that want to participate. In this way, new ideas and suggestions are introduced in the discussion. Although, it is not necessary for all employees to embrace the transformation. Such ambition would imply that the transformation will fail.

> "*When implementing new initiatives, it is important to have different approaches, the managers cannot be the only ones steering and deciding. An operation perspective is essential*" - interviewee I

A respondent on operating level experience that all initiatives are pushed down in the organisation and employees far out in the organisation have to accept those changes. Interviewee A agrees with this issue and states that the municipality's current structure disables the communication and decision-making processes that involves employees far out in the organisation.

> "*At our department, the employees feel comfortable to express their apprehensions. However, I believe that this will not happen since it has not happened yet*" - middle manager level interviewee

The municipality has to work smart and abandon the system-oriented operation toward an information management where information is the new gold. Interviewee B emphasises the fact that digitalisation is based on agile development methods: what, why, how, and these answers have to be connected through the whole digitalisation. The hub has helped with this as well as filling in an innovation competence gap, according to interviewee H.

Transformation Governing

The new digitalisation funds should go to serious change and vast steps forward, not ordinary organisational development, according to interviewee I. The goal of the changes is often understood, but the process is unclear and answers cannot be provided directly.

"If employees are not involved in implementation, it is not a transformation, just a purchasing of new IT systems, which will not be useful at all. That will only cost more money and frustration. The initiatives have to emerge from the employees furthest out in the organisation, since they know the improvement potentials" - interviewee E

In the transformation, they work in four quadrants which requires constant movements. According to some interviewees, the transformation would fail if the squares in the quadrant is absent, as the model provides guidance in how to move people in the system, leadership to managers and current state analysis. Värmdö kommun also has a development network that includes employees from different departments. This network is constructing a transformation portfolio, which will be available to the whole organisation, according to interviewee D.

According to interviewee E, to do and innovate is not the same thing. An acting organisation has automatic processes without human impositions. Such processes do not need to be innovative. Standardisation is enabled by rule steering and may imply a relocation seen from a classic perspective. Although all operations cannot be standardised, technology constitutes a substantial part in the transformation.

"If a bad manual process is automated it will generate negative results in citizen or customer satisfaction" - interviewee E

To automatise does not necessarily mean that it will be better, it may be faster and cheaper, but not better. There is a disagreement among executives/strategists concerning the importance of changing operations, not only technology. The municipality needs to work and invest in capabilities that are smarter and part of the solution. The municipality are currently gathering development initiatives and should learn, develop and innovate. The organisation needs to be proactive instead of reactive.

Moreover, two interviewees assert the importance of leadership while undergoing a transformation. According to interviewee A, it is important to dare to stand still and show the way during a change process. Interviewee H agrees with this, while also suggesting challenges related to transformative leadership. It is difficult to support while being in a transformation. Thus, it is beneficial for the supporting department to be a bit ahead in the transformation.

6.2.6 Sustainability Aspect in Digital Transformations

Sustainability is somewhat the core concept of proper economics. The things done today should not hamper the next generation.

"Sustainability is difficult, since there are no real time measures" - interviewee E

It is difficult to know what is sustainable, as the concept is ever changing. Organisations have to rely on statistically sustainable long-term indicators. The respondent also adds that sustainability is a hygiene factor. At the same time, Värmdö kommun has severe issues with providing natural resources within the municipality. Currently, the municipality is extending the water and sewage networks, as these are deficient.

The municipality is planning on using digital technologies to improve their sustainability work in several ways. Digital technologies, such as AI algorithms, shall help minimise traffic by providing citizens with

traffic information, which can lead to more sustainable travelling. The digital technology will also provide Värmdö with real time carbon dioxide emissions data and common car routes, which can help a more sustainable city planning. This could help Värmdö kommun reach Vision 2030 that is stipulated in politics and provide carbon emissions data which is required by the EU. Furthermore, interviewee D also explains that the municipality is also currently developing an e-commerce system that shall have features to highlight sustainable products, simplifying for the customer to order sustainably.

Only one respondent mentioned social sustainability. As it is municipalities responsibility to help citizens that are outside that digital chasm, social injustice is a present matter for the municipality.

6.2.7 Key Takeaways from Interviews

Most of the interviewees agree that the digital transformation and digital initiatives will alter their operations, however to which extent differs depending on which hierarchical level the interviewees have. This agreement also applies to the development of digital operations. Regarding this aspect, several of the operating level interviewees express discontent with system development. Most of the issues concerning digital operations relates to limited technological investments that have affected current digital systems and the current implementations processes. The issues also correlate with the challenges, which regards the fast development of technologies and employee perception of digital change.

One of the most prominent behaviour issues Värmdö kommun experiences concerns the communication. Several operating interviewees witness no insights in development nor any information about the transformation. Higher ranked interviewees have different perceptions of the communication flow. The process behaviour is affected by the scarce communication as some interviewees express lacking insights in implementation processes. Inertia, slow processes and process limitations are also discussed topics. Several interviewees suggest that the hub has had a positive effect on the development behaviour. Measuring improvements are another aspect discussed. The prominent behavioural barriers concern financing, lacking initiative to involve employees and employment stability.

A substantial part of the interviews consists of discussions about hinders and barriers obstructing the digital transformation, where the prominent ones relate to inertia, resistance and lacking employee engagement due to limited communication. The structural barriers discussed are associated with political or legal hindrances, the way the Swedish municipality system is structured, and a present restructuring and change fatigue among employees. The inertia is a prevalent cultural hindrance as well. Mistrust and resistance toward rapid, rigorous change was also discussed. Seen from the employee perspective, salient barriers include struggles to handle everyday work and the transformation, and staff turnover. A consensus among the interviewees is that financing is a barrier. Some interviewees suggest that the hub has minimised this barrier, while others believe that changed operations and business acumen are minimising measures. Interviewees also witness that the technology is a barrier, as previous implementations have had severe issues. Concerns are also raised that untested technology is implemented and that digital changes are happening too quickly.

A strategic aspect raised was the potential of decreased goodwill as a result of the change process. No consensus could be identified from the visions raised by interviewees. These span from making a 200 million SEK profit to increased cooperation and communication to enhanced citizen value and welfare offering. Visions and purposes including sustainability is limited. The changing demography is a common theme, which is stated both as purpose and driver. Purposes discussed includes a more efficient

municipality, reduced costs and a data driven organisation. The expressed goals also differ substantially. A few interviewees mentioned goals such as being more customer driven and that the transformational goal regards survival. The strategic communication is lacking, which causes employees to feel excluded and to not assimilate with the transformation.

A difference of opinion between hierarchical levels exists regarding the governing. Some suggest that involving initiatives are working, while others state that they are unaware of changes. A common organisational purpose theme is citizens, and how to deliver more value for tax money. When discussing decision making, the importance of communication and transparency is identified. It is also declared from several interviewees that the communication is deficient. The discussions regarding transformation governing largely revolved around financing, development of employees and leaders, and alterations of operations.

The sustainability discussion was scarce during the interviews. This discussion revolved around how Värmdö kommun can use digital technologies to ensure environmental sustainability. Only one respondent mentioned social sustainability.

7. Discussion

In this chapter, a discussion based on the literature review and empirical findings is presented. The discussion follows the framework presented in Chapter 5 and thoroughly discuss the different aspects of the digital transformation Värmdö kommun are conducting. The chapter continues with the framework applied on Värmdö kommun as a summary of previous discussions and a discussion about the framework's potential is presented. The interviewees referred to in the subsequent texts is the semi-structured interview respondents.

7.1 Governance in Digital Transformations of Public Organisations

Governance is essential when responding to disruptions in society caused by technological developments (Janssen & van der Voort, 2016), but it has to be appropriate. Inappropriate governing can counteract digital transformation (Magnusson, 2021). For example, NPM has caused public organisations to have a reduced skill set and limitations to upgrade their IT infrastructure (Dunleavy et al., 2006). Soe and Drechsler (2018) suggest that public value governing is more applicable in a digital context in a public organisation than NPM, as it aims to improve public and social values. However, there are still challenges. Public organisations have to ensure that they use taxpayers' money optimally and avoid poor outcomes (Mein Goh & Arenas, 2020), which causes public organisations to become hesitant to take risks. This can lead to extremely high opportunity costs (Magnusson, 2021). Thus, public organisations need to learn to accept criticism from, e.g., the media (Frennert, 2021; Magnusson, 2021) which relates to agile governance learning and trial-and-error approaches. This type of governance advocates public organisations not to be afraid of public value and defend outcomes (Mergel et al., 2020). At the same time, there exists a misconception that municipalities need to be agile, and agile methods and approaches can even be counterproductive in municipalities (Magnusson, 2021). Mergel et al. (2020) agree that agile governance can be conflicting for many traditional bureaucratic organisations. Magnusson (2021) emphasises that a part of the organisation can be agile, however, a majority of an organisation needs to be stable over time. The ambidexterity, which balances stability and accountability on one side with adaptivity and accountability on the other side, is possible with adaptive governance (Janssen, 2016). As stated by Janssen and van der Voort (2016), adaptive governance can enable organisations to handle changes, while ensuring that the organisation remains stable. According to Frennert (2021), there exists a desire to become more adaptive. However, both Frennert (2021) and Magnusson (2021) agree that adaptive governance barely exists in practice. But technological developments are changing the society, which calls for organisations to become more adaptive (Janssen & van der Voort, 2016).

Municipalities are complex organisations with vast amounts of external demands (Magnusson, 2021). As society and the industry becomes increasingly digitalised, municipalities strive to follow this development (Hanna, 2016). The importance of municipal development is agreed among interviewees, who believes that municipalities need to break the general perception of them being dull and retrograde. To stay relevant, municipalities need to offer digital welfare (Magnusson, 2021), which also corresponds to a general perception within Värmdö kommun. Interviewees express that the municipality needs to do things differently and observe each operation to ensure maximised value creation and "smart" operations, which should lead to more time that unabridged goes to citizens. The increased time spent on the citizen should lead to enhanced customer satisfaction, which also is achieved through implementing technology and automatise processes, according to interviewees. To refer to citizens as customers is a textbook example of NPM, described by Hood (1991). According to Magnusson (2021), municipalities have for decades copied governing principles from the private sector, particularly logics

from product development companies. There exists an obsession to measure outcomes and throughput, and a belief that operations can be measured in the same way as car manufacturers (Magnusson, 2021). This aspect is present as interviewees express the need to measure, that measuring is a key aspect and when that the municipality should measure the potential customer satisfaction increase due to more available time. However, the concept of digital transformation is customer-oriented compared to digitisation and digitalisation (Vial, 2019), which could provide a partial explanation to why municipalities tend to drift toward the NPM governing principle when doing a digital transformation. The NPM advocates "slim management" and shifts administrative practices by promoting competition, performance measures and viewing the citizens as customers (Cordelia, 2007; Osborne, 1993; Sow & Aborbie, 2018). These features are common themes during the case study interviews, and interviewees propose that the transformation should make the municipality more efficient and automated. This would enable reduce the number of employees and used resources, and ultimately lead to better citizen care. The general theme of the case study interviews is that the organisation needs to become more efficient to maximise returns of the taxpayers' money, which also would increase the competitive position of the municipality. Ringenson (2021) suggests that digital transformations are initialised at municipalities partly due to their competitive position to be able to attract citizens and businesses.

The strive to become more efficient and increase citizen satisfaction, i.e., applying NPM governing principles, has caused a lot of inertia and poor governing. However, according to Magnusson (2021), today there exists a will to change. This "desire" is somewhat abated among some employees at Värmdö kommun. Interviewees express that there is a subside interest in improving the organisation and few employees have an interest in the digital transformation. Magnusson (2021) expresses the presence of this issue, as the desire to change may emerge from top management, which will not change the core governing.

7.2   Framework Applied to the Case Study

The digital transformation of Värmdö Kommun aims to change the municipality to become smarter, digital, and innovative. To facilitate this process, Värmdö kommun created the hub which supports and coordinates the groundwork for all initiatives. The hub is politically supported for three years and has received financial funding for digitalisation projects (Värmdö kommun, 2021b). This strategy is vital according to Magnusson (2021) to enrol a transformation. Transformations should be placed on an outreaching function offering the transformation, which prevents the cost of digital initiatives to be placed on departments operating funds. This has the ability to reduce thresholds with the introduction of digital initiatives (Magnusson, 2021). However, the interviewees have different perspectives on the hub. Some consider it useful while others feel it is unconnected from the organisation and struggles to see the purpose. This somewhat relates to communication deficiencies, as interviewees express that neither the purpose of the transformation nor the purpose of the hub has been expressed in a clear way, and many do not know what the hub is going to do.

As stated by Bharadwaj et al. (2013), digital transformations can improve the efficiency of processes, which, according to Tabrizi et al. (2019) relies on technologies, but more importantly on employees. At Värmdö kommun, interviewees express limited trust and uncomfortable feelings towards the hub and the digital transformation. Kane (2019) associates increased trust in leaders with the progress toward digital maturity. Thus, with limited trust towards the leaders of the transformation, the transformation could be stalling. This risk could increase due to part failure of involving employees and realising that the transformation cannot be one dimensional, but rather occur in an ecosystem (OECD, 2016). Moreover, several interviewees described multiple new initiatives that will be implemented at Värmdö

kommun. Some express positive feelings about this, and one interviewee stated that some initiatives that have been latent for years have suddenly been initialised in a couple of months. Others feel like the implementation happens too quickly without sufficient testing. According to Frennert (2021), this could constitute an issue. A strong will to transform can result in initiating several projects at the same time, which can become too much for organisations to handle (Frennert, 2021). This statement is in line with what Vial (2019) suggests is one of the most salient barriers for digital transformations: resistance.

7.2.1 Vision

The interviewees stated multiple different visions regarding the digital transformation and the future of Värmdö kommun. Although these might be a mixture of personal desires regarding the vision, most of these differ vastly compared to the vision stated in Vårt Smartare Värmdö (Värmdö kommun, 2021c). Moreover, the vision stated both by the interviewees and in Vårt Smartare Värmdö is quite diffuse. Externally, the municipality state that the vision is to become a smart municipality (Värmdö kommun, 2021c). Internally, the vision is to become a digital municipality within five to ten years. However, as can be seen from literature (Höjer & Wangel, 2015; Hollands, 2008), the concept "smart" is difficult to define and even more difficult to comprehend. Thus, having such diffuse concepts composing a substantial part of the vision might make it difficult for involved actors to understand the reasoning behind the transformation and what the municipality actually wants to achieve. On the other hand, Ringenson (2021) suggests that a vision can be utopian. This can be associated with diffuse concepts, although taking the direction of being unachievable. To have an unachievable vision is not necessarily connected to being diffuse, which argues for the use of utopian visions. Several interviewees confirm that diffuse vision might hamper the understanding of why the municipality is doing a digital transformation and what it will bring. Moreover, Pihir et al. (2018) suggest in their table of determinants, that the vision is a significant aspect for assessing and progressing toward digital maturity. This could imply that since the same vision does not permeate the organisation or the transformation, that the progress toward digital maturity because of the digital transformation is limited due to the vision.

7.2.2 Purpose

As mentioned in the framework in *Chapter 5*, the purpose of transformations has to be specific and should correlate with the aimed value creation. A purpose that aims toward increased value for citizens or employees has the potential to reduce resistance towards change in the organisation (Frennert, 2021). The purpose of the digital transformation of Värmdö Kommun is "to do more with less" (Värmdö kommun, 2021c), which matches the characteristics of NPM described by Hood (1991). Frennert (2021) highlights that the ambition of digitalising should reflect on other value creations, and not just to improve efficiency. Värmdö kommun bases their purpose of the digital transformation on a prognosis which, according to Ringenson (2021), will influence, e.g., investments or what plans the municipality moves forward with. These will be different compared to if they were based on goals (Ringenson, 2021). While neither is better than the other, it is important to understand that they affect plans differently. In Värmdö kommun, this has resulted in a large focus on saving resources through implementing digital tools.

In Värmdö kommun the perceived purpose of the digital transformation differs internally. Interviewees describe the purpose as creating more value for citizens, work smarter, simplify, free time by automating administrative tasks, or replace staff with digital tools. Interviewees also perceive the communicated purpose of Vårt Smartare Värmdö both as the purpose and as a driver for the transformation. This could indicate that the purpose of the transformation does not permeate the organisation. This also shows that several purposes of the digital transformation with different value creations exist within the

municipality. Interviewee A states that the main idea is to remove unnecessary tasks and atomise these, which can create value according to Kramers (2021), as tasks that are not meaningful are removed by using digital technologies. However, the interviews indicate that the aim of implementing digital tools to remove unnecessary tasks is, on one hand, to free time which would enable employees to work with tasks that creates value for citizens, and on the other hand to replace employees with digital technologies to reduce costs. This is perceived as offensive to employees, and many do not see their own organisational value and are afraid of being replaced. The objective of Vårt Smartare Värmdö is based on a prognosis. This led to the aim to reduce resource usage to be able to provide welfare in the future. Thus the prognosis based plan of the transformation is in some cases to reduce costs by replacing employees with digital technologies (Värmdö kommun, 2021c).

7.2.3 Proposition

According to the framework presented in *Chapter 5*, the proposition is the description of how the achieve the purpose. The purpose for Värmdö kommun is to reduce resource usage (Värmdö kommun, 2021b), which implies that the proposition is to reduce costs and increase efficiency. Digital transformation requires an initial investment. Magnusson (2021) mentions that public organisations are hesitant to take risks with taxpayers' money, however, they do not understand that the opportunity costs are extremely high. Värmdö kommun realise that the municipality needs to invest in smarter capabilities and are currently gathering development initiatives. As previously mentioned, Värmdö kommun aims to save resources and money by implementing digital initiatives and realising the digital transformation (Värmdö kommun, 2021b). Although, doing a digital transformation is a very cost-intensive process, requiring substantial financing (Tabrizi et al., 2019). While the transformation intensive phase is relatively short, spanning over three years, no money will be saved during this process. According to interviewee D, the municipality employees are somewhat persistent to the structural changes and investments needed, as the profit does not occur directly and is solely seen as increased expenses. This interviewee also states new digital systems implies increased expenses until employees are fired, as their job can be performed by digital technologies. Kane (2015) argues that cost savings can be obtained through digital transformation. Although, this impact can be obtained by less management needed by the IT department, for example (Kane, 2015). One possible interpretation of this statement is that these employees are no longer needed, which can somewhat be confirmed by Vial (2019) who states that increased human capital is unnecessary when digital technologies are implemented (Vial, 2019).

Moreover, it is important to understand the distinction between efficiency and innovation (Magnusson, 2021). The municipality mentions both innovation and efficiency as means to reach the purpose of the transformation, and desires to implement both. However, these require different governing and conditions, as efficiency is governed with a perceived constant state, while innovation has no governing. Moreover, innovation requires a decrease in efficiency, which goes against aims towards optimal efficiency. In a short time frame, innovation just requires resources (Magnusson, 2021). Värmdö kommun's desire to be innovative somewhat contradicts their purpose to save resources, at least in a short time frame.

7.2.4 Reality Check

The aim of the reality check is to ensure that new digital initiatives or transformations are thought through internally as well as externally desired and anchored before further steps are planned. This is partly inspired by Magnusson (2021), who emphasises that digitalisation can support most domains but it has to be done properly. Magnusson (2021) further adds that several initiatives towards citizens can

be perceived as strange, which municipalities should realise beforehand. Furthermore, the literature mentions the importance of feedback channels and grounding the transformation within the organisation (Teece, 2018; Frennert, 2021; Vial, 2019). The transformation is only partially accepted by the organisation and several interviewees express a mistrust regarding the transformation. This aspect seems to be unknown by interviewees of higher hierarchical positions. Furthermore, the external feedback could ensure that citizens do not perceive implementations as strange and that the municipality wastes their tax money. Mangusson (2021) suggests that municipalities need to be brave when implementing new initiatives. By having external feedback loops, this threshold could potentially be minimised as well as ensure that tax money is not wasted on non-value creating initiatives. The issue that citizens experience initiatives as strange or unnecessary is raised by one operating interviewee, which also implies that Värmdö kommun are partially unaware of citizen demands.

Internally

Digital transformations are 80% about people, practices, processes and organisational structure (Ruud, 2017), and the chance of succeeding with a transformation is dependent on the mindset and willingness to change and adapt (Tabrizi et al., 2019). Interviewees on the executive/strategist level highlight the importance of engaging employees for the transformation to be successful and that there is no transformation if employees are not involved. Moreover, initiatives should emerge from employees furthest out in the organisation as they have knowledge about potential improvements. At the same time, interviewees on the operating level experience that their opinions are unwanted, and both the transformation and digital technologies are pushed down in the organisation. Sometimes, digital initiative just appears. Employees have little to no insight into what changes the municipality is doing. The hub and the transformation are distant and no "normal" employees think, reflect or care about it. The employees' participation seems unwanted, which indicates that the employees do not have conditions for the right mindset to transform. According to Tabrizi et al. (2019), this can cause the transformation to fail. Interviewees on the operating level wish to be more involved in the digital transformation, and for the organisation to acknowledge the employees' understanding of the potential initiatives.

Furthermore, some of the prominent barriers to digital transformations and changed value creation paths are resistance and inertia (Vial, 2019). Several interviewees expressed that inertia is present at Värmdö kommun. The routine rigidity, stemming from an unwillingness to alter patterns and processes (Kelly & Amburgey, 1991), becomes evident as two interviewees state that there are been five to seven restructurings in three to five years while also stating that the transformation and digitalisation of Värmdö kommun most likely will not affect the employees. According to Teece (2018), feedback channels are important during digital transformations and constitutes an important factor to develop dynamic capabilities. Feedback channels could make managers and executives more aware of employees' situations. These channels are absent at Värmdö kommun, as interviewees at the executive/strategist hierarchical level state that the transformation is welcomed and associated with positivity and that Värmdö kommun has kept up best practices and not changed the organisation due to that. This implies that the leaders of the digital transformation are not aware of the general perception of the transformation nor how the constant change of the organisation has affected the employees in the last couple of years.

Externally

The external loop includes actors which will use the service or potential collaborations and involves both identifying desires of citizens as well as identifying partners, e.g., industrial partners, universities, or other actors. These can enable digital transformations. What is essential for municipalities to do

before searching for collaborations with partners is to decide what they want (Frennert, 2021; Magnusson, 2021). When they have formulated their needs, they can scan the market for potential partners and available technologies. One of the aims distinguished from the interviews is the goal to increase value for citizens. Thus, according to Frennert (2021), the transformation needs to be externally rooted. However, the desires of citizens can be hard to identify, and it also requires citizens to know what they want. Both Frennert (2021) and Magnusson (2021) described digital initiatives which municipalities perceived to be valuable, however, when implemented, citizens are not interested at all. Frennert (2021) also adds that most citizens just desire to have a properly functioning municipality, feel safe and have limited time and interest to engage further.

The external loop includes potential collaboration partners. As municipalities have limited resources to experiment, collaboration with universities could be beneficial, as the role of universities is to experiment (Ringenson, 2021). Moreover, scientists usually have no aspiration to earn money and can provide a different weight in their analysis compared to, e.g., consultants (Magnusson, 2021). Municipalities located near universities are in higher degrees a part of innovation hubs that have the ability to enable municipalities to continue with their ordinary operations, while at the same time experiment with disruptive changes (Frennert, 2021). As Värmdö kommun is located in the Stockholm region, which has many universities, this is something Värmdö kommun could utilise. However, it is important to realise and understand that research is slow, and could result in uncertain, negative, or unfavourable conclusions which could conflict with the desires of municipalities (Ringenson, 2021).

Interviewees express a wish to collaborate with an industrial partner that can develop a platform, but there are challenges for municipalities with such collaborations. Municipal regulations may hinder them from finding cooperation partners, as in public and municipal directions, certain processes are regulated and cannot be changed by the organisation. This creates a barrier for creating new value creation paths and can prevent municipalities from freely choosing an industrial partner.

7.2.5 Transformative Dynamic Capabilities Tools

According to Lammers et al. (2018), there are several tools and prerequisites necessary to successfully transform an organisation (Lammers et al., 2018). Vial (2019) suggests that digital technologies are a fueling factor for a digital transformation and can be used to create new value creation paths. They can also be used to respond to digital environmental changes (Vial, 2019). Värmdö kommun has considered this aspect, as they have a substantial funding for digitalising their operations (Värmdö kommun, 2021b). Additionally, several interviewees at the executive/strategist hierarchical level describe what technologies will be implemented, what they will do for the organisation, and how the municipality will become a more efficient organisation by the use of digital technologies. While some respondents at the lower hierarchical levels disagree with some benefits the technologies might bring, the fact that digitalisation could improve organisations and align their operations with society development exists in literature (Vial, 2019; Hanna, 2016; Sebastian et al., 2017).

While digital technologies often are a fuelling point stemming from society, Ruud (2017) suggests that only 20% of a digital transformation concerns technology and the rest is about people, practices, processes, and organisational structures (Ruud, 2017). Other researchers propose that there are several dynamic capabilities needed to digitally transform (Weritz et al., 2020) and that dynamic capabilities are of such significance that they might be the tipping point between a successful digital transformation and organisational failure (Helfat et al., 2009; Teece, 2018; Warner & Wäger, 2019). In fact, some researchers propose that the high failure rate of digital transformations is because organisations fail to

understand that digital transformation is about people, not technologies (Tabrizi et al., 2019). During the interviews, a common theme among the interviewees of the higher hierarchical levels is the importance to include employees, that there is a relocation of people in the organisation, and the urgency to derive digital initiatives from operating personnel. Although, this point of view is not perceived in the same way according to the interviewees of lower hierarchical levels. They witness hierarchical chasms, non-functioning communication, non-supporting leadership, and hindered possibilities to raise issues, initiatives, or feedback. Concurrently, Vial (2019) points out that there are several structural changes necessary to transform an organisation. This includes changes in culture, leadership, and employee roles and skills (Vial, 2019). Interviewees also suggest that communication and transparency are the most important factors during transformations, which Frennert (2021) agrees with, who states that communication is essential in transformations to facilitate the change and reduce resistance. Communication also embraces transformative capabilities, as these aim to align existing capabilities and investments in additional capabilities (Teece, 2018).

Värmdö kommun has lagged in their digital development according to several interviewees, which can provide logic to why substantial investments and efforts are put on digital technologies and initiatives (Värmdö kommun, 2021b). However, considering the fundamental differences in statements made by interviewees of contrasting hierarchical levels, Värmdö kommun seem to be missing substantial parts in their digital transformation. Tabrizi et al. (2019) suggest that if the organisation has flawed processes and practices, and employees with amiss attitude and unwillingness to change, the digital transformation will most likely fail and magnify these flaws. The perceptions regarding the transformation differ to a considerable extent and present disunited progress of different transformative dynamic capabilities tools in the transformation could imply that the transformational performance may be decreased, considering the statements made in the literature.

Communication

According to Frennert (2021), communication about the purpose of the transformation is necessary to facilitate change. Communication also embeds change in all levels of the organisation (Frennert, 2021). Interviewees at the executive/strategist level agree with this statement and claims that Värmdö kommun continuously and constantly involves everyone. Digital technologies can help facilitate a simplified communication through mediation strategies, which could help the organisation to have close connections internally and externally (Andal-Ancion et al., 2003). Kramers (2021) agrees with this simplification and suggests that digital technologies are tools to be used by employees. There exists a need to improve the communication in Värmdö kommun, and one way to do that is by the use of digital technologies. This need is expressed by operating level interviewees, who say that the management needs to establish proper communication and transparency channels, and that the existing channels are insufficient. This is confirmed by several interviewees, stating that employees far out in the organisation have not been made aware of the current digital transformation of Värmdö kommun. However, there are some employees at various departments that propose that the changes implemented all stem from their department and that the communication with executives is functioning. Interviewee G states that all change initiatives and transformations emerge from the departments, not from operational executives. Although, these departments are all situated in the municipal business office, which can be a factor simplifying the communication. This aspect is confirmed by other interviewees, who states that employees and departments structurally located close to the hub and that are situated in the municipal business office may receive the information, but the employees and departments that are situated in other places may not.

Two of the most salient organisational barriers to digital transformations is resistance and fear of

replacement among employees (Tabrizi et al., 2019; Vial, 2019). At the same time, the digital transformation at Värmdö kommun emerges from the top management. According to interviewees, the top management have idea how changes are perceived by employees and that managers and higher ranked employees take no regard for the operating personnel's ideas and opinions. This is affirmed by interviewee K, who also states that there exists vast discontent and fear of employment stability when new changes are introduced. There are also concerns regarding the information and knowledge flow in the organisation, which is hampered by multiple intermediaries. Vial (2019) proposes that the way new initiatives are introduced may be an aspect resulting in resistance. This aspect is confirmed in the empirical findings as changes are dependent on their packaging and presentation. The resistance stemming from insufficient communication is prevalent as interviewees state that it would be more functional to get rid of all digital technology and hire more employees. Interviewee J shares experiences concerning employees expressing wishes to postpone transformations, due to the managerial failure to communicate the changes. This causes resistance in the whole chain of change. Furthermore, interviewee K expresses that a present fear exists among employees due to the uncertainty whether their department will be outsourced or dropped as a result of the transformation. According to interviewee J, the reason for this is the lack of communication regarding the transformation as well as the communication being limited to managers, which entails that employees perceive that their participant in the digitalisation and the hub is unwanted. Researchers propose that resistance can be a result of lacking long-term perspective and visibility of advantages and benefits, which can also be associated with absent communication. These researchers propose that involved actors will gain more understanding of the process (Svahn et al., 2017; Vial, 2019), which interviewee K agrees with and proposes that employees need to be carriers of knowledge and information, which makes internal communication essential.

Digital Technologies

According to Vial (2019), digital technologies are a fuelling factor for digital transformation. Digital technologies often emerge from the industry or society and push the digital transformation, causing the organisation to strategically respond to the digital environmental development (Vial, 2019). Scientists suggest that municipalities need to follow this disruption by offering digital welfare to stay relevant (Magnusson, 2021). Porter and Hepplemann (2014) also propose that digital technologies can help organisations to adapt to societal and environmental development, which confirms the relevance factor proposed by Magnusson (2021). Researchers suggest that ICT is a digital technology that can help organisations stay relevant and it can be favourable due to its transformative characteristics. They also propose that ICT is a critical component and tool in e-governments, digital governments, and smart cities (Hanna, 2016; OECD, 2016). The aspect of integrating digital technologies in the organisation, its governing and development is discussed by some interviewees. Interviewees suggest that the data gathering will facilitate a smart city platform and that digital technologies should alter the way the municipality is governed, which will be done through ICT. ICT and process infrastructure is a substantial determinant in assessing the digital maturity of an organisation (Pihir et al., 2018). Since Värmdö kommun has substantial funding for digital initiatives, such as developing ICT (Värmdö kommun, 2021b), as well as having a set plan for the development, Värmdö kommun are well on its way toward digital maturity in this aspect. Although, the excitement and explanations of the ICT and advanced digital technologies are limited to a few interviewees at the executive/strategist level. Frennert (2021) proposes that this can be an issue. Implementing digital technologies often occurs incrementally and is driven by enthusiasts. The issue begins when the transformation is scaled up (Frennert, 2021).

Furthermore, ICT and other technological infrastructure have the potential to go beyond the organisation and have positive effects for whole societies (Hanna, 2016; Almarabeh & Abuali, 2010; Hollands, 2008),

which can be is seen in the conceptual framework of public value creation proposed by Panagiotopoulos (2019). The framework suggests that efficiency, accessibility, transparency, and accountability can be improved by integrating digital technologies (Panagiotopoulos et al., 2019). However, assuming that digital technologies decrease costs and usage of resources can be problematic according to some interviewees. Integrating technologies such as ICT are associated with vast investments. Interviewees express concerns regarding the cost aspect of technologies public organisations can purchase and finance, and states that the technologies implemented at Värmdö kommun most likely will be outdated shortly after the implementation. This is an aspect Kramers (2021) disagrees with and instead suggests that it is vital to consider that technologies need to be managed and updated. There are also contradictions within Värmdö kommun regarding the possible technology implementations. Some interviewees state that the municipality cannot implement technology that risks being obsolete directly, i.e., a complete contradiction to what others stated. At the same time, others propose that the municipality continues to purchase the latest technology that is not sufficiently tested. Hence, there is no uniform opinion regarding which technology will be implemented and present disunity regarding the level of digitalisation among the departments. Some departments are developing complex communication infrastructures, while others still have paper products instead of digital ones. However, the digital transformation and which technologies should be implemented are decisions vastly managed by the hub. This aspect solves the implementation-decision issue to some extent, although several interviewees express their discontent to not be included in this process.

Magnusson (2021) proposes that having an outreaching function and not using operating funds when doing a digital transformation is essential. Having another fund for digitalisation can reduce thresholds (Magnusson, 2021). This aspect is covered by the hub and its associated additional funding (Värmdö kommun, 2021b). According to interviewees on the executive/strategist level, the hub has a plan and a purpose for what the new technology should contribute to. This implies an endogenous opportunistic view of disruptions, meaning that new value creation paths are enabled (Sebastian et al., 2017; Vial, 2019). Digital technology itself contributes with little value (Vial, 2019), which Kramers (2021) agrees with as digital technologies can remove insignificant tasks. The technology itself has a less prominent role; it is a tool (Kramers, 2021). This correlates with the proposition made by Vial (2019), who states that the context in which technologies are used is the actual value contributor. Värmdö kommun has a plan regarding this context, meaning that, in theory, they should bring value. However, to which degree this is established among the organisation's employees are divergent, as some operating level interviewees would prefer to get rid of all technologies and replace them with more employees. This could imply that the digital implementation occurring at Värmdö kommun constitutes an exogenous threat instead of an endogenous opportunity, as some employees experience the technologies to be forcing them to digitally transform (Sia et al., 2016). The usage context of digital technologies at Värmdö kommun and the value it could bring may also be hampered by the fact that employees have to adapt to the technologies. Interviewees state that some digital technologies implemented have no significance in their work. This is an issue according to Frennert (2021), who emphasises the importance of adapting technologies to the employees for them to be useful. Some interviewees agree with this, and states that if employees are not involved in this the municipality has only purchased a new IT system. Another aspect to maximise that value creation of implementing new digital technologies associated with the involvement of employees is the correlation between enhanced IT competence and financial performance (Sambamurthy et al., 2003). The increased competence could emerge from increased employee engagement, while absent engagement could lead to increased transformation resistance, according to Frennert (2021). The issue of engagement among the employees is salient at Värmdö kommun, and there exists a difference in opinion regarding the development of digital technologies.

Leadership

According to Frennert (2021), it is important to embed the transformation among the employees and avoid a top-down approach (Frennert, 2021). This is confirmed in the literature, which also states that leadership is the second most crucial factor for a successful digital transformation (Kane, 2019). A common theme during the case study interviews is the absent interest among managers to inform their employees about changes and the transformation, and about the transformation itself. According to Kane (2019), the need for digital leadership is more important during the early stages of a digital transformation. When an organisation is digitally immature, research suggests that the organisation often experiences a leadership gap and that employees express the need for new leadership (Kane, 2019). Some interviewees express that managers struggle with handling everyday work simultaneously with the transformation. This causes insecurity among the employees, and several interviewees suggest that there exists a distrust among the employees about the transformation. Vial (2019) highlights that leaders need to develop their capabilities to handle the disruptions stemming from the transformation, which several interviewees propose that the current managers are incapable of. One interviewee expresses that there is an abate interest to improve the organisation, an initiative that should emerge from leadership through inspiration.

Literature also highlights the importance of implementing leadership roles, such as CDOs or CIOs, which can solidify the strategic aspect of the transformation (Singh & Hess, 2017; Haffke et al., 2016). Instead of introducing new leadership roles, Värmdö kommun created the hub, which is an outreaching team responsible for the transformation (Värmdö kommun, 2021b). This results in that Värmdö kommun does not own the transformations themselves, as this process is owned by a group of consultants and strategists. This issue is explained by Magnusson (2021), who states that the digital strategy cannot be outsourced to externals. The strategy needs to be owned by the organisation itself to work. The organisation needs to build competence in digitalisation and transformation with its employees (Magnusson, 2021). The hub is an outreaching team that, according to themselves, are responsible for the transformation and knowledgeable about the organisation. However, several interviewees express that there is a distance between the hub and the organisation. They perceive that their participation in the transformation is unwanted. The statements made by Magnusson (2021) and several interviewees somewhat contradicts what Kane (2019) and Weritz et al. (2020) suggests, which is to increasingly organise around cross-functional teams, which the hub can be considered to be. This type of leadership seems to be unsuitable for Värmdö kommun. In Värmdö kommun, the hub introduced a quadrant tool, which to some extent is built upon measuring and aims to guide the digital transformation (Värmdö kommun, 2021d). Frennert (2021) suggests that increased planning, which often is an effect of digitalised schedules increases the stress level among employees. A consensus among the operating level interviewees is that digital initiatives increase the stress level, as they perceive it as managerial controlling measures. Thus, having a substantial measurement aspect in the transformation tool, which should be utilised by leaders and management during the transformation, implies an increased stress level among the employees. Sow and Arborbie (2018) suggests that organisational members need to get in the right mindset and accept the transformation for it to succeed (Sow & Aborbie, 2018), which is a responsibility substantially allocated to leaders (Kane, 2019). Thus, having employees experiencing high stress-levels with limited trust in leadership and the transformation does not increase the chances of a successful digital transformation.

However, Värmdö kommun has initiated a project to enhance and develop leadership, the Academy (Värmdö kommun, 2021b). There exists a consensus among the executive/strategist and middle manager level interviewees that this initiative will enable a structure to involve employees and develop managers.

This initiative is more in line with the structural attribute of cross-functionality Kane (2019) suggests is important in a digital transformation process. The Academy can also be associated with new value creation paths, especially value networks, which Vial (2019) claims is prominent. Several interviewees with higher hierarchical positions esteem the Academy, partly due to reasons literature highlights, but also as it might reduce the gap between hierarchical levels and lessen the number of intermediaries. Although, the most salient reason for creating the Academy is to simplify for managers, which, according to several interviewees, currently has an impossible work situation. Despite this initiative, several operating level interviewees propose that they have not experienced enhanced digital or transformative leadership.

7.2.6 Value

Value is the result of the transformation and should be value creation for citizens, employees, or sustainability. The transformation does not need to only create value for one single actor, as individual technologies and services can address even competing values (Rose et al., 2015). Värmdö kommun is, with their digital transformation Vårt Smartare Värmdö, aiming to improve the way they are using financial resources to provide welfare to elderly in the future. The purpose falls, thus, more under NPM governing (Hood, 1991), than value creation of public value (Moore, 1995). On the other hand, several interviewees mention the importance of providing and increasing value for citizens. Additionally, the purpose of the transformation can be perceived as an aim to create value in the future as the ability to provide welfare becomes a democratic issue. Value is also mentioned in the quadrant developed by the hub, which looks at value creation (Värmdö kommun, 2021c). However, value creation for employees and sustainability are in large parts neglected.

As previously mentioned, the purpose of Värmdö kommun is to reduce resource usage (Värmdö kommun, 2021b). However, efficiency can result in negative effects on sustainability. For example, making traffic more effective and reducing traffic jams using digital technologies, can cause more people to use cars and thus increasing emissions (Ringenson, 2021). According to interviewee B, this is one initiative the municipality is planning to do. This indicates that the sustainability aspect of the value creation at Värmdö kommun is insufficient.

Frennert (2021) proposes that it is important to reflect on the value creation, what value should be created and whether it aims to create value for citizens or employees. This could reduce the resistance (Frennert, 2021). As previously mentioned, a common consensus among the interviewees was that the transformations should bring more value to the citizens and reduce resource usage to free more time to support citizens. Several interviewees also suggested that by being customer-driven, Värmdö kommun could create more value for their citizens. However, there exist conflicting perceptions among the interviewees regarding what value the transformation actually will bring. Interviewees at the operating level are more sceptical to the value creations, as they see how the implemented initiatives affect citizens. Their perception is that the initiatives do not bring any value. As mentioned previously, researchers propose that digital technologies bring little value themselves, it is within their context the value is created (Vial, 2019; Morakanyane et al., 2017). Considering the statement of the operating interviewees, the context in which these digital initiatives are implemented seem deficient. Moreover, no increased value toward the employees is initiated or planned, while Vårt Smartare Värmdö suggests that that value should be created through motivated and healthy employees. If the value only includes citizens, the aim to have motivated and healthy employees may be hampered by the absence of employee perspectives.

7.2.7 Governing Principle

Following the framework presented in *Chapter 5*, governing principles permeate each step of the digital transformation. The transformation at Värmdö kommun and the organisation itself has several governing principles. The purpose of Vårt Smartare Värmdö is to improve the efficiency of resource usage to provide welfare in the future which strongly relates to NPM. Interviewee E even describes the purpose as "doing more with less" which identically corresponds to Hood's (1991) components of the NPM governance. The elements of NPM could be problematic in digital transformations and in a digital context, other governing principles are preferred (Soe & Drechsler, 2018). NPM has reduced the capabilities of public organisations to digitalise (Dunleavy et al., 2006). Thus, this governing can impact the digital transformation at Värmdö kommun. At the same time, components of public value exist. Several interviewees also mention increasing value creation for citizens as a goal. In public value, this is what public managers should aim for (Moore, 1995), and it can be found in Värmdö kommun. The same applies to how Värmdö kommun views citizens. Citizens are mostly described as customers, which relates to the business mindset of NPM (Osborne, 1993). At the same time, citizens are also described as stakeholders, which relates more to adaptive governance (Gunderson & Holling, 2002).

Elements of adaptive and agile governance could facilitate digital transformation. Several interviewees raised issues with top-down steering. Initiatives are "pushed down" in the organisation without knowing employees' needs. Changes suddenly appear, and there is a limited ability to provide feedback, and employees closest to citizens are not involved. This is problematic as participation is crucial to digitally transform. Moreover, the communication between offices is limited to employees only communicating with others at a similar position, hampering the input flow from lower levels of the organisation. These issues could be addressed by implementing adaptive governance. As described by Janssen and van der Voort (2016), adaptive governance enables organisations to become decentralised and implement bottom-up decision-making structures, allowing initiatives to come from employees furthest out in the organisation. Värmdö kommun expresses a wish to become more adaptable and innovative, which adaptive governance facilitates (Janssen and van der Voort, 2016). Värmdö kommun have influences of an adaptive governance mindset and are aware that the organisation will continuously need to adapt to technological developments.

As Magnusson (2021) stated, if changes emerge from top management, the core governing will not change. This issue can be confirmed when comparing the interviewees' statements dependent on their hierarchical level. Middle managers express that employees are comfortable with expressing apprehensions, but believe that this will not happen since it has not occurred yet. Executive/strategist interviewees perceive that changes are associated with positivity and that employees have waited for digital change. The managerial perception is that most employees are welcoming and positive toward the current changes. However, there seems to exist a chasm between these hierarchical levels. Operating interviewees state that initiatives are pushed down from managers and those disregards the operating employees' knowledge and insights as well as that managers are unaware and uninterested in the changes and transformation. This further hinders the employees to accept the change. According to Tabrizi et al. (2019), the main reason why digital transformations fail is due to the mindset of employees and managerial failures to realise that the digital transformation is about the people in the organisation (Tabrizi et al., 2019). This proposition is confirmed by Frennert (2021), who states that it is important to embed the transformation among employees in the organisation and avoid a top-down approach. Everyone should feel involved and convinced by the transformation (Frennert, 2021). These features, based on statements made by operating personnel, seem to be missing in Värmdö kommun. However, since Värmdö kommun has approximately 3000 employees and municipalities have such a variety of

operations, achieving uniform involvement and acceptance may be difficult to obtain. Which also interviewees confirm, and state that it is impossible to impose employee commitment.

7.3   Summary of Discussion

The framework presented in *Chapter 5* is used to summarise the sections above. The framework is based upon academic findings and is now applied in a practical context. The framework is thus not changed, but rather used to analyse the current state of the digital transformation occurring at Värmdö kommun. Since the municipality has already begun their digital transformations, the framework could be utilised to identify strengths and weaknesses in the transformation and if the framework could have been beneficial for the organisation to use. In *Figure 17*, the framework applied to the current state of Värmdö kommun's digital transformation is presented. In the applied framework, strengths and weaknesses of the transformation can be observed, which is based upon the sections above. In *Table 5*, a short comment regarding the ranking of each step is presented. The rankings are green, yellow and red. Green corresponds to an appropriate understanding or implementation of the step. Yellow corresponds to a somewhat or partial understanding or implementation of the step. And red corresponds to substantial issues, challenges and lack of understanding or implementation of the step.
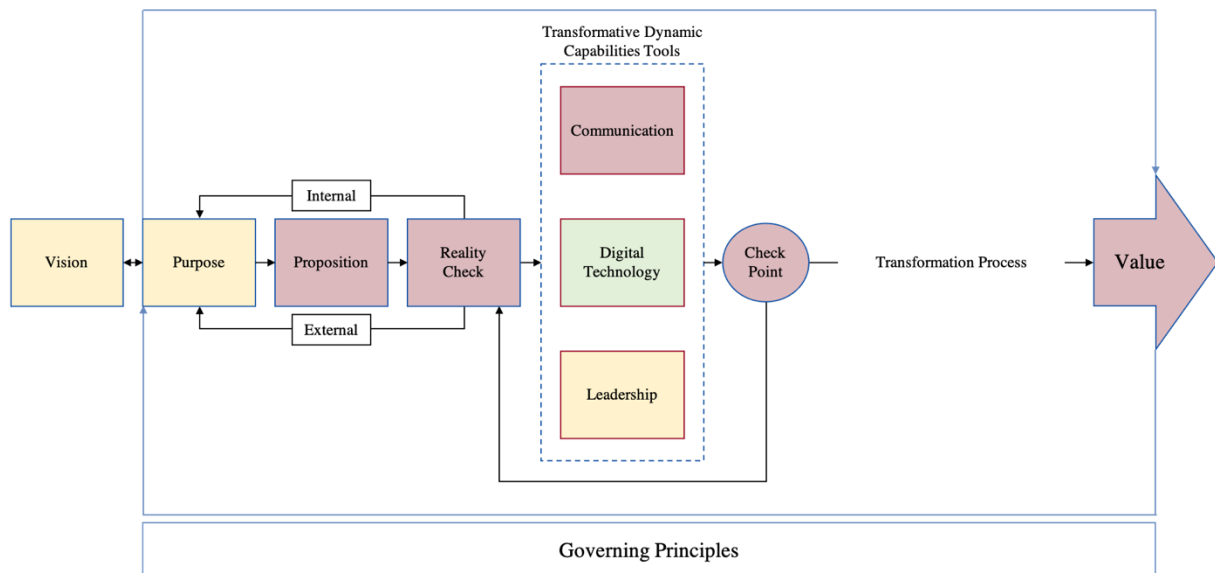

Figure 17. The framework applied on the current state of Värmdö kommun

Table 5. Explanations and motivations of the applied framework

Step	Rating	Comment
Vision	Yellow	*Some visions are formulated. However, they do not permeate in the organisation or transformation*
Purpose	Yellow	*A purpose is formulated. However, it is weak which has not been established in the organisation. The purpose is not based on the value*
Proposition	Red	*The proposition is not connected to the purpose*
Reality Check	Red	*The transformation and changes are not anchored in the organisation*
Communication	Red	*The communication gets worse the further out you get in the organisation. No functioning communication channels exist*
Digital Technology	Green	*Substantial investments are made on digital technology and a clear implementation plan exists*
Leadership	Yellow	*There exist some initiatives to help managers in the change process. However, there exists several managers that do not fully believe in the transformation and struggle to handle it*
Check Point	Red	*Värmdö kommun do not have check-ups to ensure that all steps in the transformation is functioning*
Value	Red	*The values for citizens exist, but is absent for employees and sustainability. The value and purpose do not correspond*

Based on the preliminary application of the framework, several findings are made about Värmdö kommun and the framework. Värmdö kommun have several weaknesses in their digital transformation which needs to be addressed for the transformation to be successful. The most pressing one concerns communication, feedback channels and value. The most prominent strength concerns digital technologies, where they have a clear plan regarding the development. However, this strength seems to be limited to a few employees within the organisation, which can make scaling the technologies difficult. Since the framework could be used in a practical context, the framework has the potential to be a helpful tool for municipalities in their digital transformations. As the digital transformation is stalling at Värmdö kommun, the framework could potentially be beneficial for them to address transformational weaknesses.

The framework is constructed from an academic perspective and applied in a practical context. It was presented to the hub at Värmdö kommun. They were positive towards the framework and its potential implications, indicating that several issues could be identified and potentially addressed using the framework. As of now, the framework only presents a holistic view of the initial phase of digital transformation. To further improve it, each component of the framework could be described in more detail, and perhaps include criteria to facilitate the ability to practically implement it. Moreover, the framework needs to be tested on more digital transformations in municipalities and public organisations in general. Public organisations which have not started their digital transformations would be beneficial to evaluate how the framework impacts digital transformation, as well as analyse if it facilitates the transformation process and can increase success-rates of them.

8. Conclusion

In this chapter, the conclusions are presented. Reflections on findings and execution of thesis are presented. The chapter concludes with practical and theoretical implications, limitations and recommendations for future research.

RQ1: How does governing principles in public organisations affect their abilities to transform their operations as society becomes increasingly digitalised?

Public organisations have the ability to digitally transform their organisations without considering governing principles, however, governing principles affect how spot on, optimal or successful the transformation is and what value creation the results bring. The opportunity costs of poorly designed initiatives could be enormous.

RQ2: Does adaptive governance enable municipalities in their digital transformation, and if so, how?

Adaptive governance may not solely be the solution to successful digitally transform municipalities. However, adaptive governance can help the municipality observe the transformation from a holistic, ecosystem perspective. Adaptive governance has the ability to solve many issues present in digital transformations of municipalities. However, without methods it is limited in practice. Combining adaptive governance with other more comprehensive governing principles, e.g., agile governance, can ensure this enabling.

RQ3: Does digitalisation enable municipalities to work with sustainability, and if so, how?

Digitalisation on its own will not enable municipalities to achieve sustainability. Digital technologies are tools that municipalities can use to work with sustainability. Nevertheless, there has to be an understanding of direct and indirect effects which impact sustainability aims.

8.1 Reflections of the Findings

There are several interesting factors that can be reflected upon. This includes the financial aspects of digital transformations in public organisations, as well as the constant restructurings municipalities has experienced in the past. However, as these do not contribute to the holistic view, these are not investigated further in the reflections.

Public organisations should aim to create more value for their citizens, which should imply that public value governance is the prominent governing principle within these types of organisations. However, the results of this thesis show that NPM is still rooted in municipalities. It is concerning that this governing principle still has such significance in public organisations, especially considering the statement made by the Swedish government. It is problematic to have the business mindset of NPM advocate, especially since it is associated with production companies, which differs substantially from organisations providing services. It is eye-opening that even though NPM is associated with several deficiencies, it still exists. The potential adaptive governance has in public organisations are impressive. Consider its learning abilities and acceptance of trial-and-error could imply that it is suitable for digital transformations, as the processes require learning, adaptation to technological developments, and the future uncertainty of the digital society. Despite its potential, adaptive governance is limited in practice. It lacks specific methods and is quite vague compared to, e.g., agile governance, which makes it difficult

to use. Thus, it often is combined with agile governance despite potential conflicts. Due to the nature of adaptive governance, it is easy to see the theoretical benefits, however, its functioning in practice is uncertain. This could be a reason why adaptive governance is an academic product and not widely seen in practice. It is important to consider the practical implications of theories, otherwise, the research will not be beneficial for society.

One interesting observation made from the semi-structured interviews is that some operating level interviewees stated that stress levels have increased among the employees as a result of the digital transformation and rapid implementation of digital technologies. This aspect is somewhat highlighted in literature and suggested by scientists. However, this is an aspect highly emphasised among the interviewees. This aspect can be compared to how most people act during stressful times in everyday life. When humans are stressed, most people are not willing to learn new things, change our proceedings and accentuate teamwork. Thus, when employees at organisations who, even without the transformation, have a hectic work life, are introduced to substantial organisational and operational changes and tools, it is somewhat understandable that the resistance could increase. Although, since Värmdö kommun, among other municipalities, experience significant inertia and inefficiency, alterations to their business need to happen. This highlights the importance of communication, internal feedback, and employee care.

Moreover, when doing a transformation, it is vital to understand the difference between efficiency and innovation, and what conditions both need to optimally exist. Being an innovative organisation is perhaps not an aim that should be of interest for a public organisation. The amount of slack and inefficiency is a huge risk of taxpayers' money, especially considering that innovation might not lead to value creation. To be innovative, organisations need to be brave, and when handling taxpayers' money, this risk might not be considered appropriate. However, municipalities are permeated with inner inertia which can be utilised to innovate. The organisation can use the inefficiency which already exists to be innovative, where the purpose of the innovation is to increase efficiency. Thus, municipalities can become innovative organisations while at the same becoming more efficient, if the innovation is aimed to improve the efficiency of existing processes.

One interesting observation during the semi-structured interviews is that only one municipality worker mentioned social sustainability. Sustainability does not only include environmental sustainability, but also other perspectives. For municipalities whose responsibilities are citizens, social sustainability should be a priority. Thus, it should also be a priority to consider when conducting a digital transformation. Digital technologies can in some cases push people outside of society, e.g., people without means to own digital devices, and increase the digital divide. This is problematic as it can create social injustice, which will affect municipalities or governmental agencies as it is their liability to deal with these issues. Additionally, sustainability in general, is a topic the interviewees did not discuss extensively during the semi-structured interviews. As can be seen from *Chapter 2*, digital technologies could help the path toward a more sustainable organisation. While a few interviewees mention this and one interviewee considers sustainability to be fundamental, most interviewees did not mention it. Furthermore, municipalities still have influences of NPM governing, which aim to improve economical values, e.g., profits. Value creation for citizens and sustainability can be considered to be soft values and more difficult to measure. Thus, such values could be neglected in municipalities as the input-output relation is not as obvious. Another aspect to consider is that NPM was developed during the 1990s. At that time, sustainability did not have such a significant impact as it has today. These could be factors that can impact municipalities' sustainability work.

8.2 Reflections from a Broader Perspective

Another aspect to consider when observing the transformation state of municipalities is other external factors that could stall or hinder the transformation. Such a factor is Covid-19. A potential effect Covid-19 could have on the transformations is the ability to develop transformative dynamic capabilities tools. Digital technologies could be developed and implemented while working remote. However, capabilities such as leadership and communication are more difficult to develop and obtain remotely. As seen from the literature review and discussion sections, leadership and communication are substantially based on trust, mutual understanding, involvement, feedback meetings and so on. The fundamentals of obtaining such capabilities could be considered to require physical presence. At the same time, enormous private companies scattered all around the globe manage to digitally transform, thus happening remotely. In this aspect, the difference between private and public organisations becomes salient. Magnusson (2021) suggests that public organisations are more complex with significant incorporated inertia. As public organisations are more complex and have more external responsibilities, a complicated relocation of the organisation, i.e., the digital transformation, could become almost insuperable when occurring remotely. Despite hindering factors, some of the interviewees expressed positive thoughts associated with the pandemic, as they describe that some technical solutions have progressed due to Covid-19. Although, most of these are associated with the transformative dynamic capabilities tool of digital technologies.

Furthermore, as can be seen from *Chapter 6* and *7*, there exists a chasm associated with the perceptions of the digital transformation occurring at Värmdö kommun dependent on the interviewees' hierarchical level. A digital transformation is a complex concept, as can be seen from the inability to even define the concept. At the same time, to digitally transform is "modern", and at times considered vital to stay relevant. This could imply that organisations proceed with digital transformation without fully grasping what they are facing. A simple solution to the limited knowledge and insights is perhaps to use buzzwords, the use of which, solves the issue to further explain decisions or actions. However, using buzzwords such as smart, strategic relocation, agile, sprints, efficiency and so on may cause a chasm between the leaders of the digital transformation, i.e., the executive/strategist hierarchical level, and the employees. When leaders use such words, which may be used to motivate, employees that are not as comfortable with such words may be confused, resistant and unwilling to follow directions. This could further emphasise the present feeling that employees do not own the transformation as well as it might solidify the hierarchical differences in the organisation.

In many cases, digitalisation can improve operations, systems, accuracy and security as well as creating an ability to track operations. For salary systems, this implementation with these goals can be beneficial, and increase value creation. However, these goals might not fit in care or school departments, for example. The ability to track operations allows organisations to learn about their processes and improve them, but when it comes to face-to-face services such as care, the individual perspective can disappear. Each individual is different, and even though the median for, e.g., showers is 10 minutes, not everyone prefers that. The flexibility which employees working with people need can disappear and become a checklist of processes which has to be performed in a certain amount of time. The value for caretakers, e.g., extra few minutes in the shower, is discarded. It is, thus, important for public organisations to understand and handle data with care, and to use it for the right purpose. Otherwise, the individual perspective and value creation for citizens can be affected.

8.3   Execution of Thesis

One of the main challenges when writing the thesis was the ongoing pandemic. As several recommendations regarding restrictions existed, limitations were set concerning meetings with supervisors, time spent at the case study organisation, digital interviews and remote seminars. This also affected the authors' possibility to work at the same place. Regarding the possibility to have personal meetings with supervisors, the case study organisation and seminars, this may have affected interpretations and the ad hoc, continuous feedback. Instead, this feedback occurred when demanded, which might have hampered the stakeholder's insights into the thesis' progress. As previously described in *Chapter 3*, the digital interviews may have minimised the risk of biases. Although, interpretations that only can be obtained when meeting physically was absent as well as the spontaneity during the interviews. Moreover, the limitations on working at the same place was a challenge in the beginning, as recommendations were stricter and setting the scope of the thesis was difficult to do remotely. However, this was a learning process and as the thesis progressed, the authors learnt how to deal with this issue as well as have certain checkpoints where physical meetings were held (in a safe manner). Furthermore, another challenge in the thesis was constructing the theoretical frame. As digitalisation and governing principles are large concepts, which is hard to delimit as they incorporate a vast amount of aspects within each area. Thus, the thesis has a holistic perspective on digital transformation in public organisations.

One of the main academic contributions in the thesis is the framework covering digital transformations in municipalities. One of the most prominent strengths of the framework is that it further developed and increased the understanding of the challenges Värmdö kommun faces and how these correlates. The framework was not anchored with Värmdö kommun, but shown to them. However, the framework is developed from the literature review and in-depth interviews with scientists. The framework was used to analyse the digital transformation of Värmdö kommun, showing that it can be applied in a practical context. Furthermore, the framework could potentially be used for other types of transformations, besides digital transformation. Exchanging the transformative dynamic capabilities tools of digital technologies to another dynamic capability that might be more relevant in such sorts of transformations. However, even though the organisation is not performing a digital transformation, digital technologies often constitute a substantial part of businesses today, which could argue for keeping this aspect. As can be seen from the literature sections in the thesis, leadership and communication are two essential aspects covering multiple dynamic capabilities needed for an organisational change. The first loop of the framework is also relevant in other forms of changes. Thus, it is arguable that the framework could be used on other types of transformations, which also increases the generalisability of this finding. Moreover, as stated in the description of the framework, the vision of the digital transformation could be utopian. There is a risk that the vision loses its relevance if the vision is perceived as unattainable. At the same time, having a utopian vision to work toward might increase motivation, because the utopian vision does not limit the imagination. Withal, as the organisation most likely will not reach such visions, it could be defeating to work toward such an idea. The reason that the vision could be utopian is to not limit the organisation in their future endeavours, where their transformation could take them or how they wish to govern their municipality. Nevertheless, depending on the extent and type of transformation, the vision might need to be grounded in reality. Although, concepts such as smart cities are often considered to be utopian visions and cities still aim for that vision. In the framework, gaining sufficient realism could be obtained through the external and internal feedback loops.

8.4   Practical Implications

The need for municipal digital transformation is evident, both in research and practice. Municipalities have realised that they need to alter their operations and organisations to stay relevant. Thus, the enabling and simplifications measures available to digitally transform is crucial, considering the high failure rate of transformations. Given the research in this thesis, municipalities often illustrate governing following NPM while aiming to create more value for citizens. The correlation between vision and value has to be associated as well as their permeation within the organisation. Municipalities should harness the benefits of governing principles and carefully consider which principle or principles are the most suitable for each transformation and transformation step. They should emphasise the importance of governance as well as how procedures and processes should be aligned with the governing principle. Moreover, municipalities should use adaptive governance to enhance their sustainability work. Research shows that they correlate. Since sustainability is a pressing issue for public organisations, they should utilise all support they can get.

This research identified three critical tools within the area of dynamic capabilities which are necessary to transform. With grounding in literature, the importance of communication and leadership cannot be overstated. Hence, municipalities should accentuate efforts and investments associated with these two areas. The transformations will otherwise most likely be stalling, encounter resistance or get reduced impact. Municipalities should have workshops, appropriate channels where employees can raise opinions and initiatives, regular rigorous feedback sessions, cross-functional teams, encourage risk-taking and experiments, and promote continuous learning. By measures such as these, the municipality will involve more employees in the transformation as well as ensure that the transformation is aligned with the inclination of the organisation.

8.5   Theoretical Implications

The theoretical implications of this thesis have been partly covered in previous sections. The thesis mainly contributes to the area of digital transformation in public organisations and governing principles. Research regarding these two aspects exists, however, jointly investigated in the context of this thesis is limited in previous research. To specifically investigate if governing principles can align their development with societal digital development trend and if adaptive governance can be an enabler as well as the aspect of sustainability is limited in previous research. As society becomes more digitalised, public organisation must keep up with digital development. Thus, the thesis fills a knowledge gap as well as provides insights into a subject that is relevant and important. The research also investigates the subject within a Swedish context, which is absent in existing literature. Furthermore, there exists research on how digitalisation can enable sustainability applied on a Swedish municipality, although this research does not include a case study on a single municipality currently experiencing issues related to progressing digitalisation and stalling sustainability work. The thesis thus fills this knowledge gap as well.

Moreover, there exists scarce knowledge regarding how digital transformations in municipalities should be prepared. A guideline or framework regarding the step, enablers, barriers and effects of governing principles for municipalities is lacking. Such frameworks or guidelines exist for private companies. The thesis contributes with knowledge in this field of research, as well as giving practical implications on how such a framework can be used in practice.

8.6 Limitations

Due to time constraints, a limitation of this study was that only 11 interviews were conducted at the case study organisation. The participants in the case study interviews did not have an equal distribution between men and women, as only two of them were male, which might have hampered the empirical findings. The study is also limited as no time has been spent at the case study organisation. Due to Covid-19, spending time at Värmdö kommun was not possible. All interviews have also been held via Zoom or Microsoft Teams, which might have limited some interpretations of the interviews which only can be obtained when doing interviews in person.

Furthermore, the thesis has not researched the whole transformation, only the initial phase. This is due to time constraints, as the transformation at Värmdö kommun is planned to span over three years. This might have limited the study, as some problem areas might have been emphasised or understated dependent on the transformational progress.

8.7 Recommendation for Future Research

This thesis has researched the primary phases of a municipal digital transformation as well as enablers and barriers toward the transformation. The thesis fills a gap in research regarding how a municipality should prepare their transformation, what the main obstacles and enablers are and how governing principles can help enable a transformation. The thesis does not investigate how the actual transformation should occur in practice. To investigate the process for municipalities to transform their operations would be interesting to research in the future. Most of the existing literature concerns how private companies should digitally transform their organisation. However, as can be seen from this thesis, private and public organisations are vastly different. Thus, there exists a knowledge gap regarding this subject as well.

Moreover, as the thesis has not investigated the actual transformation of a municipality, another suggestion for future research would be to map which governing principles are the most suitable for specific transformation processes. Since the governing principles have a substantial impact on processes, having a guide or similar regarding which governing principle is suitable where would be helpful for municipalities.

References

Alford, J. & Hughes, O. (2008) Public Value Pragmatism as the Next Phase of Public Management. *The American Review of Public Administration*, 38 (2), pp.130–148.

Almarabeh, T. & Abuali, A. (2010) A General Framework for E-Government: Definition Maturity Challenges, Opportunities, and Success. *European Journal of Scientific Research ISSN*, 39, pp.29–42.

Andal-Ancion, A., Cartwright, P.A. & Yip, G.S. (2003) The Digital Transformation of Traditional Businesses. *MIT Sloan Management Review*, 44 (4), pp.34–41.

Anderson, D. & Anderson, L.A. (2002) *Beyond Change Management: Advanced Strategies for Today's Transformational Leaders*. John Wiley & Sons.

Anthopoulos, L.G. & Reddick, C.G. (2016) Smart City and Smart Government: Synonymous or Complementary? In: *Proceedings of the 25th International Conference Companion on World Wide Web*. WWW '16 Companion. Republic and Canton of Geneva, CHE, International World Wide Web Conferences Steering Committee, pp.351–355. Available from: <https://doi.org/10.1145/2872518.2888615> [Accessed 16 March 2021].

Batley, R. & Larbi, G. (2004) *The Changing Role of Government*. London, Palgrave Macmillan UK. Available from: <http://link.springer.com/10.1057/9780230001053> [Accessed 8 March 2021].

Bharadwaj, A., El Sawy, O.A., Pavlou, P.A. & Venkatraman, N. (2013) Digital Business Strategy: Toward a Next Generation of Insights. *MIS Quarterly*, 37 (2), pp.471–482.

Bloomberg, J. (2018) Digitization, Digitalization, And Digital Transformation: Confuse Them At Your Peril. *Forbes*, pp.1–6.

Bongiorno, G., Rizzo, D. & Vaia, G. (2018) *CIOs and the Digital Transformation: A New Leadership Role*.

Boyle, M. & Kay, J.J. (2001) MONITORING IN SUPPORT OF POLICY: AN ADAPTIVE ECOSYSTEM APPROACH. , p.48.

Brewer, G.A., Neubauer, B.J. & Geiselhart, K. (2006) Designing and implementing E-government systems: Critical implications for public administration and democracy. *Administration and Society*, 38 (4), pp.472–499.

Broucker, B., Wit, K.D. & Verhoeven, J.C. (2018) Higher education for public value: taking the debate beyond New Public Management. *Higher Education Research & Development*, 37 (2), pp.227–240.

Cabral, S., Mahoney, J., Mcgahan, A. & Potoski, M. (2019) Value Creation and Value Appropriation in Public and Non-Profit Organizations. *Strategic Management Journal*, 40 (4), pp.465–475.

Carcary, M. (2009) The Research Audit Trial–Enhancing Trustworthiness in Qualitative Inquiry. *The Electronic Journal of Business Research Methods Volume*, 7, pp.11–24.

Cedergren, A., Swaling, V.H., Hassel, H., Denward, C., Sonnek, K.M., Albinsson, P.-A., Bengtsson, J. & Sparf, A. (2019) Understanding practical challenges to risk and vulnerability assessments: the case of Swedish municipalities. *Journal of Risk Research*, 22 (6), pp.782–795.

Chaffin, B.C., Gosnell, H. & Cosens, B.A. (2014) A decade of adaptive governance scholarship: synthesis and future directions. *Ecology and Society*, 19 (3). Available from: <https://www.jstor.org/stable/26269646> [Accessed 18 February 2021].

Chang, H., Mikalsen, K.S., Nesse, P.J. & Erdal, O.B. (2020) Digitalization of Municipalities Through Ecosystem Collaboration. *Nordic and Baltic Journal of Information and Communications Technologies*, 1, pp.117–158.

Chen, Y.-C. & Hsieh, T.-C. (2014) Big Data for Digital Government: Opportunities, Challenges, and Strategies. *International Journal of Public Administration in the Digital Age*, 1 (1), pp.1–14.

Copeland, D. (2013) Digital Technology. *The Oxford Handbook of Modern Diplomacy*, August, pp.1–14.

Cordelia, A. (2007) E-government: Towards the E-Bureaucratic Form? *Journal of Information Technology*, 22 (3), pp.265–274.

Cordella, A. & Bonina, C.M. (2012) A public value perspective for ICT enabled public sector reforms: A theoretical reflection. *Government Information Quarterly*, 29 (4), pp.512–520.

Cordella, A. & Willcocks, L. (2010) Outsourcing, bureaucracy and public value: Reappraising the notion of the "contract state" | Elsevier Enhanced Reader. *Government Information Quarterly*, 27, pp.82–88.

Cuno, S., Bruns, L., Tcholtchev, N., Laemmel, P. & Schieferdecker, I. (2019) Data Governance and Sovereignty in Urban Data Spaces Based on Standardized ICT Reference Architectures. *Data*, 4 (1), pp.1–24.

Davenport, T.H. & Westerman, G. (2018) Why So Many High-Profile Digital Transformations Fail. *Harvard Business Review*, March, pp.1–5.

Dietz, T., Ostrom, E. & Stern, P.C. (2003) The Struggle to Govern the Commons. *Science*, 302 (5652), pp.1907–1912.

Duarte, C.H.C. & Ebert, C. (2018) Digital Transformation. *IEEE Software Technology*, 35 (4), pp.16–21.

Dudovskiy, J. (2018) Research Design [Internet]. Available from: <https://research-methodology.net/research-methodology/research-design/> [Accessed 16 March 2021].

Dunleavy, P., Margetts, H., Bastow, S. & Tinkler, J. (2006) New Public Management Is Dead—Long Live Digital-Era Governance. *Journal of Public Administration Research and Theory*, 16 (3), pp.467–494.

Farquhar, J. (2012) *Case Study Research for Business*. 1 Oliver's Yard, 55 City Road, London EC1Y 1SP United Kingdom, SAGE Publications Ltd. Available from: <http://methods.sagepub.com/book/case-study-research-for-business> [Accessed 17 March 2021].

Finansdepartementet (2018) Tillitsbaserad styrning i välfärden – idag tog civilminister Ardalan Shekarabi emot Tillitsdelegationens huvudbetänkande - Regeringen.se [Internet]. Available from: <https://www.regeringen.se/pressmeddelanden/2018/06/tillitsbaserad-styrning-i-valfarden--idag-tog-civilminister-ardalan-shekarabi-emot-tillitsdelegationens-huvudbetankande/> [Accessed 17 May 2021].

Frennert, S. (2021) In-depth interview with Susanne Frennert.

Frennert, S. (2019) Lost in digitalization? Municipality employment of welfare technologies. *Disability and Rehabilitation-Assistive Technology*, 14 (6), pp.635–642.

Gunderson, L. & Holling, C. (2002) *Panarchy: Understanding Transformations in Human and Natural Systems - Lance H. Gunderson - Google Böcker*. Washington DC, Island Press. Available from: <https://books.google.se/books?hl=sv&lr=&id=o4u89akUhJMC&oi=fnd&pg=PR7&ots=ef1xdpoRWC&sig=AXkwoXrJfv1GtkzzjpBCm3MeCL4&redir_esc=y#v=onepage&q&f=false> [Accessed 10 May 2021].

Gunderson, L.H. (2001) *Panarchy: Understanding Transformations in Human and Natural Systems*. Island Press.

Haffke, I., Kalgovas, B. & Benlian, A. (2016) The Role of the CIO and the CDO in an Organization's Digital Transformation. In: *ICIS 2016 Proceedings*. Dublin, Ireland. Available from: <https://aisel.aisnet.org/icis2016/ISStrategy/Presentations/3>.

Haffke, I., Kalgovas, B. & Benlian, A. (2017) The Transformative Role of Bimodal IT in an Era of Digital Business. In: pp.5460–5469. Available from: <http://hdl.handle.net/10125/41822> [Accessed 25 February 2021].

Haggerty, E. (2017) Healthcare and digital transformation. *Network Security*, 2017 (8), pp.7–11.

Hanna, N.K. (2016) Why ICT-enabled Transformation? In: *Mastering Digital Transformation: Towards a Smarter Society, Economy, City and Nation*. Emerald Group Publishing, pp.15–40.

Hansen, R. & Sia, S.K. (2015) Hummel's Digital Transformation Toward Omnichannel Retailing: Key Lessons Learned. *MIS Quarterly Executive*, 14 (2), pp.51–66.

Hatfield-Dodds, S., Nelson, R. & Cook, D. (2007) Adaptive Governance: An Introduction and Implications for Public Policy. *Australian Agricultural and Resource Economics Society, 2007 Conference (51st), February 13-16, 2007, Queenstown, New Zealand*.

Helfat, C.E., Finkelstein, S., Mitchell, W., Peteraf, M., Singh, H., Teece, D. & Winter, S.G. (2009) *Dynamic Capabilities: Understanding Strategic Change in Organizations*. John Wiley & Sons.

Hennink, M., Hutter, I. & Bailey, A. (2020) *Qualitative Research Methods*. SAGE.

Hess, T., Matt, C., Benlian, A. & Wiesböck, F. (2016) Options for Formulating a Digital Transformation Strategy. *MIS Quarterly Executive*, 15 (2), pp.123–139.

Höjer, M. & Wangel, J. (2015) Smart Sustainable Cities: Definition and Challenges. In: L. M. Hilty & B. Aebischer eds. *ICT Innovations for Sustainability*. Advances in Intelligent Systems and Computing. Cham, Springer International Publishing, pp.333–349.

Hollands, R.G. (2008) Will the real smart city please stand up? *City*, 12 (3), pp.303–320.

Hood, C. (1991) A Public Management For All Seasons? *Public Administration*, 69 (1), pp.3–19.

Jakob, M. & Krcmar, H. (2018) Which barriers hinder a successful digital transformation in small and medium-sized municipalities in a federal system? *Central and Eastern European eDem and eGov Days*, 331, pp.141–150.

Janssen, M. & van der Voort, H. (2016) Adaptive governance: Towards a stable, accountable and responsive government. *Government Information Quarterly*, 33 (1), pp.1–5.

Janssen, M. & van der Voort, H. (2020) Agile and adaptive governance in crisis response: Lessons from the COVID-19 pandemic. *International Journal of Information Management*, 55, p.102180.

Kane, G. (2019) The Technology Fallacy. *Research-Technology Management*, 62 (6), pp.44–49.

Kane, G.C. (2015) How Digital Transformation Is Making Health Care Safer, Faster and Cheaper - ProQuest. *MIT Sloan Management Review*, 57 (1), pp.1–11.

Kane, G.C., Palmer, D., Phillips, A.N., Kiron, D. & Buckley, N. (2016) Aligning the Organization for Its Digital Future. *MIT Sloan Management Review and Deloitte University Press*, July, pp.1–30.

Karpouzoglou, T., Dewulf, A. & Clark, J. (2016) Advancing adaptive governance of social-ecological systems through theoretical multiplicity. *Environmental Science & Policy*, 57, pp.1–9.

Karunasena, K. & Deng, H. (2010) Testing and Validating a Conceptual Framework for Evaluating the Public Value of e-Government using Structural Equation Modelling. *ACIS 2010 Proceedings*. Available from: <https://aisel.aisnet.org/acis2010/13>.

Kelly, D. & Amburgey, T.L. (1991) Organizational Inertia and Momentum: A Dynamic Model Of Strategic Change. *Academy of Management Journal*, 34 (3), pp.591–612.

Klijn, P.D.E.-H. (2008) Governance and Governance Networks in Europe. *Public Management Review*, 10 (4), pp.505–525.

Kramers, A. (2021) In-depth interview with Anna Kramers.

Lammers, T., Tomidei, L. & Regattieri, A. (2018) What Causes Companies to Transform Digitally? An Overview of Drivers for Australian Key Industries. In: *2018 Portland International Conference on Management of Engineering and Technology (PICMET)*. pp.1–8.

Leung, L. (2015) Validity, reliability, and generalizability in qualitative research. *Journal of Family Medicine and Primary Care*, 4 (3), p.324.

Magnusson, J. (2021) In-depth interview with Johan Magnusson.

Magnusson, J., Nilsson, A. & Kizito, M. (2019) Enacting Digital Ambidexterity: The Case of the Swedish Public Sector. *AMCIS 2019 Proceedings*. Available from: <https://aisel.aisnet.org/amcis2019/digital_government/digital_government/5>.

Martini, A. & Bosch, J. (2016) A Multiple Case Study of Continuous Architecting in Large Agile Companies: Current Gaps and the CAFFEA Framework. In: *2016 13th Working IEEE/IFIP Conference on Software Architecture (WICSA)*. pp.1–10.

Matt, C., Hess, T. & Benlian, A. (2015) Digital Transformation Strategies. *Business & Information Systems Engineering*, 57 (5), pp.339–343.

Mechant, P. & Walravens, N. (2018) E-Government and Smart Cities: Theoretical Reflections and Case Studies. *Media and Communication*, 6, p.119.

Mein Goh, J. & Arenas, A. (2020) IT value creation in public sector: how IT-enabled capabilities mitigate tradeoffs in public organisations. *European Journal of Information Systems*, 29 (3), pp.1–19.

Mergel, I., Ganapati, S. & Whitford, A.B. (2020) Agile: A New Way of Governing. *Public Administration Review*, 81 (1), pp.161–165.

Mergel, I., Gong, Y. & Bertot, J. (2018) Agile government: Systematic literature review and future research. *Government Information Quarterly*, 35 (2), pp.291–298.

Moore, M. (1995) *Creating Public Value: Strategic Management in Government*. Cambridge, MA, Harvard University Press.

Morakanyane, R., Grace, A. & O'Reilly, P. (2017) Conceptualizing Digital Transformation in Business Organizations: A Systematic Review of Literature. In: *Digital Transformation – From Connecting Things to Transforming Our Lives*. University of Maribor Press, pp.427–443. Available from: <http://press.um.si/index.php/ump/catalog/book/234> [Accessed 23 February 2021].

Negroponte, N., Harrington, R., McKay, S.R. & Christian, W. (1997) Being digital. *Computers in Physics*, 11 (3), pp.261–262.

Nelson, R., Howden, M. & Smith, M.S. (2008) Using adaptive governance to rethink the way science supports Australian drought policy. *Environmental Science & Policy*, 11 (7), pp.588–601.

Obwegeser, N., Yokoi, T., Wade, M. & Voskes, T. (2020) 7 Key Principles to Govern Digital Initiatives. *MIT Sloan Management Review*, 61 (3), pp.1–9.

OECD (2003) *The e-government imperative: Main findings*. Paris, OECD.

OECD, I.-A.D.B. (2016) Digital government. In: *Broadband Policies for Latin America and the Caribbean*. Paris, OECD Publishing, pp.359–387.

O'Flynn, J. (2007) From New Public Management to Public Value: Paradigmatic Change and Managerial Implications. *Australian Journal of Public Administration*, 66 (3), pp.353–366.

Osborne, D. (1993) Reinventing Government. *Public Productivity & Management Review*, 16 (4), pp.349–356.

Panagiotopoulos, P., Klievink, B. & Cordella, A. (2019) Public value creation in digital government. *Government Information Quarterly*, 36 (4), p.101421.

Petkovics, I. (2018) Digital Transformation in Higher Education. *Journal of Applied Technical and Educational Sciences*, 8 (4), pp.77–89.

Pfliegl, R. & Seibt, C. (2017) Die digitale Transformation findet statt! *e & i Elektrotechnik und Informationstechnik*, 134 (7), pp.334–339.

Pihir, I., Tomičić-Pupek, K. & Furjan, M.T. (2018) Digital Transformation Insights and Trends. *Proceedings of the Central European Conference on Information and Intelligent Systems*, September, pp.141–149.

Polit, D.F. & Beck, C.T. (2010) Generalization in quantitative and qualitative research: Myths and strategies. *International Journal of Nursing Studies*, 47 (11), pp.1451–1458.

Pollitt, C., van Thiel, S. & Homburg, V. (2007) New Public Management in Europe. *Management Online Review*, pp.1–6.

Porter, M.E. & Heppelmann, J.E. (2014) How smart, connected products are transforming competition. *Harvard business review*, 92 (11), pp.64–88.

Raineri, L. & Shanske, D. (2017) Municipal Finance and Asymmetric Risk. *Belmont Law Review*, 4 (65). Available from: <https://heinonline.org/HOL/Page?handle=hein.journals/belmolre4&id=71&div=&collection=>.

Rigby, D., Surtherland, J. & Takeuchi, H. (2016) Embracing Agile. *Harvard Business Review*. Available from: <https://hbr.org/2016/05/embracing-agile> [Accessed 17 February 2021].

Ringenson, T. (2021) In-depth interview with Tina Ringenson.

Ringenson, T., Höjer, M., Kramers, A. & Viggedal, A. (2018) Digitalization and Environmental Aims in Municipalities. *Sustainable Smart Cities and Smart Villages Research*, 10 (4). Available from: <https://www.mdpi.com/2071-1050/10/4/1278> [Accessed 19 January 2021].

Ritchie, J. & Lewis, J. (2003) *Qualitative Research Practice: A Guide for Social Science Students and Researchers*. SAGE.

Rose, J., Persson, J.S., Heeager, L.T. & Irani, Z. (2015) Managing e-Government: value positions and relationships. *Information Systems Journal*, 25 (5), pp.531–571.

Ruud, O. (2017) *Successful digital transformation projects in public sector with focus on municipalities (research in progress)*.

Sambamurthy, V., Bharadwaj, A. & Grover, V. (2003) Shaping Agility through Digital Options: Reconceptualizing the Role of Information Technology in Contemporary Firms. *MIS Quarterly*, 27 (2), pp.237–263.

Saunders, M., Lewis, P. & Thornhill, A. (2015) *Research Methods for Business Students*. 7th ed. New York, Pearson.

Schofield, J.W. (1993) Increasing the Generalizability of Qualitative Research. In: *Social Research: Philosophy, Politics and Practice*. SAGE, pp.200–225.

Sebastian, I.M., Ross, J.W., Beath, C., Mocker, M., Moloney, K.G. & Fonstad, N.O. (2017) How Big Old Companies Navigate Digital Transformation R. D. Galliers, D. E. Leidner, & B. Simeonova eds. *MIS Quarterly Executive*, 16 (3), pp.133–150.

Self, P. (2000) Rolling Back the Market: Economic Dogma and Political Choice. *Perspective on Political Science*, 29 (2), p.125.

Sia, S.K., Soh, C. & Weill, P. (2016) How DBS Bank Pursued a Digital Business Strategy. *MIS Quarterly Executive*, 15 (2), pp.105–121.

Singh, A. & Hess, T. (2017) How Chief Digital Officers Promote the Digital Transformation of their Companies. *MIS Quarterly Executive*, 16 (1), pp.1–17.

Smith, B. (2018) Generalizability in qualitative research: misunderstandings, opportunities and recommendations for the sport and exercise sciences. *Qualitative Research in Sport, Exercise and Health*, 10 (1), pp.137–149.

Soe, R.-M. & Drechsler, W. (2018) Agile local governments: Experimentation before implementation. *Government Information Quarterly*, 35 (2), pp.323–335.

Sow, M. & Aborbie, S. (2018) Impact of Leadership on Digital Transformation. *Business and Economic Research*, 8 (3), pp.139–148.

Stoker, G. (2006) Public Value Management: A New Narrative for Networked Governance? *The American Review of Public Administration*, 36 (1), pp.41–57.

Svahn, F., Mathiassen, L. & Lindgren, R. (2017) Embracing Digital Innovation in Incumbent Firms: How Volvo Cars Managed Competing Concerns. *Management Information Systems Quarterly*, 41 (1), pp.239–253.

Sveriges Ingenjörer (2020) Code of honor.

Swedish Institute (2021) Innovation in Sweden [Internet]. Available from: <https://sweden.se/business/innovation-in-sweden/> [Accessed 21 May 2021].

Tabrizi, B., Lam, E., Girard, K. & Irvin, V. (2019) Digital Transformation Is Not About Technology. *Harvard Business Review*, 13, pp.1–6.

Tallon, P., Queiroz, M., Coltman, T. & Sharma, R. (2019) Information Technology and the Search for Organizational Agility: A Systematic Review with Future Research Possibilities. *Journal of Strategic Information Systems*, 28, pp.218–237.

Taylor, C.S. (2013) Validity and Validation in Research and Assessment. In: *Validity and Validation*. Oxford University Press USA, pp.1–23.

Teece, D. & Leih, S. (2016) Uncertainty, Innovation, and Dynamic Capabilities: An Introduction. *California Management Review*, 58 (4), pp.5–12.

Teece, D.J. (2018) Business models and dynamic capabilities. *Long Range Planning*, 51 (1), pp.40–49.

Teece, D.J. (2007) Explicating dynamic capabilities: the nature and microfoundations of (sustainable) enterprise performance. *Strategic Management Journal*, 28 (13), pp.1319–1350.

Teece, D.J., Pisano, G. & Shuen, A. (1997) Dynamic capabilities and strategic management. *Strategic Management Journal*, 18 (7), pp.509–533.

Twizeyimana, J.D. & Andersson, A. (2019) The public value of E-Government – A literature review. *Government Information Quarterly*, 36 (2), pp.167–178.

UN (2015) THE 17 GOALS | Sustainable Development [Internet]. Available from: <https://sdgs.un.org/goals> [Accessed 18 May 2021].

Ushakov, D. & Chich-Jen, S. (2020) Global Economy Urbanization and Urban Economies Globalization: Forms, Factors, Results. In: *Migration and Urbanization: Local Solutions for Global Economic Challenges*. IGI Global, pp.200–218. Available from: <https://www.igi-global.com/chapter/global-economy-urbanization-and-urban-economies-globalization/237476> [Accessed 6 March 2021].

Värmdö kommun (2021d) Grundpresentation Hub för ett Smartare Värmdö 210308.

Värmdö kommun (2021a) Så fungerar Värmdö kommun - Värmdö kommun [Internet]. Available from: <https://www.varmdo.se/kommunochpolitik/ledningochnamnder/safungerarvarmdokommun.4.18c983316e0536cb18bb2a2.html> [Accessed 2 May 2021].

Värmdö kommun (2021b) Smartare Värmdö - Värmdö kommun [Internet]. Available from: <https://www.varmdo.se/smartarevarmdo.4.1e2e076a177b2482da0333c1.html> [Accessed 3 May 2021].

Värmdö kommun (2021c) Vårt Smartare Värmdö 2025 - den demografiska utmaningen.

Vetenskapsrådet (2002) *Forskningsetiska principer inom humanistisk-samhällsvetenskaplig forskning.* Stockholm, Vetenskapsrådet.

Vial, G. (2019) Understanding digital transformation: A review and a research agenda. *The Journal of Strategic Information Systems*, 28 (2), pp.118–144.

Wällstedt, N. & Almqvist, R. (2017) Budgeting and the construction of entities: struggles to negotiate change in Swedish municipalities. *Public Management Review*, 19 (7), pp.1022–1045.

Wang, C., Medaglia, R. & Zheng, L. (2018) Towards a typology of adaptive governance in the digital government context: The role of decision-making and accountability. *Government Information Quarterly*, 35 (2), pp.306–322.

Warner, K.S.R. & Wäger, M. (2019) Building dynamic capabilities for digital transformation: An ongoing process of strategic renewal. *Long Range Planning*, 52 (3), pp.326–349.

Weritz, P., Braojos, J. & Matute, J. (2020) Exploring the Antecedents of Digital Transformation: Dynamic Capabilities and Digital Culture Aspects to Achieve Digital Maturity. In: *AMCIS 2020 Proceedings*. Association for Information Systems, pp.1–10.

Wessel, L., Baiyere, A., Ologeanu-Taddei, R., Cha, J. & Jensen, T.B. (2021) Unpacking the Difference Between Digital Transformation and IT-Enabled Organizational Transformation. *Journal of the Association for Information Systems*, 22 (1). Available from: <https://aisel.aisnet.org/jais/vol22/iss1/6>.

Williams, C. & Schallmo, D. (2018) History of Digital Transformation. In: *Digital Transformation Now!*. pp.3–8.

Wu, S., Straub, D.W. & Liang, T.-P. (2015) How Information Technology Governance Mechanisms and Strategic Alignment Influence Organizational Performance: Insights from a Matched Survey of Business and IT Managers. *MIS Quarterly*, 39 (2), pp.497–518.

Yin, R.K. (1994) Discovering the Future of the Case Study. Method in Evaluation Research. *Evaluation Practice*, 15 (3), pp.283–290.

Yoo, Y., Bryant, A. & Wigand, R. (2010) Designing Digital Communities that Transform Urban Life: Introduction to the Special Section on Digital Cities. *Communications of the Association for Information Systems*, 27 (1). Available from: <https://aisel.aisnet.org/cais/vol27/iss1/33>.

Appendix 1. Semi-structured Interview Script

Original interview script including conceptual questions. Translated version can be found further down in Appendix 1.

Vi heter Mathilda och Mathilda och är studenter på KTH som för närvarande läser sista året på mastersprogrammet Industriell Ekonomi, vilket är en del av civilingenjörsprogrammet Maskinteknik. Som del av sista året skriver vi examensuppsats och gör detta i samband med er, Värmdö kommun. Det vi ska titta på är hur digitala transformationer i kommuner ska ske så effektivt som möjligt och om styrande principer har någon påverkan på detta samt om detta kan leda till förbättrat hållbarhetsarbete.

Vi vill bara tacka för att du vill medverka på den här intervjun. Först vill vi kolla med dig om det är okej att vi spelar in den här intervjun och sparar den fram tills att uppsatsen är skriven? Detta gör vi för att kunna transkribera den och använda den information som du ger oss under uppsatsens gång. Intervjun och transkriberingen kommer inte distribueras vidare och kommer att raderas när den är färdigskriven.

Du kommer att vara helt anonym i uppsatsen och ingenting du säger kommer kunna spåras tillbaka till dig, så att du vet!

Innan vi börjar skulle vi bara vilja förklara ett begrepp vi kommer använda genom hela intervjun, vilket är digitala initiativ. Med detta menar vi att arbetssätt kombineras med digitala tjänster och verktyg samt introduktionen av nya digitala verktyg och tjänster.

Skulle du kunna berätta lite om din roll på Värmdö kommun och hur länge du har jobbat där?

Har du erfarenhet av tidigare digitala transformationer eller digitaliseringsprojekt?

Operating

Känner du att du får något inflytande på din avdelning och hur den ska utvecklas?

Har några digitala initiativ införts på din avdelning?

Hur tycker du de digitala verktygen som finns nu fungerar?

Vad upplever du är fördelarna och nackdelarna? Och varför?

Har de digitala initiativen förändrat ditt arbetssätt? Hur?

Har dessa initiativ förändrat stämningen på din avdelning? Hur?

Har du behövt göra några anpassningar till de digitala initiativen? På vilket sätt?

Har de digitala verktygen som införts anpassats till vad just du gör på din avdelning? Anser du att de digitala verktyg och tjänster som finns är hjälpsamma?

Vet du om kommunen planerar att transformera delar av din avdelning?

Finns det något du ser kan digitaliseras nu inom ditt arbete?

Kan du beskriva några idéer och tankar som ni har, med digitalisering av enheten?

Känns det enkelt för er att lyfta sådana idéer? Om ni kommer med idéer, blir de verklighet?

Hur har du känt för att digitala initiativ ska införas på din avdelning? Hur har dina kollegor känt för det?

Upplever du att din avdelning förändrats, rent strukturellt, av digitala initiativ? På vilket sätt?

Har syftet med de digitala initiativen kommunicerats till dig? I sådana fall, vad var syftet?

Tycker du att syftet som angivits till initiativen uppfyllts?

Vilka potentialer ser du med att använda digitala verktyg? Fördelar/nackdelar?

Vilket potentiella svårigheter ser du med att införa det på din avdelning?

När digitala verktyg och tjänster införs på din avdelning, när brukar du och dina kollegor få ta del av det?

Vad tycker du att Värmdö kommun borde göra för att bli en bättre digital organisation? Hur skulle du vilja att det ser ut?

Enligt dig, hur tycker du att Värmdö kommun som organisation ska se ut om 10 år? Vad är din vision om detta?

Middle manager

Vad tror du är viktigast för att ett digitaliseringsprojekt ska lyckas?

Har några digitala initiativ implementerats på din avdelning? Finns det någon plan nu på att digitalisera avdelning? I så fall hur ser den ut?

Hur upplever du att detta har fungerat?

Har de digitala initiativen förändrat ditt arbetssätt? Hur?

Har dessa initiativ förändrat stämningen på din avdelning? Hur?

Ser du att dina medarbetare har behövt göra några anpassningar till de digitala initiativen? På vilket sätt?

Har de digitala verktygen som införts anpassats till vad just ni gör på din avdelning? Hur har den processen sett ut?

Vad har varit syftet med de digitala initiativen? Har de kommit från högre instanser eller varit initiativ tagna på din avdelning?

Tycker du att syftet med de digitala initiativen uppfyllts? Hur?

Vad har din förhoppning varit på resultatet av de digitala initiativen? Har några av dessa uppnåtts?

Vilken är den mest framstående förbättringen av digitala initiativ enligt dig? Varför då?

Vilka potentialer ser du med att använda digitala verktyg? Fördelar/nackdelar?

Vilket potentiella svårigheter ser du med att införa det på din avdelning?

Hur ser processen ut att införa digitala initiativ på din avdelning? Har du stött på motstånd från dina medarbetare under sådana processer?

Hur har digitala initiativ mottagits av organisationen tidigare? Har det funnits intresse och möjlighet att förändra arbetssätt för att införa initiativ på smidiga sätt? Har organisationen förändrats? På vilket sätt?

Vad tycker du att Värmdö kommun borde göra för att bli en bättre digital organisation? Hur skulle du vilja att det ser ut?

Enligt dig, hur tycker du att Värmdö kommun som organisation ska se ut om 10 år? Vad är din vision om detta?

Executive/strategist

Skulle du kunna berätta lite om transformationen som sker och ska ske i kommunen? Vad är ert mål och vision med det?

Vad har din förhoppning varit på resultatet av de digitala initiativen? Har några av dessa uppnåtts?

Vad har varit syftet med de digitala initiativen? Har detta kommunicerats till medarbetare och externt utanför organisationen? Varför har dessa syften varit faktorn som fått Värmdö kommun att genomgå en digital transformation?

Tycker du att syftet med de digitala initiativen uppfyllts? Hur?

Hur vill du se att organisationen ska styras och fungera kopplat till digitala initiativ?

Hur ska digitala initiativ väljas? Hur säkerhetsställer ni att de initiativen ni väljer att gå vidare med att de uppfyller de syften eller mål ni har satta för dem?

Vad tycker du är viktigt när en organisationsförändring sker? Förändras detta tycke om digitala verktyg och tjänster är inblandat? Vad tycker du är viktigaste med de digitala initiativen?

Tror du en total organisationsförändring kan ske om dessa initiativ sker utifrån olika delar av organisationen?

Vilken är den mest framstående förbättringen av digitala initiativ enligt dig? Varför då?

Vilka potentialer ser du med att använda digitala verktyg? Fördelar/nackdelar?

Hur ser processen ut att införa digitala initiativ på Värmdö kommun? Har du stött på motstånd från medarbetare under sådana processer? Vid vilket stadie blir medarbetare inkluderade i processen? Har ni några pilotprojekt som görs innan införandet sker?

När digitala verktyg implementeras, får medarbetare och mellanchefer någon "know-how" eller "guidelines" för hur detta ska göras? Vilket stöd finns för medarbetare och mellanchefer under dessa införanden?

Hur har digitala initiativ mottagits av organisationen tidigare? Har det funnits intresse och möjlighet att förändra arbetssätt för att införa initiativ på smidiga sätt? Har organisationen förändrats? På vilket sätt?

Vad tycker du att Värmdö kommun borde göra för att bli en bättre digital organisation? Hur skulle du vilja att det ser ut?

Tror du att kommunen bättre skulle bli om fler digitala verktyg och tjänster fanns att tillgå?

Har du några egna reflektioner eller tankar på vad framtida syften kommer vara när uppdateringen av den digitala transformationen sker?

Enligt dig, hur tycker du att Värmdö kommun som organisation ska se ut om 10 år? Vad är din vision om detta? Finns det några strategier på plats eller påbörjade som ska ta organisationen dit? Hur tas dessa fram? Vilka är med och påverkar dessa?

Translated version.

Our names are Mathilda and Mathilda, and we are students at the Royal Institute of Technology. We are currently in our final year of the master program Industrial Economics, which is a part of the engineering program Mechanical engineering. As part of our final year, we are writing our master thesis jointly with you, Värmdö kommun. We are investigating how digital transformations in municipalities shall proceed as efficiently as possible and if governing principles affect these as well as if this could lead to enhanced sustainability work.

We would like to thank you for participating in this interview. Firstly we would like to check with you if you accept that we record this interview and save it until the thesis is finalised? We do this to enable transcription and use the information provided during the interview in the thesis. The interview and transcription will not be distributed and will be deleted when the thesis is finalised.

You will be completely anonymous in the thesis, and no one will be able to track your statements back to you, just so you know!

Before we begin, we would like to explain a concept we will use throughout the interview. This is digital initiatives. With digital initiatives, we mean operations combined with digital services and tools, as well as the introduction of new digital services and tools.

Could you tell us about your role at Värmdö kommun and how long you have worked there?

Do you have any experience from previous digital transformations or digitalisation projects?

Operating

Do you feel that you have any influence at your department and how it should be developed?

Have any digital initiatives been implemented at your department?

How do you think the current digital tools function at your department?

What do you think are the pros and cons? And why?

Have the digital initiatives changed your way of working? How?

Have these digital initiatives changed the atmosphere at your department? How?

Have you had to do any adjustments to the digital initiatives? In what way?

Have the implemented digital tools been adjusted to the operations at your departments? Do you consider the digital tools and services available helpful?

Do you know if the municipality is planning to transform parts of your departments?

Are there any aspects that could be digitalised in your work?

Could you describe any digitalisation ideas and thoughts you have at the department?

Do you feel comfortable raising such ideas? If you raise these ideas, are they realised?

What have you feeling been associated with new implementations of digital initiatives? What have your colleagues been feeling?

Do you experience that your department, structurally, has been changed due to the digital initiatives? In which way?

Has the purpose of the digital initiatives been communicated to you? If so, what was the purpose?

Do you believe that the purpose of the digital initiatives has been achieved?

What potentials do you see by using digital tools? Pros/cons?

Do you see any potential difficulties with implementing digital initiatives at your department?

When digital tools and services are implemented at your department, when are you and your colleagues included in the process?

What do you think Värmdö kommun should do to become a better digital organisation? What would you like it to look like?

According to you, what do you think that Värmdö kommun should look like, as an organisation, in 10 years? What is your vision regarding this?

Middle manager

What do you think are the most important aspects for a successful digitalisation project?

Have any digital initiatives been implemented at your department? Do any plans to digitalise the department exist? If so, what does that plan look like?

Do you experience that this has worked?

Have the digital initiatives changed your way of working? How?

Have these initiatives altered the atmosphere at your department? How?

Do you know if any of your employees have had to adjust the digital initiatives? In what way?

Have the implemented digital tools been adjusted to the operations at your department? What has this process looked like?

What has been the purpose of the digital initiatives? Have they originated from higher instances or are the initiative originating from your department?

Has the purpose of the digital initiatives been fulfilled? How?

What are your hopes on the results of the digital initiatives? Has any of these been reached?

What are the most prominent improvements of the digital initiatives according to you? Why?

What potentials do you see by using digital tools? Pros/cons?

What potential difficulties do you see when implementing these at your department?

What does the process of implementing digital initiatives at your department look like? Have you encountered any resistance from your employees during such processes?

How has digital initiatives been received by the organisation previously? Have there been any interest or possibility to change ways of working in efficient ways? Has the organisation changed? In what way?

What do you think Värmdö kommun should do to become a better digital organisation? What would you like it to look like?

According to you, what do you think that Värmdö kommun should look like, as an organisation, in 10 years? What is your vision regarding this?

Executive/strategist

Could you describe the transformations that are happening and will happen at the municipality? What are your goals and vision with it?

What hopes have you had on the results of the digital initiatives? Have any of these been fulfilled?

What is the purpose of the digital initiatives? Have these been communicated to employees and externally outside the organisation? Why has these purposes been the factor for Värmdö kommun to proceed with a digital transformation?

Do you think the purpose of the digital initiatives have been fulfilled? How?

How would you like the organisation to be governed and functioned associated with the digital initiatives?

How should you choose digital initiatives? How do you ensure that the initiatives you chose fulfil the purposes or goals set?

What do you think are the most important aspects when doing an organisational change? Is this perception altered due to digital tools and services? What do you think are the most important aspects of digital initiatives?

Do you think a total organisational change can occur if initiatives emerge in different paces in different parts of the organisations?

What are the most prominent improvements of the digital initiatives according to you? Why?

What potentials do you see by using digital tools? Pros/cons?

What does the process look like to implement digital initiatives at Värmdö kommun? Have you encountered any resistance among your employees during such processes? At what stage are employees included in the process? Do you have any pilot projects before the implementation?

When digital tools are implemented, do employees and middle managers receive any "know-how" or "guidelines" regarding their function? Does any support exist for employees and middle managers during such implementations?

How has digital initiatives been received by the organisation previously? Have there been any interest or possibility to change ways of working in efficient ways? Has the organisation changed? In what way?

What do you think Värmdö kommun should do to become a better digital organisation? What would you like it to look like?

Do you think the municipality would be better if more digital tools and services were available?

Do you have any own reflections or thoughts on the future purposes of the update of the digital transformation?

According to you, what do you think that Värmdö kommun should look like, as an organisation, in 10 years? What is your vision regarding this? Are there any strategies in place or begun regarding how the organisation should get there? How are these produced? Who has influence on these?