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e-Estonia – A Digital Government in Digital Transformation

Master's thesis

Technology Governance and Digital Transformation

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I hereby declare that I have compiled the thesis independently and all works, important standpoints, and data by other authors have been properly referenced and the same paper has not been previously presented for grading.

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Abstract

Estonia, also known as 'e-Estonia', is renowned for its highly advanced digitisation of public services. Despite being a pioneer in e-governance, the constantly evolving technological landscape and societal challenges require a continuous evaluation of Estonia's digital transformation agenda within the public sector. The aim of this study is to assess the understanding of key stakeholders and public sector experts regarding the purpose and process of digital transformation in Estonia's unique cultural, historical, and societal context. To investigate these aspects, the research utilises a qualitative approach, combining document analysis and expert interviews. Although Estonia has a well-developed digital ecosystem, the study emphasizes the need for a unified vision to guide transformation. The existing digital agenda and public sector digital transformation plan lack clear direction. The thesis argues that administrative processes and organizational structures not designed for new challenges hinder Estonia's digital leap. It raises an essential discussion about defining what is meant by 'digital transformation' and the importance of framing policy problems before selecting the right tools, instruments, and organizational modes. The research holds practical significance as it contributes to the revision of Estonia's current public sector digitalization agenda, developed by the Estonian Ministry of Economic Affairs and Communications.

Keywords: *Digital Transformation, E-Governance, Digital Governance, Estonia, e-Estonia, Public Administration, Digital Government, Organisational Change, Policy Analysis, Policy Formulation, Policy Design, Public Sector.*

Introduction

Transformation - a complete change in the appearance or character of something or someone, especially so that that thing or person is improved.[1]

Background

e-Estonia is a brand that needs little further introduction in Estonia or abroad. The story of the tiny country that could leapfrog from being a Soviet republic to a "Digital Nation"[2] is well known. Estonian achievements in digital governance have been widely praised, not only by other countries looking to improve their digital infrastructure and services. This success was highly noteworthy in a world where a small and agile state such as Estonia could stand out by implementing digital solutions faster than others. However, in the face of the rapidly evolving technological solutions and broader societal challenges, simply adding more digital public services does not necessarily mean a better user experience and more value for citizens – if it did, to begin with. Having the best[3] digital public services is only part of what makes a truly digital society. As Drechsler (2018) asserts, Estonia is *a* leading country, but not *the* leader, in digital governance generally. This realisation has started to echo through statements from politicians to entrepreneurs alike (Kallas, 2018; Pukk, 2022; Riisalo, 2023). Therefore, both for policy and for communication, an ever-new calibration of digital governance is necessary, even – if not especially – in Estonia. And here, the question is not simply theoretical but also what the functional role of this insight, and discourse, would be. This master's thesis will look at e-Estonia in this context through a policy analytical perspective, with the aim of assessing the effectiveness of the current official digital transformation agenda for the Estonian public sector.

[1] Definition of transformation from the Cambridge Advanced Learner's Dictionary and Thesaurus

[2] Digital Nations is an international forum of leading digital governments founded in 2014 by Estonia, Israel, Korea, New Zealand, and the UK. Additional members include Denmark, Canada, Uruguay, Portugal, and Mexico.

[3] Estonia ranked first in the digital public services category in the European Commission (EC) Digital Economy and Society Index (DESI) rankings for 2022. Overall position for Estonia was 7th. URL https://digital-strategy.ec.europa.eu/en/library/digital-economy-and-society-index-desi-2022

Problem Statement

Academic research on digital transformation reveals that even though concepts like digital transformation, e-governance, digitalisation etc., are used often and interchangeably (Mergel et al., 2019), their exact definitions remain a matter of debate. Using this academic debate as a basis for policy analysis, the question then becomes whether the definition is clearly understood by the practitioners in public service. In the Estonian context, this question matters on both levels, i.e. policy and national branding, considering the country's reputation as one of the forerunners in e-governance and the ambitious goals set in its strategic documents on digital transformation. This thesis aims to explore whether those who are at the forefront of creating the digital agenda and delivering the policy results understand and agree among one another on what the aim of digital transformation for Estonia is, what it means in its specific cultural, historical, societal context today, and whether this understanding is enough to take the next leaps forward. In other words, this thesis is not about the definitions themselves, but how they function within the policy(-making) discourse to achieve the desired results within the overall given framework.

Research Questions

Therefore, the thesis aims to uncover whether there exists a sufficient level of understanding of the meaning of digital transformation for effective decision-making and policy formulation among the public sector experts and key stakeholders in Estonia. To analyse this, this thesis will answer three interrelated questions:

- What is public sector digital transformation in a general theoretical sense?
- What is Estonian public sector digital transformation according to the public sector practitioners?
- Is the meaning of digital transformation clear (and legitimate) enough for effective policy formulation?

Significance of the Study

This master's thesis contributes to the field of public administration research by conducting a detailed analysis of a specific case and drawing conclusions for a particular country. Estonia's

success as a digital governance leader has been widely appreciated and used as a model at least in concept, by numerous other nations, making this study all the more relevant. As the research indicates, the current digitalisation landscape is vastly different from when Estonia began its journey. Thus, examining the present situation can provide recommendations for continuous improvement. Given the author's employment as a Chief Digital Strategy Officer at the Estonian Government CIO Office, the practical output of this research will contribute to the review of the Estonia's Digital Agenda 2030, the strategy document developed and implemented by the Estonian Ministry of Economic Affairs and Communications.

Methodology

The thesis will follow a qualitative research approach, combining document analysis and expert interviews to answer the research questions and fulfil the thesis objectives. The qualitative design allows for a comprehensive and detailed exploration of the current definitions of digital transformation, both from previous literature and within the Estonian context, and the governance and organisational difficulties with its application. This approach will facilitate insights from both primary and secondary data sources.

The theoretical foundation of this research is, in a very general and mainstream sense, based on the work of Howlett, Ramesh, and Perl (Howlett et al., 2020) on agenda setting and policy formulation, as well as Peters and Pierre (Peters and Pierre, 2016, 2006) on decision-making and governance. These theoretical approaches are suitable for a functional analysis of the governance of digital transformation within the Estonian public sector and provide a frame to investigate the effectiveness of the current structures. Further details about the methodology and theoretical foundations will be elaborated in detail in subsequent chapters, but especially in the Theoretical Framework chapter below.

Document Analysis

The documents analysed in this study were the *Eesti 2035* long-term development strategy (Riigikantselei, 2021), Estonia's Digital Agenda 2030 (Estonian Ministry of Economic Affairs and Communications, 2021), Office of the Government CIO's Agenda for 2023 (Majandus- ja Kommunikatsiooniministeerium, 2023a), and a public memo by the Government CIO office on starting the public sector Digital Transformation in Estonia (Majandus- ja

Kommunikatsiooniministeerium, 2023b). These documents were selected based on their relevance as guiding documents for the digital transformation efforts led by the Estonian Ministry of Economic Affairs and Communications, and the researcher's professional expertise in the field. The document analysis provided insights into how the goals and definitions of digital transformation were described in these official documents.

Interview Guidelines

The interview guidelines for this paper were designed to garner the experts' insights into various aspects of digital transformation within the Estonian public sector. The semi-structured interview format allowed for flexibility in exploring the various aspects of the topic depending on the interviewees' particular expertise and viewpoints, while at the same time enabling a systematic exploration of the research questions.

Data Analysis

The data analysis method employed for this study was thematic analysis, a qualitative research approach that involves identifying, analysing, and reporting patterns or themes within the data (Fereday and Muir-Cochrane, 2006; Nowell et al., 2017) Reading and re-reading the interview transcripts permitted the author to become thoroughly acquainted with the content, allowing for the identification of meaningful categories or themes. This method enabled a systematic and in-depth examination of the data, helping to uncover insights, relationships, and patterns that may not be immediately apparent (ibid.).

The thematic analysis process involved the following steps: familiarisation with the data, searching for themes, reviewing themes, defining and naming themes, and writing up the findings (Braun and Clarke, 2006). After becoming familiar with the transcripts, the broader themes were identified and then refined and checked against the entire dataset to ensure they accurately represented the data. Finally, headings were provided for each theme, and the themes were woven into a narrative, offering a comprehensive analysis of the data (Fereday and Muir-Cochrane, 2006).

Using thematic analysis without explicit coding allowed the author to systematically identify, analyse, and report on the key themes and patterns that emerged from the interview transcripts,

providing a structured and in-depth understanding of the data in the context of the research question.

The study also employed content analysis of the documents and interview data. The content analysis allowed for a systematic examination of the goals and definitions of digital transformation in the selected documents, as well as the insights gathered from expert interviews. The main themes were used to address the research questions and contribute to the understanding of governance structure and organisational challenges in the Estonian public sector's digital transformation (ibid.).

This thesis provides insights into the field of public administration research and recommendations for policy development and implementation in the context of digital transformation. Although the interview analysis provided material for several more angles, this current paper primarily focuses on the issues related to the governance model, as this topic has often been overlooked when discussing the e-Estonia success story. The future research potential of areas that fell outside of the scope of this paper was elaborated in the conclusion and recommendations section.

Limitations and Ethical Considerations

Finally, this thesis is a classic instance of participant observation in that the author is not a neutral outside observer, but rather a civil servant involved in dealing with the very issues raised by the thesis (Musante and DeWalt, 2010). Classically, the cost in terms of detachment is balanced by access and policy impact. Moreover, this dual position allowed for more critical self-reflection. To mitigate possible biases, the research was approved by the researcher's superior at the ministry, and consent for citations was obtained from all interview participants. The researcher also recognised that the material from the interviews provided more valuable insights than could be covered within the scope of this thesis, thus necessitating future research to further analyse these aspects of Estonian public sector digital transformation.

Theoretical framework

This paper aims to provide a functional policy analysis through a case study of expert interviews and strategic documents on the digital transformation efforts of the Estonian public sector. Considering the multifaceted nature of digital transformation, various theoretical frameworks could be utilised. However, as this paper's main aim is to enrich the discussion through an empirical case study, an extensive analysis of applicable frameworks or literature review is not the focus of this thesis.

For a practical application of a theoretical framework to answer the research questions, concepts such as agenda-setting, policy formulation and problem definition are employed. Agenda-setting will be used to analyse the practitioners' perception of digital transformation as a policy problem. Subsequently, the question of problem definition will facilitate the assessment of whether there is clarity in understanding digital transformation sufficient for effective policy design in the Estonian public sector.

Governance, as argued by Peters and Pierre, is primarily about decision-making (Peters and Pierre, 2016). They underline the significance of setting priorities, allocating resources, settling disputes, and enforcing rules and regulations. By focusing on the decision-makers, they align decision-making theory with governance theory (ibid.). This approach is useful in the case of Estonian public sector digital transformation, where the model of governance itself is under debate as part of the transformation process. In other words, decision-making around Estonia's Digital Agenda involves both the technological part of e-governance as well as the administration of it. This thesis will analyse the views of the decision-makers in the middle of these processes.

Policy formulation guides the assessment of the clarity and effectiveness of policies (Howlett et al., 2020). Policy formulation includes policy "design," a government-led *process through which policies are developed to alter aspects of their own [*government's*] or public behaviour to pursue specific ends* (Howlett and Cashore, 2009, p. 139). Policy design is thus an approach to formulation that is used to examine and assess the policy instruments that are proposed in strategies for problem-solving projects and programs, as well as their use during policy implementation (Howlett et al., 2020, p. 139). While Howlett et al. refer to *government* here, in the Estonian case, the same applies to *governance,* as the aspects to be altered are those within the realm of responsibility of the public sector ministries.

As Peters and Pierre point out, the issue of coordination and coherence has been a longstanding challenge in governance. However, the necessity for improved synchronisation seems to have become particularly pronounced in the early stages of the 21st century (Peters and Pierre, 2016, p. 119). As the historical background chapter of this thesis will demonstrate, this has increasingly become the case for Estonia. Peters and Pierre attribute this increased focus on coordination to a variety of factors, reflecting the changing political climate and altering perspectives regarding the role of the public sector (Peters and Pierre, 2006, p. 119). For this particular case study, the latter will be most relevant. The emerging challenges arising from efforts to enhance efficiency and effectiveness in government operations have underscored the need for intensified coordination strategies (ibid, p. 120). While this is true in general and in many countries, the largely technology-driven development of Estonian e-government to date has made this challenge all the more pronounced for Estonia, as the following chapters will illustrate.

Bogason (1991) notes that *governments should first decide what they want to do and then decide how those goals can be achieved efficiently and effectively* (Bogason, 1991, cited in Peters and Pierre, 2006, pp. 118–119). Moreover, decision-making requires decisions on priorities. This includes the overall priorities of the entire government, *in contrast to the multiple priorities that exist with each individual program and organization.* (Peters and Pierre, 2006, pp. 118–119). This aspect of decision-making will inform the analysis on the direction of Estonian public sector transformation. Aiming to construct a single definition of what digital transformation means in the Estonian public sector context will shed light on the *what*, the effectiveness of the Estonian e-government regarding deciding what they want and then how to achieve it will be analysed through the framework of agenda setting. Felstiner et al. assert that there are *multiple ways to frame a particular policy issue in a given context, and the ways in which problems are defined and (re)framed dictates how they are treated in subsequent policy activities* (Felstiner et al., 1980, cited in Howlett et al., 2020, p. 102). Agenda-setting concerns the process by which policy problems are identified and prioritised for governmental attention (Howlett et al., 2014). The process involves defining a problem, exploring potential solutions, and assessing the extent of political support for actions (Howlett et al., 2014, p. 58). Agenda-setting is concerned with the way policy problems emerge, or not, as candidates for government's attention. Agenda-setting is a label for the process by which governments decide which issues need their attention and prioritise among them (Howlett et al., 2020, p. 101). The part of agenda setting this thesis is most concerned with is problem definition. According to

Bobrow (2006), problem definition refers to the process of accurately delineating a present circumstance, including its likely unchangeable trends. As he indicates: *Descriptive reality is often not well known or a matter of consensus* (Bobrow, in Peters and Pierre, 2006, p. 83) This discrepancy is particularly true for substantial policy issues, both domestic and international, where the ground is usually disputed (ibid.). The contention or ambiguity greatly influence what even the most thorough methods of value clarification and causality determination will discover or have discovered. Thus, problem definition can be a challenging and labour-intensive process (Bobrow, cited in Peters and Pierre, 2006, p. 82) This theoretical insight will help in analysing the digital transformation process Estonia is carrying out from the perspective of clarity in definitions as a prerequisite for goal setting.

Literature Review - Defining Digital Transformation

The following chapter will provide an overview of the current literature on digitalisation, e-governance/e-government, and digital transformation, to answer the first research question – *What is public sector digital transformation in a general theoretical sense?*

Looking at the literature on the subject, it becomes evident that despite the steady increase in research, there is no one standard definition of digital transformation in the public sector. According to several authors, *transformation* is an often-used notion in e-governance studies; however, it is yet to be defined how it differs from change in general or what is the standard definition (Bannister and Connolly, 2014; Warner & Wäger, 2019; Wessel et al., 2020; Hanelt et al., 2021). In addition, a substantive amount of literature focuses more on strategic Information Systems research, as Vial (2019) demonstrated. Alvarenga et al. (2020) discuss the importance of digital transformation for modern organisations and its relationship with knowledge management in the public sector, emphasising that the success of digital government depends on knowledge management. Pittaway and Montazemi (2020) further elaborate on the definition of digital transformation in the public sector and distinguish factors that differentiate public sector organisations from their private counterparts, such as bureaucratic structures, political influences, and resource constraints. The authors argue that these factors necessitate a tailored approach to public sector digital transformation. As Mergel et al. stated in 2019, Aside from preliminary consultancy reports, there is a notable lack of structured understanding regarding how public administrators themselves are defining and approaching digital transformation in their everyday operations and what they anticipate as

outcomes (Mergel et al., 2019, p. 1; Wilson and Mergel, 2022, p. 2). Based on this ongoing research, the same can still be said in 2023. The literature presents a variety of perspectives, and a consensus regarding the precise definition and scope is still debated.

Another observation regarding the definitions indicates that academic literature concerning the transformative impact of digitalisation still uses terms such as e-governance, e-government, digital government, and transformational government interchangeably (Meijer and Bekkers, 2015; Mergel et al., 2019). Meijer and Bekkers explain that e-government as a set of *techniques* is an important driver for the modernisation of the public sector, and e-government as a *practice* can be described as the use of information and communication technologies (ICTs) for designing new or to redesign existing information processing and communication practices to achieve a better government (Meijer and Bekkers, 2015, p. 1). While the authors use the term *e-government*, they themselves point out that *e-governance* would be more accurate, however as the former had been prevalent at the time of their writing, they decided to maintain consistency (Meijer and Bekkers, 2015, p. 1) Similarly, Jansen and Ølnes (2016) point out that the concept of *e-service* lacks clarity, causing confusion about the types of interactions between government and citizens, making it difficult to assess their quality.

The majority of more recent research relates to the two seminal theoretical frameworks – Fountain's technology enactment framework (Fountain, 2001) and the Digital Era Governance approach by Dunleavy et al. (Dunleavy et al., 2006). Fountain's model explores the influence of technologies on organisations from an institutional perspective, distinguishing between objective technologies (such as the internet) and enacted technologies (how these are used, designed, and perceived by individuals within the organisation) (Fountain, 2001). Her premise is that the perception and application of technology are constrained by institutional setups but can also have an effect on the organisation itself. This model emphasises the role of digital technologies in enabling new organisational structures, processes, and strategies within government institutions while fostering collaboration between government agencies and stakeholders (Fountain, 2001).

The Digital Era Governance approach by Dunleavy et al. scrutinises how technological change facilitates transformation in public sector organisations (Dunleavy et al., 2006) Digital governance is defined by Dunleavy et al. as the use of ICTs by governments to enhance their internal and external processes, improve service delivery, and promote transparency and accountability (ibid.).

Adding to this, Gil-Garcia et al. (2016) highlight that digital governance encompasses the design, implementation, and evaluation of digital government policies, initiatives, and strategies aimed at fostering public value, citizen engagement, and sustainable development (ibid.).

Despite their nuances and limitations, these concepts share the common objective of investigating how the public sector leverages ICTs to improve service delivery, modify organisational processes and culture, and assess their impact on value creation. Furthermore, e-government studies often concentrate on how technological innovations, especially the use of the internet for service delivery, are implemented. Janowski (2015) notes that while e-government incites changes within an organisation, e-governance and policy-enabled electronic governance also induce transformations in external relationships. Even though much of the previous research on the topic has focused on changes within government, mainly from analogue to digital public service delivery, there are some who also emphasise the wider institutional change facilitated by technology (Tassabehji et al., 2016, cited in Mergel et al., 2019, p. 3).

Out of the various definitions suggested, perhaps the most comparable to the aims of this thesis is the one from Mergel et al. (2019). Similarly to this paper, they construct a definition based on expert interviews. As a result, they have developed the following definition:

Digital transformation is a holistic effort to revise core processes and services of government beyond the traditional digitization efforts. It evolves along a continuum of transition from analogue to digital to a full stack review of policies, current processes, and user needs and results in a complete revision of the existing and the creation of new digital services. The outcome of digital transformation efforts focuses among others on the satisfaction of user needs, new forms of service delivery, and the expansion of the user base. (Mergel et al., 2019, p. 12)

Another previous take on the topic relevant to this thesis is the Estonian case studied by Lember, Kattel, and Tõnurist, who present a comprehensive theoretical discussion on the evolution of technological capacity in the public sector and argue that complex and sophisticated technologies have significantly changed public service delivery and organisational structures (Lember et al., 2018). They define technological capacity as the ability to explore, develop, and adapt new technological solutions in public service design, delivery, and evaluation. Building on earlier work on administrative capacities, they emphasise

the importance of understanding the mechanisms that drive the speed, sophistication, and direction of technological developments and, most importantly from the perspective of this thesis, how these materialise through changes in organisations (Lember et al., 2018, p. 217) Innovation is primarily an organisational process with organisations and their routines co-evolving with technology, influenced by the wider institutional context. Organisational routines are crucial to an organisation's ability to undertake and master specific tasks and these routines, while being persistent, evolve over time (Lember et al., 2018, p. 217). The evolution of technological capacities not only depends on the internal structures and processes of organisations but also on those of key partners and the rules and regulations that structure these networks (Lember et al., 2018, p. 218).

To understand the linkages between the introduction of new technological solutions and organisational performance, the authors propose focusing on the evolution of technological capacities in the public sector. While doing so, they draw attention to the fact that technology has a neglected position the public administration literature, despite it playing an essential part in administrative capacity development (Lember et al., 2018, p. 214). Based on this still ongoing research at hand, it can be said that, at the same time, technology-, and services-focused literature on digital transformation in the public sector pays less attention to the aspect of PA.

To summarise the academic debate and answer the first research question of this thesis – *What is public sector digital transformation in a general theoretical sense?* – the following aspects above stand out as most relevant.

Digital transformation in the public sector is an extensive, ongoing process, anchored on ICTs. It includes the supplanting of analogue systems with digital equivalents, a critical examination and potential overhaul of existing policies and processes, culminating in novel service delivery (Mergel et al., 2019). Concepts such as e-governance, digital government, and transformational government elaborate on how public sector entities employ technology to enhance service delivery and reshape organisational processes and culture (Meijer and Bekkers, 2015; Lember et al., 2018, Mergel et al. 2019). Fountain's technology enactment framework accentuates the role of digital technologies in crafting new organisational structures, processes, and strategies. It highlights technology's potential to facilitate government agencies' collaboration (Fountain, 2001). Dunleavy et al.'s (2016) Digital Era Governance approach analyses how technological progress can stimulate public sector organisations' transformation. They regard digital

governance as the use of ICTs by governments in order to be able to refine processes, enhance service delivery, and endorse transparency and accountability. Gil-Garcia et al. (2016) further widen digital governance to encompass the design, execution, and assessment of digital government policies, initiatives, and strategies to encourage public value, citizen engagement, and sustainable development. Lember et al.'s (2018) study underscores the crucial role of technological capacity evolution in digital transformation. Technological capacity refers to the public sector organisations' ability to identify, develop, and adapt novel technological solutions when designing, delivering, and evaluating public services.

In summary, the academic literature describes digital transformation in the public sector as a multifaceted and fluid process aimed at operational and service delivery enhancement. Driven by the adoption and integration of ICTs, its goal is to improve governance via increased efficiency, transparency, citizen engagement, and sustainable development. Although this thesis does not aim to focus on the academic definition in more detail, it is worth emphasising that this definition could, and should, be fundamentally questioned and explored from a theoretical perspective, especially regarding the question of whether digital transformation should not, or even would not have to, entail the transformation of the organisations undergoing digitalisation.

Research Gap

Despite the e-Estonia narrative's central role in the collective national identity, a comprehensive, systematic exploration into the history and development of Estonia's digital governance model is still largely absent. This thesis aims to address that research gap, complementing the previous studies cited above.

There's an evident scarcity of research focusing on the strategic, organisational, and policy dimensions required for the digital transformation of the Estonian public sector. Echoing the concerns raised by Mergel et al. (2019, p. 12), it's clear that additional research is required to delve into the specifics of individual countries' digital transformation strategies, public services, and the internal mechanics of distinct digital transformation projects within public administrations. Building on the appeal to conduct more research on variations in digital transformation practices influenced by factors such as country size, historical context, and current conditions, this thesis aims to extend the discussion from the academic literature's

definition of digital transformation, providing further insight and filling gaps in our understanding of these nuanced influences on Estonian public sector digital transformation.

Historical Background

To provide a context for answering the second research question – what the Estonian public sector digital transformation is according to the practitioners – the following part of this thesis will first briefly look at how the Estonian digital government has reached the current status quo. This historical background will be followed by an overview of the governance model for leading the digital transformation today.

As indicated above, considering the role e-Estonia's narrative has played in creating the self-image of the nation, research on its history has remained limited. Recent publications include the collection of articles and case studies from the e-Governance Academy, *Twenty Years of Building Digital Societies: Thinking about the Past and Future of Digital Transformation* (Vihma, 2023) or the *Eesti IT-rahva lugusid* [Stories of Estonian IT crowd] (Kütt, 2023). At the same time, a monograph on the history of e-Estonia is still a desideratum, so there is no consensus about the actual timeline of its development.

This lack of systematic research reflects the digitalisation development in a way, being driven by charismatic individuals and innovative ideas rather than stable and systematic governance. Consequently, it is crucial to critically analyse the historical background of Estonia's digital governance model to identify both its successes and shortcomings.

Transforming Estonia into e-Estonia

The e-Estonia narrative has been both a result and a driver of the Estonian e-governance model.

Even though the most popular version of the story starts with Estonia's early adoption of digitalisation in the beginning of the 1990s, an often overlooked fact is the role the Soviet-era academic tradition played in laying the groundwork (Drechsler, 2018). *The entire development is premised on a long, already Soviet-era history of STEM investment and training especially in Estonia* (Högselius, 2005, in Drechsler, 2018, p. 7). The narrative of "no legacy" transition from Soviet control to independence has later been widely used, as a calculated decision to adopt a less bureaucratic and more cost-efficient governance approach that allowed the

possibility to leapfrog to digital technologies, bypassing analogue technologies altogether (Kitsing, 2008). However, what also needs clarification is the *less bureaucratic and more cost-efficient governance* approach. As Drechsler (2018) points out, despite popular perception, Estonia had a rather successful Public Administration system even before the introduction of digital solutions, which counters the argument that Estonia *could not afford a classical bureaucracy* (Viik, 2018; Kallas in Hartschuh, 2018, cited in Drechsler, 2018, p. 8). Drechsler goes on to elaborate that the birth of e-Estonia was therefore not due to necessity, but rather an evolution (Drechsler, 1997, 1998, 2018). This is crucial from the perspective of this thesis because, as Drechsler notes, digital governance does not minimise bureaucracy; instead, it merely transitions it into the digital sphere (Drechsler, 2018, p. 9). Understanding this difference is something that both Estonian politicians and civil servants still struggle with today, as the second part of this thesis will illustrate.

The early vision for digital transformation was shaped by the ideas of key figures such as President Lennart Meri or the first Prime Minister after Estonia restored its independence, Mart Laar (Drechsler, 2018). Their aim was to create an inclusive and collaborative online democracy, utilising digital means to increase citizens' participation in democratic processes (Velmet, 2015). However, the outcome deviated from the initial digital participatory vision. Instead, the focus shifted towards creating a cost-efficient public sector, streamlined bureaucracy, and a well-functioning digital infrastructure (Velmet, 2015).

Technological Solutionism

When Digital Governance did become more established in Estonia, after years of *somewhat hybrid but in many respects very traditional, German-legalistic civil service that had been established (married with some then-fashionable NPM tools which are highly bureaucratic as well* (Drechsler, 2018, p. 9), it was driven more by the development of digital technologies than by strategic planning (Kalvet, 2007), or *tech-driven, rather than tech-based* (Drechsler, 2018, p. 16). While this contributed to the digitalisation of Estonia's public services, it also raises questions about the potential risks and biases associated with solutionist thinking. For instance, the focus on technical solutions has inadvertently side-lined alternative problem definitions and policy formulation that could have benefited different groups of actors.

Despite becoming a forerunner in e-governance and building a thriving ICT industry, the focus on adopting the governance model to digital solutions was lacking (Kattel and Mergel, 2018). As Kattel and Mergel argue, the digitalisation of public services in Estonia has been driven by policy initiatives and self-managed public-private networks, enjoying cross-party political support as a symbol of leaving the Soviet past behind and opening the Estonian society and economy to the West. However, there has been little focus on how to sustainably deliver these services (ibid.). The ad-hoc solutions, quick and smart fixes, and the agile mindset indicate that e-Estonia can be seen as a product of a national approach to embracing digital technology rather than a result of a particular policy or strategy (Kitsing, 2011; Drechsler, 2018; Kattel and Mergel, 2019). While it might have led to increased innovation, agility, and collaboration between stakeholders in the past, it did not result in a universally adoptable governance model (Kattel and Mergel, 2018). The decentralised approach led to the absence of a central office for digital transformation, even though it was initially envisioned in the first Information Society Roadmap from 1994 and the following Principles for Estonian Information Policy (State Chancellery of Estonia, 1998). Furthermore, as Kattel and Mergel also note, *while the decentralised digital agendas of line ministries have provided needed agility, they have also created uneven digital capabilities across different departments and agencies. This reliance on bottom-up departmental initiatives seems to necessitate stronger and perhaps more formalised coordination structures than are currently present* (Kattel and Mergel, 2018, p. 13).

An additional twist worth mentioning is highlighted by Lember et al. in their research on the technological capacity of the Estonian public sector (Lember et al., 2018). Namely, despite a strong political discourse on austerity and global technological leadership, policy thinking at the ministerial level in Estonia is largely devoid of technology (ibid, p. 226). Centralised ICT competence centres, despite their potential drawbacks, are often the initiators of technological change. The evolution of technological capacities, therefore, is closely tied to the interaction between centralised units and actual public service providers, as well as the implementation of technology projects (ibid, p. 226). Moreover, their research on the Estonian public sector revealed an *uneven and mostly slow rate of change in technological capacities in a seemingly technology-friendly context* (ibid.).

These observations led to the idea of technological solutionism. As Evgeny Morozov describes it, *recasting all complex social situations either as neatly defined problems with definite, computable solutions or as transparent and self-evident processes that can be easily optimised - if only the right algorithms are in place!* (Morozov, 2013, p. 5). Pfotenhauer et al. add to the

definition with *the framing of problem diagnoses in response to readily available, often technological solutions* (Pfotenhauer et al., 2022, p. 15). The concept of solutionist thinking shares a strong connection with ideas such as 'technological fixes' and 'technology optimism' (Pfotenhauer et al., 2022, p.15). These perspectives have been prevalent in Estonia ever since the 1990s. The digital-by-default solutionist approach has led to situations where the strategic goals are, if not set, then at least highly influenced by the technologically feasible solutions. In other words, if technology is the hammer, all public services can become the nail: "*Unfortunately, we have also seen that when these organisations attempt to adopt new innovation methods, they often do it with an instrumental logic that tends to elevate one specific method as "the answer" to their innovation needs*. (Christiansen and Leurs, 2018) Looking at the key elements of Estonia's past digital success – the X-Road, the e-ID, and public-private partnerships (PPP) – indicates that this journey has been characterised by *"development-driven strategies rather than by strategy-driven development"* (Kalvet, 2007, p. 11).

What is remarkable is that, back in 2007, Kalvet stated: *In the Estonian public sector there are two major horizontal projects that have both become very important for the modernisation of the public sector. First, government information systems and databases have been connected to the Internet through a service known as the 'X-Road'. Second, the Estonian ID-card, a compulsory identity document for all citizens includes electronic authentication and authorization which provides the foundation for several innovative e-services. These services have also provided a direct boost to the respective developments in the private sector.* (Kalvet, 2007, p. 27)

In 2023, these two are still the main success stories e-Estonia is renowned for. On the one hand, it goes to show the fundamental importance of securing a universal exchange layer and a digital identity for building the e-government on top, on the other, as several authors and public figures (Kattel and Mergel, 2018; Drechsler, 2018; Kallas, 2018) point out, if initially the digital solutions were created for the purpose of making the life of bureaucrats easier (Vihma, 2023, p. 160), by *choosing to concentrate its digital evolution solely on x-road, Estonia has, in effect, crafted its own legacy system — an action the initial planners intended to* evade (Kattel and Mergel, 2018, p. 2).

At the same time, the data exchange layer and universal eID, the two success stories Estonia is known for, tend to paint a picture of a more centralised approach than is actually the case. For example, using the X-road is currently not mandatory for Estonian public sector institutions,

meaning there is room for sector ministries to duplicate the existing solution. The lack of long-term strategic planning and, until recently, the absence of a central office for digital transformation and an empowered state official for digital enablement, indicated a lack of strategic oversight and coordination (Kattel and Mergel, 2018, p. 14).

Current Governance Model

Looking at the bureaucratic organisation of Estonian digital governance today shows that the envisioned office for digital transformation from the 1994 roadmap did not materialise (State Chancellery of Estonia, 1998). Understanding the distribution of roles and responsibilities as they lie today will explain and exemplify the core challenges Estonian digital government is presently facing.

Currently, the Digital Transformation sector of Ministry of Economic Affairs and Communications (MEAC) is led by the Undersecretary for Digital transformation/ Government CIO. Despite the title "Government CIO," the mandate includes coordinating, not executive authority considering the digital solutions and e-services developed by other ministries. The supporting and coordinating role *does* involve developing and expanding centralised digital solutions and e-services such as the X-Road and e-ID, as well as ensuring cybersecurity, and advancing digital infrastructure, including high-speed internet connections, data networks, and 5G technology in Estonia (Estonian Ministry of Economic Affairs and Communications, 2021). This is done through and in coordination with the agencies operating within the MEAC's area of responsibility, namely the State Information System Authority, State IT Centre, State Info communication Foundation, and the Consumer Protection and Technical Regulatory Authority's communications department.

Although each of these agencies has its work plan with respective objectives, they are broadly associated with the implementation of the objectives of Estonia's Digital Agenda 2030 (Estonian Ministry of Economic Affairs and Communications, 2021). The Agenda is a strategic plan focused on advancing the Estonian economy, state, and society using digital technology over the next decade. Even though the agenda talks about goals across the board, the MEAC only manages the central services developed by the ministry, the State Information System Authority, and State IT Centre. When it comes to the goals and objectives set for other sectors, such as Education, Social Affairs, etc., the ministry has a role of coordination, but not of

implementation of the strategy. This implies the distributed responsibility model, where sectorial responsibility is spread across the government ministries.

Empirical Investigation

Building on the theoretical framework and historical background, the empirical part of this paper will answer the remaining two questions listed in the introduction. For that purpose, expert interviews were conducted with high-level public sector experts. The insights gained from these interviews were combined with the findings from the document analysis, providing a comprehensive understanding of the Estonian public sector's digital transformation.

Guiding Policy Documents

Eesti 2035 **Development Strategy**

The *Eesti 2035* strategy, approved by the Estonian Parliament (Riigikogu) on May 12, 2021, lays out the long-term development roadmap for the state and citizens of Estonia over the ensuing 15 years, with key strategic goals and the changes required to achieve them (Riigikantselei, 2021). This is the guiding document for the subsequent agendas described below.

The strategy underlines five main areas of focus – *People*, *Society*, *Living Environment*, *Economy*, and *Governance*. In the context of digitalisation, several aspects of these focal points demand attention. Although the strategy does not explicitly mention digitalisation, its interpretations suggest a strong digital leaning in the envisioned growth of Estonia, which resonates with the nation's desire to be a global digital leader.

From a digitalisation perspective, the strategy's emphasis on "people" aims at focusing on enhancing digital literacy and fostering a society where citizens are proactive in engaging with and using digital tools for personal and societal betterment. This aligns with the principle of Estonia's people being *'smart, active and health-conscious'* (ibid.).

The strategy's vision of "*innovative, reliable, and people-centred*" governance refers to an increased digitisation of public services and administration (ibid.). The actualisation of this vision would mean integrating more technological solutions into governance, creating a

technology-based interaction between the government and its citizens. The aim for a *"strong, innovative, and responsible"* economy suggests the promotion of a digital economy, incentivising innovation in sectors such as e-commerce, digital finance, and digital entrepreneurship, thereby driving responsible and sustainable economic growth. The strategy states that achieving these objectives will involve *"sectoral development plans and programmes"*, so digitalisation will be an integral part of these initiatives (ibid.).

There are also five strategic goals centred around the same themes of people, society, the economy, living environment, and governance in the *Eesti 2035* strategy, which are backed by fundamental principles of democracy, security, the rule of law, cultural preservation, social inclusivity, NATO and EU membership, sustainable development, and innovative problem-solving (ibid.).

These strategic goals indicate several key points from a digitalisation viewpoint. Under '*people*', the strategy highlights the emphasis on adaptability to changing work nature, curiosity, and creativity, which could be perceived as essential elements for thriving in a digital society (ibid.).

The '*society*' goal describes an open society that embraces changes that create shared value and address state and individual challenges, suggesting the use of digital tools to foster social cohesion and facilitate societal change (ibid.).

The '*economy*' goal is directly linked with digitalisation. A strong, innovative, and responsible economy is anticipated, capitalising on new technologies and business models (ibid.). The goal aims to create a conducive environment for private sector R&D and innovation, positioning itself as an attractive location for virtual businesses, investments, and the testing of new societal-benefiting solutions (ibid.).

In the *'living environment'* section, the strategy calls for an inclusive, safe, and high-quality living environment for all, covering mental, physical, and digital spaces (ibid.). This includes a commitment to upgrading digital infrastructure and integrating innovative technologies to better cater to the inhabitants' needs (ibid.). Lastly, under *'governance'*, Estonia seeks to be an innovative country, managing social life through new, efficient technologies that focus on people (ibid.).

The strategy underscores Estonia's ambition to continue to be a forerunner in e-governance, with an emphasis on co-creation in policymaking and the delivery of high-quality and

accessible public services (ibid.). This involves ensuring a secure, predictable data space, fostering social cohesion, and promoting innovative public administration (ibid.).

Estonia's Digital Agenda 2030

Estonia's Digital Agenda 2030 was developed by the Ministry of Economic Affairs and Communications and approved by the government in December 2021. Aiming to employ information and communication technology to achieve the national objectives laid out in the *Eesti 2035* strategy above, it is a strategic plan focused on advancing Estonian economy, state, and society using digital technology over the next decade.

The agenda does not provide a clear definition of digital transformation. It stresses the necessity to take Estonian digital services to the next level but does not explicitly define what this next level entails. The vision of Estonia's Digital Agenda 2030 encompasses five main aspects: a way of life powered by digitalisation, protection through the power of digitalisation, an economy that is powerful thanks to digitalisation, empowering people by valuing every person and their contribution to co-creation, and establishing fertile conditions for future solutions (Estonian Ministry of Economic Affairs and Communications, 2021).

To implement the vision, *"the goal for the next decade in terms of the development of digital society is to increase Estonia's digital power: digital government guarantees the best experience, high-speed Internet is available to all those who request it in Estonia and our cyberspace is safe and reliable."* (Estonian Ministry of Economic Affairs and Communications, 2021)

The potential challenges and constraints that could hinder the implementation of its cross-sectoral and high-level goals are related to the issue of decentralised governance. On the one hand, Estonia's Digital Agenda 2030 provides a forward-thinking framework for leveraging digital technologies to foster economic growth, social cohesion, and efficient governance. However, its ambitious vision is constrained by the existing governance and funding structures in the Estonian public sector.

Ministry of Economic Affairs and Communications Digital Agenda for 2023

As a more detailed action plan for the Agenda 2030, the Digital Agenda for 2023 (Majandus- ja Kommunikatsiooniministeerium, 2023a) serves as the yearly plan for the Office of the Government CIO, providing an overview of the main activities. One of those priorities listed concerns the reviewed plan for centrally coordinating the public sector digital transformation process. For years, the Ministry of Economic Affairs has been allocating funds to different sector ministries for implementing ICT projects. With the new approach, the MEAC is leading the process through three lines of effort.

The first involves developing more centralised services that can be utilised by various ministries. These services serve as tools for subject ministries to create area-specific services on top of the central foundation. The second pillar requires each sector or area ministry to devise a comprehensive digital transformation plan that encompasses the plans for transforming service management, data management, technology, cyber security, skills, and sustainability. This should ensure that funding requests are justified and well-founded. Lastly, the third pillar involves the Ministry of Economic Affairs and Communications, developing an Estonian digital maturity framework and quality management system in order to guide the implementation of digital transformation in a scalable manner (Majandus- ja Kommunikatsiooniministeerium, 2023a).

Even though the Digital Agenda for 2023 focuses heavily on changes, it falls short in defining both the notion of “digital transformation” and “digital turn”, which are the two terms used inconsistently throughout the document to describe the ongoing process.

Memo: Starting Digital Transformation in the Public Sector

In the beginning of 2023, the Government CIO Office published a memo on *Starting Digital Transformation in the Public Sector* (Majandus- ja Kommunikatsiooniministeerium, 2023b). The memo is a more detailed layout of the plan for the public sector Digital Transformation. It presents a roadmap for achieving optimal value in public services by 2030 (ibid.). Its overview of the current situation reveals cumbersome services with legacy technology, along with deficiencies in management, user experience, data, technology, cybersecurity, skills, sustainability, and resilience. Service owners lack control over technology governance and management, and sustainable funding models are absent (ibid.). According to the memo, the goal is to achieve user-centric, high-quality public services by 2030 through sector-specific digital changes, funded sustainably and developed based on business needs. The strategic-level

technology management capability will improve, ensuring quality and measurability, while services will be continuously developed and quickly launched during crises (ibid.). The direct impact of this process will be the availability of high-quality services for users, while the indirect impact supports the realisation of sector-specific development plan objectives, such as increased healthy life years, and a sustainable, risk-reducing, accident-preventing, and environment- and culture-preserving society (ibid.). To achieve this goal, the memo outlines the same three key activities already described in the previous document.

Interviews

The interview guidelines for this paper were designed to garner the experts' insights into various aspects of digital transformation within the Estonian public sector. The semi-structured interview format allowed for flexibility in exploring the various aspects of the topic depending on the interviewees' particular expertise and viewpoints, while at the same time enabling a systematic exploration of the research questions.

The first part of the interviews focused on the definition, understanding and interpretation of digital transformation. This was followed by a discussion on the challenges and opportunities around digital transformation within the Estonian public sector today. The questions focused on uncovering the challenges the experts encountered in their day-to-day roles, which may hinder the successful realisation of digital transformation and their recommendations on improvements.

A semi-structured interview format was used, which allowed for the exploration of key themes and issues while still providing flexibility for the interviewees to share their unique perspectives and experiences. The sample size was determined based on data saturation, meaning that interviews were conducted until no new significant insights emerged.

The interviewees selected for this research were:

- Luukas Ilves, Estonian Government CIO – As the Government CIO, Mr. Ilves is responsible for leading Estonia's digitalisation efforts and overseeing the implementation of various e-government initiatives.

- Merike Saks, Secretary General, Ministry of Finance – Ms. Saks provided a perspective from one of the ministries going through the process MEAC was leading, as well as on the financial aspects and challenges of Estonia's digital transformation.
- Ott Velsberg, Chief Data Officer, Estonian Government CIO Office – Mr. Velsberg contributed insights on data management and data-driven decision-making in the context of Estonia's digitalisation process.
- Siim Sikkut, former Estonian Government CIO – Mr. Sikkut, as a former Government CIO, offered both hindsight and future perspectives on the development of Estonia's digital transformation and its evolution over time.
- Kristo Vaher, Chief Technology Officer, Estonian Government CIO Office – Mr. Vaher provided valuable information on the technological aspects of Estonia's digital initiatives and the strategies employed to ensure their successful implementation.
- Mikk Vainik, Accelerate Estonia, Ministry of Economic Affairs and Communications – Mr. Vainik's role at Accelerate Estonia allowed him to share insights into possible innovative approaches to Estonia's digital transformation.
- Margus Noormaa, Director General, Estonian Information System Authority (RIA) – As the head of RIA, Mr. Noormaa discussed the challenges in developing and managing the central technological platforms and collaborating across the government.

The experts provided valuable insights into the details of the digitalisation process due to their direct involvement. Using this case selection method allowed for the collection of necessary data to identify the different categories or dimensions of the main concept, as viewed by the experts, and to highlight any variations (Ragin and Byrne, 2009). Furthermore, the selected cases reflected diverse backgrounds and expertise areas within the MEAC, the Ministry of Finance, and other related agencies, ensuring a comprehensive understanding of the ongoing digital transformation process.

The following chapter will provide an overview of the data gathered through the interviews with the Estonian public sector experts. Considering the limitations of this master's thesis, a significant proportion of the overall data will not be covered here but is instead indicated as a basis for future research in the conclusion part of this paper.

Following a semi-structured interview format, the experts were able to cover various aspects of the digital transformation process described in the documents. Analysing the data revealed

three main themes for the discussions – definition, challenges, and opportunities for Estonian public sector digital transformation.

Definitions

All of the interviews started with a question about the word "transformation" and its equivalent in the Estonian language. The term "transformation" has various translations, often conflicting or at least variable in nature. The word currently in use most is "turn."[4] The experts approached the question differently, some of them separating the words "digital" and "transformation," some jumped to define them as one expression.

Mikk Vainik

Transformation: *Transformation is getting from point A to point B. It is important that the starting point and the destination are both defined.* (Vainik, 2023)

Digital transformation: *In this term, the word "digital" is completely useless for me. Transformation requires moving - in certain parameters: organisational, personal, social, probably others – moving from point A to B. I am technologically agnostic in that sense. If you ask me now whether Estonia needs a digital transformation, I ask back whether Estonia needs a transformation? And answer my own question by saying that the social contract needs to be constantly renewed. It doesn't matter whether it is analog, digital or some next thing that is added to the transformation. It is necessary, because we need to respond to the environmental, geopolitical etc. megatrends that emerge around us. So, coming back to transformation, I would say it is a social contract about what we want to achieve and how to make it happen.* (Vainik, 2023)

Luukas Ilves

Transformation: *"Change or changing. Transformation has a subject, the one who is carrying it out, it is not like bad weather that just happens. I would not limit whether it is a destination*

[4] The notion is often used in conjunction with the "green- and digital turn". Considering the levels of maturity for public sector digitalisation and greening, this comparison becomes evidently unsuitable.

or an end result, as the term itself is abstract enough. It implies to a set of actions, a portfolio of activities. In other words, whichever word is useful to describe the activities we are actually doing, I am ok with the label, regardless of if it is the "right" definition." (Ilves, 2023)

Digital transformation: *"Before answering this question, we'll need to answer, "what is digital?" And I am not trying to define this word in the core sense of it, but I think if we are using it in this context, it does not imply only the technological elements. The GDS answered this question some 5 or 10 years ago – what we mean by digital and not just technological change, but including that in the digital age, users' expectations, ways of working, processes, context has changed. Therefore, digital transformation is a change that is driven by the digital environment. This means the internet culture, the way business is carried out, means of communicating with the customer. When thinking comprehensively, one needs to think about layers in the Digital Age, the way that we are in our work – layers such as technology, architecture, data, user experience, at least those. Perhaps more, such as culture and communications, that we are not currently focusing on, but perhaps should. Therefore, digital transformation is a change in processes, organisation, activities, that is driven by at least one, of not several or all of those layers of digitality.* (Ilves, 2023)

Margus Noormaa

Digital transformation: *"Turn, digital turn. For me it is weird to talk about a digital turn in Estonia today. I am still confused what it is that we're talking about. We don't have a common agreement of what it is. For me the digital turn happened in the 1990s. I would definitely not talk about it anymore today. Today we are talking about normal development and there is nothing to turn anywhere. For me a digital turn was very clearly the process from analogue to digital and how we concretely swiped the analogue option from the table and built a new process, using the digital opportunities. Estonia as a country has already digitally transformed, the physical and virtual state mean essentially the same thing for us. Rather, the question for us is whether the way we are working as a state, administratively, is in accordance with that. I would say it is not, there is room for improvement. One area that I see where we are in the very beginning of the transformation is jurisdiction and legal aspects. With those we are in the 20th century. Starting from the whole process itself, and the way we take every regulation word-by-word. We are not considering how much the world has changed. Today, we cannot continue too long with this rigid process."* (Noormaa, 2023)

Merike Saks

Transformation: *"Transition. The first that comes to mind. The second one is change*." (Saks, 2023)

Digital transformation: *"Now this I have not completely understood. For us (Ministry of Finance), the idea Luukas (Ilves) keeps talking about in so many words is right, but the headline seems off. Like, it is very difficult to understand what he is trying to communicate in these two words, what is this "digital turn," this is not clear. Again, it depends on whether you understand the content, and then you already convey it in your own administrative area with the words that you use yourself, well then there's no problem. But of course, if you want to rant like, well, maybe some ministries have done, well, then you can just rant endlessly about this topic. In our area, we have not quite gone along with the idea of eating the same soup in a completely different way. We are being pragmatic, understanding that we need to have a central picture and central coordination for our services. That we have the services that we are providing and that the "digital turn" will have to support us providing better services. We are not on board with the idea of rethinking and redesigning all of our services, however I do agree that some of our services need to be, as they are completely unreasonable."* (Saks, 2023)

Ott Velsberg

Digital transformation: *"Turn, or change. These are not synonyms. If we add the digital and take the term 'digital turn', which we are currently using, then the digital turn would somehow mean that we are pivoting away from the current direction. What we really mean is managing change. We actually have a solid foundation in place in many of the organisations. Therefore 'change' is a better word for the context. The question is how the business owner will, according to their business strategy, using whatever digital technology, deliver their business objectives."* (Velsberg, 2023)

Kristo Vaher

Transformation: *"A transformation is a change from one form to another. For me, in the world of software developers, it is always reflected in, for example, TOGAF, define where you are.*

Knowing where you are allows you to figure out where to go. Transformation is the change of these two things that must be managed. Everyone must have a shared understanding of where we want to go. But it always assumes that we know where we are. You need both, without it you cannot transform." (Vaher, 2023)

Siim Sikkut

Digital transformation: *"Change, I would talk about change. A digital change. I must admit I don't think about the context that much, whether it is a concrete beginning-to-end process or a step-by-step development. I would not draw a line. For me, the definition matters less. If there are concrete actions we can agree upon, let's go with those and start moving."* (Sikkut, 2023)

Challenges

A number of core challenges can be derived from looking at the data on definitions alone. However, the interviews provide material for an even more in-depth view of the obstacles Estonian public service practitioners are facing in terms of digital transformation.

The Governance Dilemma

A recurring theme from the interviews was the lack of coordination between different government entities involved in the digital transformation efforts. This has led to the development of duplicate solutions and inefficient allocation of resources. Both Merike Saks and Kristo Vaher emphasised the need for a central view of the existing services and infrastructure to prevent resource misuse and streamline public service delivery (Saks, 2023; Vaher, 2023). This central view should involve architects from all ministries to ensure a cohesive approach to digital transformation across the government.

In terms of governance models, the debate alternates between a centralised and decentralised approach. Interviewees have differing views on which model is most suitable for Estonia's digital transformation. Siim Sikkut (2023) notes that striking a balance is challenging, as shifts towards more centralisation may diminish sectoral ownership of digital transformation. Merike Saks (2023), on the other hand, expresses reservations about creating a separate digital ministry, arguing it could further isolate IT and digital matters.

While discussing the balance between the centralised versus decentralised model of governance, Siim Sikkut referred to the phenomenon he had observed in all the digitally more developed countries. *"We can see how it can be done from other countries, but the price is that the necessity and feeling of ownership around digital transformation the in the sector ministries will decrease. In fact, you constantly have this shifting of scales. That, on the one hand, sectoral nature and responsibility and the will to understand, versus the speed of results. Today, I have not yet seen a system in the world where it is possible to have a high speed across the board. So, it is still a balance between the two*." (Sikkut, 2023)

In terms of what the best solution is, there is no clear consensus. Merike Saks points out that the idea of creating a separate digital ministry is not optimal, arguing that it would further isolate IT and digital matters (Saks, 2023). Sikkut somewhat disagrees: "*Well, intuitively, I think that the Estonian model should be made more central. But it's stuck in one premise, which not everyone might share, I'll say it honestly. That this premise is to get faster results that are visible. Well, it is, for speed."* (Sikkut, 2023)

Several of the interviews suggest that the MEAC should focus on policy development, central e-services, and coordination with line ministries. Meanwhile, digital services development should be moved exclusively to the agency level to encourage faster development and efficient resource allocation (Ilves, 2023; Noormaa, 2023; Sikkut, 2023).

The interviews also highlight the importance of long-term planning in the digital transformation process, as well as the difficulty in evaluating what does "good" look like in these plans. Margus Noormaa and Merike Saks recall the successful model of the Estonian Tax and Customs Board, who were able to build their business strategy and IT systems based on a long-term plan (Noormaa, 2023; Saks, 2023)

However, when it comes to the question of whether the Ministry of Finance should step in and have a greater role in the allocation and evaluation of the resources, she doubts the ability to assess and approve these plans, suggesting that the competence lies with the Ministry of Economy, who are currently responsible for enforcing the transformation plans (Saks, 2023). Moreover, while long-term planning is seen as a necessary part of better coordination and governance, there is also scepticism towards development plans and their relevance to daily operations. As Vainik points out, many officials do not strictly follow *Eesti 2035* in their work, and the connection between these strategic goals and daily operations is not clear. This lack of

focus on long-term planning is hindering the overall progress of digital transformation in the public sector (Saks, 2023; Vainik, 2023).

Opportunities

Even though the vision is unclear, the digital transformation process enjoys a high level of trust and support from the top executives across the public sector, which can accelerate and facilitate its implementation. Margus Noormaa also emphasises the importance of top management involvement in digital transformation: "*It starts with the top managers. Those institutions where the top managers have understood what their role is and where the top manager doesn't even have to know much about IT, but he has to dare to see this future in terms of his business, to be able to vision. He must not bind himself to the fact that I think it is not possible. It's not the CEO's business. He has to think about how to do business as well as possible. The only correct approach today is one where the end customer is the one from whose point of view things are done."* (Noormaa, 2023)

While on the one hand acknowledging the accomplishments made, the expert interviews also indicate a necessity to look for inspiration and best practices from other advanced digital nations. Estonia's reputation as a digital nation is seen as an asset that can attract international partnerships, investments, and talent. Successful digital transformation can reinforce Estonia's reputation as a leading digital nation. However, as Vaher points out, if the digital transformation process does not deliver on its promises, this could damage Estonia's reputation and erode public trust (Vaher, 2023). On the one hand, there is no burning platform as yet. As Luukas Ilves puts it: "*As long as we don't have this discussion, we're just not going to do these things, but I don't see that there's a tipping point where if we don't do it now, it's all going to fall apart*." (Ilves, 2023)

The interviewees see that the digital transformation process provides the opportunity to create public services that are more responsive to the needs and preferences of the people. At the same time, Margus Noormaa emphasises that citizens may not initially realise the value of innovative services until they are implemented, as exemplified by the introduction of the Estonian ID card. Noormaa (2023) recalls the scepticism surrounding the ID card's introduction, but once services were built around the card, it became an essential part of daily life. This insight underscores the importance of pushing boundaries and implementing new ideas even when their benefits are not immediately apparent.

Merike Saks emphasises the importance of collaboration between the business side and IT: *"Rather, yes, I see this role, that every ministry could have, well, really this enterprise architect. Even in every organisation there should be one. Since they will actually be the key persons who will shape it in their administrative area, then their management will also be carried out by the Ministry of Economic Affairs. There needs to be strong coordination so that they would all think alike."* (Saks, 2023)

One of the significant opportunities for public sector digital transformation in Estonia is data utilisation. Although policy documents emphasise data-driven decision-making and using public data for better services and processes, Estonia's reality remains far behind (Velsberg, 2023). The problem lies in the lack of legislation and, more profoundly, in data literacy. This emphasises the significance of enhancing data literacy and agency in the public service context, which is something Velsberg points out in his replies as well. Data literacy refers to the ability to ask the right questions from the data. If the data is not used to explore people's needs or the impact of taxes, it becomes a burden rather than an asset (Velsberg, 2023). As Velsberg suggests, "*we are not using it to its maximum potential*."

Kristo Vaher emphasises the importance of incorporating AI solutions, like Chat GPT, into Estonian public services. This requires standardising process descriptions and making them accessible to both humans and AI systems. To achieve this, Estonia must undertake a comprehensive overhaul of process descriptions, ensuring user-friendly interactions between citizens and government services. Vaher states that the current situation is fragmented, which presents challenges in coordinating and implementing digital transformation across sectors.

Mikk Vainik highlights the need for innovators and innovation programs, such as Accelerate Estonia, to address the risks and challenges of digital transformation. He argues that the public sector needs innovators due to the inherent risks and challenges of digital transformation. The public sector must foster an environment that supports these initiatives, as they play a crucial role in advancing Estonia's digital infrastructure (Vainik, 2023).

Discussion

The following chapter will provide answers to the second and the third research questions, by analysing the data gathered from the policy documents and the expert interviews. The interview guideline for this research was structured to uncover the main themes the practitioners found most relevant in relation to the Estonian public sector digital transformation. Out of the data, three main themes emerged – the definitions, challenges, and opportunities. In addition, the final part focused on recommendations related to digital transformation in the Estonian public sector. The chapter is divided into sections echoing the main themes. As the fourth theme – recommendations – is related to the practical output of the thesis, this part has been moved to the Appendices.

The policy documents, namely the Digital Agenda for 2023 and the memo on starting digital transformation of the Estonian public sector, underscore the urgency and importance of the process. At the same time, the lack of a clear definition and scope suggests a gap between the designed policies and their desired outcome, which indicates errors in policy formulation – a key aspect of any effective policy process, as defined by Howlett et al. (2014). While the policy documents list tasks and strategies for implementing and improving digital transformation, they fall short in clearly articulating the ultimate objectives. As Felstiner et al. (1980) stated, the ways in which problems are defined and framed significantly influence how they are approached in subsequent policy activities (Felstiner et al., 1980, cited in Howlett et al., 2020, p. 102).

A key factor in setting a policy agenda is defining a problem, exploring potential solutions, and assessing the extent of political support for actions (Howlett et al., 2020). When applied to the current Estonian context, these theoretical considerations highlight the need for a clear, coordinated approach to digital transformation across the government. Moreover, this alignment should not only manifest in policy formulation but also in the decision-making processes. As Peters and Pierre (2016) rightly pointed out, governance is mostly a matter of decision-making, involving setting priorities, allocating resources, and enforcing rules and regulations.

A recurring theme emerging from the expert interviews points to the need for greater clarity in defining digital transformation and underscores the necessity of setting up effective coordination mechanisms to prevent resource misuse and streamline public service delivery.

Reflecting on the discussions of centralised versus decentralised governance models, the implications of these theories become even more significant. For example, Siim Sikkut's reference to the balance between centralised and decentralised models of governance highlights the necessity of defining clear priorities and allocating resources effectively in both models. Linking the theoretical frameworks to the policy and governance challenges of Estonia's digital transformation underscores the importance of clear problem definition, effective policy formulation, and sound decision-making processes.

Definitions

This section will answer the second research question posed in the beginning of this research process – *What is Estonian public sector digital transformation according to the public sector practitioners?*

Even though it is not necessary per se to define what digital transformation in the policy documents is, in the current context of Estonia, it would be useful. Digital transformation, new technologies, AI, not to mention e-Estonia, are buzzwords more than definitions. However, the Estonian government is in a situation where the definition determines direction and ambition, and the official documents leave it unclear whether the these are rightfully understood.

Examining the policy documents reveals the inconsistency around the Estonian translation of "digital transformation" on a practical policy level. This inconsistency evidently creates confusion among the interviewees, who are themselves high-level officials responsible for different aspects of the public sector digital transformation. Interviewees such as Sikkut, Ilves, and Vainik acknowledge that an unclear definition is not necessarily problematic as such. However, it becomes a hindering factor when there is an assumption that the term is commonly understood.

The differences in the interviewees' interpretations of digital transformation can be understood through their individual emphasis on various aspects of the term. For example, Luukas Ilves views digital transformation as a change driven by its digitally influenced environment, involving aspects of internet culture and shifts in business operations. On the other hand, Siim Sikkut uses the term "digital change," seeing transformation as a lasting process of improvement rather than a project with a specific beginning and an end. He notes that "*the difficult part is actually managing the change, not managing the digital components*" (Sikkut,

2023). Kristo Vaher suggests that digital is a filter in the transformation process. The question is not about which drives the other—digital or change—but rather if digital is the most logical method to achieve the desired outcome. In most cases, digital solutions enable faster transformation, but it is essential to have a purpose-driven transformation process. Digital as a means for transformation becomes relevant if digital tools are required in the roadmap to achieve the desired state (Vaher, 2023).

Despite the differences, there are commonalities in the interviewees' understanding of the term. Most of them agree that digital transformation involves change or a shift in at least one, if not all – of the processes, organisation, or activities. They also acknowledge the role of digital tools and technologies as enablers of this transformation, while emphasising that the focus should be on managing the change rather than the digital components. Additionally, several interviewees emphasise the importance of a shared understanding and social agreement on the goals of digital transformation. They recognise the need to constantly update this agreement.

To combine the perspectives, a definition based on the practitioners' view of what digital transformation in the Estonian public sector could be is the following:

A purpose-driven process of change in activities, processes, and organisations, enabled by digital tools and technologies, that delivers a shift from current to desired state. The emphasis is not on the implementation of digital solutions, but rather on change management to, when appropriate, utilise digitalisation as a method to achieve the desired strategic outcomes more efficiently. A shared understanding of the present state and a common vision of the desired future is needed to effectively manage the process and align efforts across different sectors and stakeholders. This requires a social contract on the objectives to be achieved to provide stability for execution, but at the same time flexibility to respond to evolving circumstances such as environmental changes, geopolitical shifts, and emerging megatrends.

Challenges

What both the academic and the Estonian practitioners' definition lack is the comprehension of the distinction between digital transformation and public administration reforms. While the former focuses, to a varying level, on changes in service delivery and on how technology changes organisations, the latter is more specific about the change management side. However, neither spells out the distinction. While it is evident that the governance and organisational

models that were developed before, or during, the early stages of e-Estonia, are not delivering the desired outcomes, reforming the governance model as such is not on the agenda in the policy documents, yet.

This ties into the discussion on the third research question for this thesis – *Is the meaning of digital transformation clear enough (and legitimate) for effective policy formulation?*

Drawing from the challenges and opportunities identified by the interviewed practitioners, it becomes apparent that the problems all seem to be symptoms of the core challenge Estonian public sector digital transformation is facing today – the lack of common purpose. Despite the existence of all the necessary building blocks, what is lacking from the policy documents is the common vision and value proposition on how the public sector digital transformation, by fulfilling strategic goals from the digital agenda, contributes into the transformation of the government and Estonian society as envisioned in *Eesti 2035*.

As the variations in the definitions paragraph indicate, the officials who are themselves responsible for carrying out the transformation efforts in their respective fields either have a diverse perspective or are simply uncertain of what the desired result is supposed to be. In addition, what the interviews indicate is that merely stating goals in a document would not be sufficient, as for example Saks and Vainik point out, 95% if the civil servants have very little knowledge of or regard for what is actually written in the strategic documents.

Compared to the development of the first wave of digitalisation in Estonia since the 1990s, which at least in retrospect was driven by a common goal, the more each sector ministry advanced in their own services, the more fractions and frictions emerged with the decentralised digitalisation process. In accordance with that model of governance, the current development plan sets ambitious goals but only holds responsibility for carrying out a small proportion of them. The combination of decentralised governance and the absence of a shared vision and clear standards emphasised by the experts can lead to inconsistent approaches and outcomes across different ministries, as well as loss of momentum. What emerges is the dilemma between a decentralised versus centralised approach. Both have the positive and negative aspects, however a decision eventually needs to be made.

Kattel and Mergel argue that Estonia owes the past success of its digital government largely to the decentralised approach (Kattel and Mergel, 2018). This strategy enabled diverse ministries and agencies to craft digital solutions fitting their individual needs, thus fast-tracking digitalisation throughout the public sector. By decentralising decision-making power and

encouraging innovation, Estonia cultivated a responsive digital ecosystem (Kattel and Mergel, 2018). However, insights drawn from the interviews and expert opinions indicate that the once successful decentralised approach may now be contributing to the confusion and lack of coherence it originally sought to avoid. In order to deliver on the digital transformation goals, the interviewees stress the importance of reassessing and untangling the legacy accumulated over the past 30 years. This "legacy" is not solely technological; it also encompasses the culture and governance processes that have been gradually evolving since the 1990s.

As the interview results reveal, many the obstacles for a successful digital transformation stem from the rigid legislative system "*from the last century*" (Noormaa, 2023). This indicates yet again the difference between a digital transformation and a public administration reform and the question of whether the current ways of governance empower or hinder the smartest use of digital means in public service. What the interviews clearly indicate is that irrespective of the details of the needed changes in the public administration model, *a* change is needed. The lack of administrative capacity in the Estonian civil service has been pointed out since before Estonia joined the EU (Drechsler, 2004)

Referring to the issue of solutionism, a common theme from the interviews and the policy documents alike was that IT still dictates business strategy rather than supporting it, highlighting the lack of understanding of business architecture and its role in organisational design within the Estonian public sector. This lack of understanding suggests a disconnect between the strong IT infrastructure and the comparatively weaker business strategy for (digital) public services. This observation implies that Estonian public sector organisations may not be accustomed to thinking in terms of either business strategy or architecture when considering their procedures and operations. Drawing on the interviews, a successful digital transformation of government begins with an analysis of the added value any organisation can offer the public, followed by the internal business strategy that outlines how services should be delivered to provide this value. Only then should the technology and IT components be considered to facilitate these services.

Opportunities

As many interviews indicated, one of the strengths of the Estonian digital governance model is the strong community of experts in the civil service. In addition, levering the central role of the MEAC as a coordinator and consultant in the process would strengthen the network and overall

ecosystem for the transformation. The historical success of previous initiatives provides a strong motivation for further change and a solid foundation to build upon. The strong sense of the Estonian IT community and collaboration among stakeholders is still seen as able to foster the sharing of best practices and mutual support.

The aspect of using data as a source of information and decision-making input for the business strategy was highlighted in the interviews as well as the policy documents, which in the English translation talk about "*Data-driven governance and reuse of data"* (Estonian Ministry of Economic Affairs and Communications, 2021). While data-driven is commonly used as the definition of a successful end-state, there is an important distinction best explained by Masso, Tiidenberg and Siibak (Masso et al., 2020, p. 42). They define data-driven governance as state where data is expected to 'speak' for itself and make rational decisions, consequently side-lining human experience and analysis (ibid.). One could argue that this is merely a translation or wording nuance, and it does not matter as long as the end-state is clear. But as with the term "transformation" itself, the end-state in this case, too, is tied to the semantics. Namely, as Masso et al. point out, there is a step further from the data-driven governance, which they call data-informed or data-based (ibid.) . The difference lies in whether the data is used in context or not. This becomes relevant in the Estonian context due to the solutionist tendency and high trust in technology. Transferring this to an abstract notion of "data" risks neglecting the context and specific cultural aspects of the problems "data" is expected to solve. The risk lies in the potential dominance of data-driven decision-making over data-based or data-informed decision-making and governance (ibid.) .

Another commonly felt unused opportunity for the Estonian public sector is the potential for continuous innovation and mission-oriented thinking. This not only involves incorporating new technologies, such as AI solutions, but also fostering a culture that encourages creative thinking and challenging the status quo. The analysis brings out the need for innovation, both in technology, but more so in processes, organisations, legislations, and standards.

Concluding the discussion, the meaning of digital transformation in the Estonian public sector does not seem sufficiently clear for effective policy formulation. The confusion and ambiguity between digital transformation and public administration reform is a significant roadblock. The lack of a unified vision for digital transformation's role, as well as the current decentralised approach and fragmentation are hindering progress across the public sector. Adding to these challenges is the still existing 'solutionist' attitude, which prioritises IT over strategic thinking.

Despite these issues, Estonia's track record in digital progress, the strong community of civil service experts, and the potential role of MEAC as a coordinator all offer potential for the future. The drive for continuous innovation and change, while currently misdirected, could be harnessed once the foundational issues of vision and governance are addressed.

Summary and Conclusions

"*Mis tõi meid siia, ei vii meid enam edasi."* [5]– President Toomas Hendrik Ilves (2014)

Although this paper has taken a critical analytical view on the state of Estonian public sector's digital transformation efforts, the aim has not been to simply criticise the success so far. It seems clear that Estonia is among the best in the world when it comes to public sector digitalisation, and that has been, among other factors, due to the efforts made by the public servants. At the same time, the research conducted for this paper has clearly illustrated that, just as President Ilves concluded in his Independence Day speech in 2014, what has taken us here will not get us further.

As Jack Welch, the former General Electric CEO, aptly stated, "*If the rate of change on the outside exceeds the rate of change on the inside, the end is near"* (Welch, n.d.). In the context of the findings of this paper, this quote highlights the importance of continuously adapting and evolving. Although it would be an exaggeration to say that the end is near for the digital government, the evidence is clear that the pace of change in the world of digital technologies is exceeding that of internal organisation and governance model of e-Estonia. Therefore, it becomes evident that relying solely on the strategies (or lack of them) and approaches that have brought success thus far will not be sufficient to take the digital government forward.

The first part of this paper started with an overview of how e-Estonia became the brand and dominant narrative for Estonian digitalisation success. The aim of using that narrative as a background was also to show the power and importance a compelling vision can offer. For decades now, Estonia has gained attention, respect and admiration thanks to the narrative that started in the 1990s.

What the analysis part of this paper questioned, however, was whether this e-Estonia narrative is sustainable without some fundamental changes in the way the digital government is organised. Estonia's historical background in digital governance reveals both successes and limitations. While the country has made significant strides in digitalisation and e-services, the lack of a centralised governance model and a sustainable service delivery strategy has limited its potential for creating a universally adoptable governance model. A critical analysis of Estonia's digital transformation not only highlights the importance of celebrating its successes but also acknowledging its shortcomings and areas of improvement. Estonia has been showing

[5] Estonian for: „What brought us here will not take us further"

and telling its digitalisation journey to other countries, but, in order to continue this, the focus should shift from the *"going fast and breaking things"*[6] start-up country to a more mature digitally transformed nation, which is constantly able to learn from its past and adapt to the future challenges. That way, Estonia's experience can serve as a valuable case study for other nations embarking on their digitalisation journeys, highlighting the importance of not just embracing digital technologies but also ensuring that applicable governance models are adapted to support these new technologies. By critically examining Estonia's historical background in digital governance, policymakers, academics, and practitioners can gain insights into the successes, limitations, and future possibilities of digital governance models. Estonia's digital transformation offers a unique perspective on the potential of digital governance, but also serves as a reminder that there is no one-size-fits-all solution. A thorough understanding of the historical background and critical analysis of the Estonian experience provides valuable insights for other countries, as well as informs the policy design going forward.

The three research questions posed in the beginning of this thesis were:

What is public sector digital transformation in a general theoretical sense?

A summary of the academic literature describes digital transformation in the public sector as a multifaceted and fluid process, aimed at operational and service delivery enhancement. Driven by the adoption and integration of ICTs, its goal is to improve governance via increased efficiency, transparency, citizen engagement, and sustainable development. Although this falls outside of the scope of this thesis, it is important to note that this definition should be further developed and questioned.

What is Estonian public sector digital transformation according to the public sector practitioners?

Based on the interview results, the following definition was constructed:

A purpose-driven process of change in activities, processes, and organisations, enabled by digital tools and technologies, that delivers a shift from current to desired state. The emphasis is not on the implementation of digital solutions, but rather on change management to, when appropriate, utilise digitalisation as a method to achieve the desired strategic outcomes more

[6] *Move fast and break things* was the internal motto used by Facebook until 2014, as coined by Mark Zuckerberg.

efficiently. A shared understanding of the present state and a common vision of the desired future is needed to effectively manage the process and align efforts across different sectors and stakeholders. This requires a social contract on the objectives to be achieved to provide stability for execution, but at the same time flexibility to respond to evolving circumstances such as environmental changes, geopolitical shifts, and emerging megatrends.

Is the meaning of digital transformation clear (and legitimate) enough for effective policy formulation?

The answer to this research question, based on both the reviewed documents and interviews, is that the meaning of digital transformation in the Estonian public sector does not seem clear enough for effective policy formulation. The confusion and ambiguity between digital transformation and public administration reform is a significant roadblock. The lack of a unified vision for digital transformation's role, as well as the current decentralised approach and fragmentation, are hindering progress across the public sector. Adding to these challenges is the still existing 'solutionist' attitude, which prioritises IT over strategic thinking.

The overall conclusion of this paper, based on the Estonian public sector digital transformation case study, is that a common, clearly articulated vision can determine the success or failure of the process. For a public sector that has a track record of advanced digitalisation and innovation, clarity of direction is essential for sustainable transformation, as it is also more nuanced and differs from countries who are only setting up the initial digital services.

While in the latter cases the focus on more new technical solutions might be the key to success, in the Estonian case this could actually be counterproductive. The potentially inconvenient truth is that a product innovation will not solve the challenges for Estonia today. The desire to have big shiny new innovations misses the point of what is actually holding Estonia back from growing into a truly digital society. Innovation is needed in the way organisations are structured not so that they could do more things, but rather that they could do the things they do, but better. Having built up a legacy on both the architecture, but more on the cultural side, the capabilities that seem to be most needed are perhaps related to an even slow and steady sense-making process of what is there, then connecting all involved, so that the stakeholders would feel the need and urgency to be on board, and then and only then to shape the new organisational structure in a way that will allow the centralised (stability) and the experimental (agility) to run on common standards and culture.

While unquestionably relevant, neither the current digital agenda nor plan for public sector digital transformation do not address the core problem for Estonian digital government today – the absence of a unified vision and focus.

From expert interviews and analysis of prevalent documents, the insight is that Estonia does not need more digital services, but a smarter way to organise their delivery to take the next qualitative leap and transform. This leap is stuck behind public administration processes, organisations not designed strategically to adapt to growth or new problems. Working across silos and old systems, the challenge for Estonian policymakers and politicians today is an administrative one, to look at the country as a whole and to start the slow and steady process of creating capabilities and building the stability necessary to utilise technological advancements as they come along. There is a gap in Estonian digital governance in terms of moving from a project-based to a human-centric view. The interviews highlight the necessity for a whole-of-government approach, not necessarily by dividing or restructuring roles and responsibilities but rather looking at government functions from the "business side" followed by support from the technological side.

In the next stages of the research, insights derived from the interviews which have not fitted into the scope of this concurrent paper will be researched further. This includes comparative research on countries that the interviewees bring out as examples to follow. In addition, the interviews provide insights to the possible metrics developed for an Estonian digital maturity framework which could then be used to assess the maturity levels of all public sector organisations based on domestic rather than international metrics for defining success.

As the title of this thesis – e-Estonia: A Digital Government in Digital Transformation – suggests, Estonia is anticipating a change from e-government, that is using ICT to provide government services to citizens to a more holistic view of what it means to have a digital society that is focused on the needs of the people. As Ilves (2023) points out, the discussion starts with "*What we mean by digital*" – and that is a discussion around framing the policy problem first, and then picking the right tools, instruments, and modes of organisation to deliver the qualitative change.

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Appendix 1 - Policy Recommendations

As the initial findings from my research indicate, the core perceived problem with the digital transformation process driven by the MEAC is the lack of commonly stared vision and focus. This results in a number of methods foreseen as potential fixes to symptoms of the core problem. As one of the deliverables this paper was tasked to create was practical recommendations, the following is one possible solution for the next steps in Estonian public service digital transformation. The first one is utilising the existing networks to create a unified vision and focus for the digital transformation which is currently missing. The current development plan sets ambitious goals but only holds responsibility for a small proportion of them. To achieve these leaps, a broader social consensus must be reached.

This paper has no illusion of solving the problem by a set of recommendations alone. However, the following recommendations suggest taking concrete steps to tackle the core issue. In this process, the dynamic capabilities will be essential, as they provide for organisational change.

As the Ministry of Economic Affairs and Communication is in charge of coordinating the review of the Estonia's Digital Agenda 2030, the following points are direct suggestions for the next round of review for this document.

- Use the review process of the Estonian Digital Agenda for creating a consensus and a common vision for public sector digital transformation. The process itself is a step towards the results, not just the final document.
- Set a clear vision to guide the digital transformation strategy. The strategy should be developed in consultation with all relevant stakeholders and should be aligned with the national strategy "Estonia 2035" and the Estonian Digital Agenda 2030.
- Create a common glossary of the main definitions relevant to the digital governance, services, society.
- Tie the digital agenda with the transformation efforts, creating a common reference document for the whole of the public sector in terms of both what the goal is and how the ministry will empower all the stakeholders to achieve it.
- Assess the current portfolio of centrally provided public services, focusing on their added value as well as resource demands.
- Consider consolidating the most essential services.
- Assess the division of roles and responsibilities between the ministry and agencies, as well as between the agencies themselves.
- Define and agree upon a governance structure applicable for delivering the goals of the development plan (and digital transformation process).

- Include stakeholders from all the sector ministries, academia, and the private sector in the process of the development plan review.
- Ensure buy-in and commitments from the sector ministries on delivering the development plan goals during the review process.
- Create and routinely update a digital maturity framework for the Estonian public sector, based on domestic rather than international metrics for defining success.
- Focus on a few critical deliverables for funding and attention, while giving other areas time to develop their digital readiness. Creating dynamic capabilities to be able to move fast across the board in the next phases.
- Long-term plans should be developed in consultation with all relevant stakeholders and should be regularly evaluated to ensure that they are aligned with the overall objectives of digital transformation in the public sector.
- Empower the creation of a well-defined business strategy for all sector ministries. These strategies need to be data-based and incorporate the human-centric design principles.
- Reorganise the current and future operations – A digital agency for the development, design delivery, maintenance and updating the central services, a ministry with a focus solely on policy development, strategy, and foresight.
- Consider the implications of the decentralised approach for Estonia's digital government moving forward. This might involve finding a balance between centralised and decentralised governance, focusing on critical deliverables, and ensuring that the public sector remains agile while also establishing a stable foundation for digital transformation.
- In order to 'move fast but not break things,' a systematic step-by-step process is needed for creating the stable part, while still allowing the agility to continue. The mindset shift has to be achieved by recognising that both are needed, and that sustainable innovation requires sustainable governance.

Appendix 2 - List of Interviewees

- Luukas Ilves, Estonian Government CIO, 30.03.2023
- Merike Saks, Secretary General, Ministry of Finance, 20.04.2023
- Ott Velsberg, Chief Data Officer, Estonian Government CIO Office, 12.04.2023
- Siim Sikkut, former Estonian Government CIO, 21.04.2023
- Kristo Vaher, Chief Technology Officer, Estonian Government CIO Office, 12.04.2023
- Mikk Vainik, Accelerate Estonia, Ministry of Economic Affairs and Communications, 18.04.2023.
- Margus Noormaa, Director General, Estonian Information System Authority (RIA), 13.04.2023