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COLLABORATIVE GOVERNANCE INITIATIVES: ESTONIAN E-GOVERNMENT.

Master’s Thesis

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Author's Declaration of Originality

I hereby certify that I am the sole author of this thesis. All the materials used, references to the literature, and the work of others have been referred to. This thesis has not been presented for examination anywhere else.

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Abstract

Public sectors worldwide have used collaborative governance initiatives to create more diverse and effective e-services. Estonia is a typical example of a small country that has expanded its digital transformation in e-government by collaborating with industry partners, public sector organizations, and workgroups. Although this is a seemingly prevalent phenomenon in Estonia, there is little or no documentation regarding how they collaborate among stakeholders to steer digital transformation.

The main objective of this study is to conceptualize a collaborative e-governance initiative in Estonia's e-government. The primary aim of the investigation is to understand how these collaborative e-government initiatives work in Estonia. The study examines the prerequisites for effective collaboration and some of their problems, the modes by which they collaborate, and some of the challenges faced during collaboration. The exploratory case study methodology was used to examine the phenomenon in Estonia, and a qualitative approach of analysis was used to approach and find the results of the study. The Nvivo tool was used for analysis. This study looked at some theories and frameworks that color collaborative governance. Empirical results were obtained through interviews with stakeholders engaged in collaborative governance initiatives projects. The results show that the prerequisites for collaborative governance are shared goals and interests, good cooperation amongst stakeholders, and budget and government priority. However, this process also had some challenges, including development plan constraints, legislative constraints, and a lack of IT skills.

As a result of this study, collaborative governance initiatives in Estonia have been explored, allowing further research to be developed regarding this phenomenon.

Keywords: Collaborative governance, e-Governance, Digital transformation.

This thesis is in English and is 46 pages long, including six chapters, three figures, and one table.

List of abbreviations and terms

NGOs	Non-governmental Organisation
e-ID	Electronic Identity
ID	Identity
Mobile-ID	Mobile Identity
PPA	Politsei-ja Piirivalveamet
RIA	Riigi Infosüsteemi Amet
RTE –	Real-time Economy
G2B	Government to Business
G2G	Government to Government
G2C	Government to Citizen
IFCG	Integrated Framework for Collaborative Governance
CGR	Collaborative governance

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1 Introduction

1.1 Background of Research

Collaborative governance emerged due to previous failures and public service management accountability issues. On a positive note, it resulted from increased institutional capability and understanding (Ansell & Gash, 2008) . Stakeholders such as government agencies, non-governmental organizations, community groups, companies, and people come together to improve the chances for mutual benefit, increase their comprehension of and trust in other stakeholders, pool knowledge and information, improve coordination's efficacy and efficiency, and raise the decision-making process's legitimacy (Ansell, 2012). The relationship between the government, NGOs, and work groups has changed, and there is a tighter flow of work processes and information flow among them (Dawes & Pardo, 2002). Collaboration in e-government has led to value creation (Gil-Garcia, 2012) (Luna-Reyes, Picazo-Vela, Luna, & Gil-Garcia, 2016) , and its benefits include increased efficiency, effectiveness, service quality information sharing, and interoperability among the public sector and stakeholders such as private organizations, NGOs, workgroup and citizens (Huxham, Vangen, Huxham, & Eden, 2002). Thus, making collaboration an essential aspect of realizing the objectives and benefits of e-government. (Gil-Garcia, 2012). Goals and objectives that otherwise will have been difficult or impossible to be achieved by the public sector alone. (C. Huxham and D. Macdonald, 1992).

Moreover, several developed and developing countries have used digital solutions to transform how governments operate, engage, and provide services for citizens. This consequently improves government processes and consequently improving public service delivery. (Blom & Uwizeyimana, 2020). With the implementation of e-government solutions, we often encounter complex policy issues, such as different attitudes and conflicting perspectives. This complex issue most likely arises at the intersection between innovation and technology (Lang & Brüesch, 2020). Conventional methods of solving such complex public sector problems have proven not to work. So therefore, they require

enabling a condition of governing whereby actors of that system operate to deal with these problems (Termeer, Dewulf, Breeman, & Stiller, 2015). According to the existing literature, these collaborative efforts are faced with challenges which have to do with substantial problem-solving challenges, collaborative process challenges, and accountability challenges (Provan & Kenis, 2008) (Moynihan, et al., 2011) (Ansell & Gash, 2008). Despite these challenges, most nations have recorded considerable success in e-governance and have consistently involved the private sector, industry stakeholders, and society workgroups with the public sector to provide citizen-centric e-services. Estonia is a typical example of a country that has, over the years, used collaborative governance in its e-government endeavors. Estonian government's use of collaborative governance initiatives to steer and implement digital transformation to improve public service delivery and governance dates to the early 2000s. These governance collaborations have been highlighted to have contributed immensely to the Estonian implementation of e-services and the development of e-government solutions.

Despite the success achieved through these collaborative governance initiatives, there needs to be more literature available concerning the real-life dynamics of this collaborative governance in Estonia. There is a need to understand how multi-agency collaborations are being managed to tackle complex issues about the development of Estonian e-Government while faithfully achieving the set goals and objectives. This study seeks to fill the literature gap on collaborative governance in Estonia, focusing on how industry partners, workgroups, and other stakeholders, together with the public sector, collaborate to steer digital transformation in Estonia's e-government. The motivation of this study is to understand how the public sector has efficiently driven digital transformation through industry partners, work groups, and the private sector to enable more efficient and citizen-centric digital solutions. According to the author, this phenomenon is worth documenting.

To understand how this collaborative governance phenomenon can drive digital transformation in the public sector, the author will document some existing collaborative governance initiatives and discuss the prerequisites for collaborative governance initiatives to achieve their intended purpose. The drive towards collaborative governance is highly steered by the wicked problems faced by the public sector, which require more social parties to come together and solve these problems; unfortunately, not every

collaborative governance initiative has succeeded because of the complexity of these interactions.

Another great motivation of this study is linked to the objectives of the Gov-Stack project, which aims at helping governments build sustainable, cost-effective, time-efficient, and resource-efficient digital solutions by reusing existing tools and international best practices from other advance governments instead of creating new ones. Conceptualizing collaborative e-governance in Estonia will serve as a bedrock for countries seeking to steer digital transformation through joint e-governance initiatives. Moreover, lastly, the study will look at the various collaboration modes used to achieve needed collaboration results and the challenges the phenomenon has faced in Estonia with their possible solutions.

1.2 Research Questions and Objectives

As mentioned earlier, the Estonian government has used collaborations with industry partners, work groups, private sector to govern and steer digital transformation in the e-government. This is evident through the various e-government successes recorded by Estonia as a nation. This study is built around understanding and conceptualizing collaborative governance initiatives in Estonian e-government. The study looks at the required structure through which collaborative governance can thrive to create digital innovations in the public sector, the components of these interactions, and the impact of collaborative management. To conceptualize collaborative e-governance in Estonia, an overall question was formed:

RQ: How do collaborative e-governance initiatives work?

Collaborative e-governance initiatives have been used over the years to coordinate and steer digital transformation in e-government. This is mainly because the government alone cannot deal with the complex issues it faces and so must collaborate with the private sector, industry partners, and other working groups. To answer this question, we go further to ask the following questions:

SRQ1: **What are the prerequisites for collaborative e-governance initiatives?**

This question will allow us to understand what is needed to govern these collaborations to ensure that they achieve their goal. Various stakeholders have their own goals and objectives; therefore, this question will investigate how this conflicting interest has been managed to achieve public sector goals.

SRQ2: What are the various collaboration modes employed?

To understand how collaborative governance is carried out, answering this question will allow a thorough analysis of how the public sector interacts with the various stakeholders to steer digital transformation, thereby creating citizen-centric e-services.

SRQ3: **What are the challenges encountered during collaborative e-governance initiatives?**

The benefits and disadvantages associated with collaborative governance initiatives will be assessed. The difficulties faced in collaboration among various stakeholders in steering digital transformation will be analyzed.

1.3 Research Methodology

Case study research makes it possible to observe, explain and explore a phenomenon in a real-life setting. With this methodology, we can systematically look at events, collect data, analyze information, and report results. Case study research methodology allows us to use multiple sources of evidence from prior research. (Verner & Abdullah, 2012). Yin defines case study research as "an empirical inquiry that investigates a contemporary phenomenon within its real-life context; when the boundaries between phenomenon and context are not evident; and in which multiple sources of evidence are used." (Mahamudul & Yousuf, 2019). This means only a particular area of research or interest is picked up and examined in detail (Yin R. K., 1984). The case study research method will allow for dealing with multiple pieces of evidence, including documents, interviews, observations, and others (Yin R. k., 2002). This method of Research will allow the author to explore and describe data in real-life situations and explain the complexities of real-life situations. (Zainal, 2007).

In studying the phenomenon, the author explores answers to "what," "how," and "why" by focusing on contemporary events without exercising any control over actual behavioral

events (Yan & Lihua, 2008). This will help generate insight into this phenomenon inductively and is suitable for cases not subject to extensive empirical examination. The advantage of this research method is that it is proper for fair, comprehensive, open-ended research, helps identify patterns in a phenomenon, and suggests conceptual perspectives that can serve as fruitful guides for subsequent investigations (Ogawa & Malen, 1991).

Qualitative data collection and analysis methods will be used for this study. The five stages of qualitative data, which are: - compiling, disassembling, reassembling, interpreting, and concluding, will be used to draw meaningful insights into the study. In compiling, the researcher will transcribe interviews to ck map out meaningful data to answer research questions. This is the first stage of the analysis, and it saves as the base on which conclusions will be drawn. With disassembling, the data compiled is separated into smaller meaningful groups. This is done by coding; in this case, the researcher will use NVivo to identify themes, concepts, or ideas that connect each other in their data. In the reassembling stage, codes with similar connections are brought together to develop insights for the study. The researcher must make analytical conclusions from the codes and themes derived, known as the interpretation stage. And lastly, we have the conclusion stage, where the identified principal themes and concepts are used to answer the research question.

This study will use semi-structured interviews, document analysis (administrative documents, formal studies, and evaluations), and archival records (including different organizational records) for data collection. Interviews will be used to build information on the experiences of implementing collaborative governance initiatives in Estonia. Industry partners, workgroup members, and private sector and public sector officials will be interviewed. This will be done solely through Microsoft Teams. The author plans to design semi-structured interview questions, thus predefining the research agenda while allowing respondents to freely present a range of views and offer new insights. Using interviews provides questions to be asked demands deeper investigations (Scott & Garner, 2013). Document analysis will also be carried out; this will involve administrative documents, formal studies, and evaluations. In designing the interviews, the researcher's curiosity, goals, and objectives were significant factors in drafting the interview questions. Interviews were carried out with four Estonian public sector officials who have participated in collaborative e-governance initiatives. The interviewees include two

members from the Estonian Real-Time Economy group, the former National Digital Advisor for Estonia, and a member of the E-Residency program, who will be anonymous.

Marten Kaevats, the former National Digital Adviser for Estonia, was responsible for digital innovation in Estonia, driving resilient change toward more adaptive governance through technical, cultural, and other crucial components. He engineered talks about IT innovations to various parties such as companies, academia, and other government entities.

Sirli Heinsoo from the Ministry of Economic Affairs and Communications in Estonia deals with real-time economic topics. She has been leading the Real-Time economy workgroup since 2016, and her role is to drive the real-time economic ship in Estonia and boost understanding and activities across borders. Her role as a project manager in the real-time economy project determined her contribution to this study.

Kristi Aruküla is the Real-Time Economy international relations manager at Estonia's Ministry of Economic Affairs and Communications. She coordinates cross-border relationships for stakeholders in the real- Time Economy group. This made her a relevant point in this study.

The person interviewed from the E-Residency program required their personal information to be kept, so their responses were registered as anonymous.

1.4 Structure Of Work

To ensure the information in this research is presented logically, the author structures the research paper in the following ways: - The first chapter covers the introduction of collaborative governance initiatives, the motivation of the topic, followed by the research objectives and the research questions to be explored. The second chapter looks at collaborative governance in concept. The theories that led to collaborative governance and the theories governing collaborative governance, collaborative governance structure, problems faced, and possible solutions of collaborative governance. The third chapter examines collaborative governance-specific country examples from Mexico, the UK, Australia, India, and New Zealand. The fourth chapter looks at Estonian's context, the

background of collaborative governance in Estonia, and how it has been utilized so far. The fifth chapter presents the result and analysis of the research with the discussion and limitations; the last chapter discusses these results and the conclusion.

2 Literature Review

2.1 Theories of Collaborative Governance

According to (Ansell & Gash, 2007), collaborative governance is "A governing arrangement where one or more public agencies directly engage non-state stakeholders in a collective decision-making process that is formal, consensus-oriented, and deliberative and that aims to make or implement public policy or manage public programs or assets." Therefore, in collaborative governance, public and private actors work collectively in distinctive ways, using processes to establish laws and rules to provide public goods (Ansell & Gash, Collaborative Governance in Theory and Practice, 2008). Engaging citizens, other governmental agencies, and private and voluntary organizations enable the public sector to take full advantage of the available external knowledge. It creates interactive linkages between the internal and external stakeholders, thus making room for novel solutions to public policy challenges. Instead of the public sector outsourcing innovative processes to the market, collaborative innovations are used (Kattel, Lember, & Tõnuris, 2020).

Collaborations can occur formally with ties from within a specific policy area and informally emergent and short-term. Public sector collaboration can be public-public, public-private, public, and non-profit. Public-public collaborations involve collaboration between agencies and departments of the same level of government or intergovernmental collaborations with federal, state, and local governments. Public-private collaborations, which are the most prevalent, involves the government sharing resources, responsibilities, risk, and benefits for public service with a private sector organization. In this case, the government remains solely or partially accountable for this service. Public-Non-profit Collaboration is when the government jointly develops a service whereby the public and

non-profit participants share responsibility for program design, performance, and evaluation (Dawes & Pardo, 2002).

There have been various theories that scholars have explored to explain collaboration between government and stakeholders. The literature on the historical background, definition, areas of use, benefits, and limitations/risks of collaborative governance is examined within the theoretical contexts of New Public Management (NPM), New Public Governance (NPG), and public value. New public management is the most visible sign of the rapid changes in perspectives on how government should run the public sector. NPM emerged from asserting that private-sector managerial techniques were superior to public administration. The critical elements of NPM included attention to lessons from private sector management and a focus on entrepreneurial leadership within public sector organizations (Osborne, 2006). It was assumed that the superiority of private principles could improve the efficiency and effectiveness of products and services provided by public organizations. New public management (NPM) is the theory of the most recent paradigm change in how the public sector will be governed. The theory of new public management contains insights from game theory and the disciplines of law and economics. ("New Public Management") (Lane, 2000). NPM focused more on market power in allocating social resources and solving the problem of the public. Still, it ignored the effect of other organizations in the public administration.

Another important theory that contributed to the emergence of collaborative governance is "The new public governance," as a new paradigm of public administration provides a new mode of practice for the current government of public affairs management. The NPG was a theory extensively adopted after NPM emergence. NPG entails a profound change in the government's role and the relationship between government and civil societies (Runya, Qigui, & Wei, 2015). (Gerry Stoker 1999) as cited by (Runya, Qigui, & Wei, 2015) made five brief introductions to the New Public Governance, stating that the government was not the only power center. Public and private institutions exist to exercise authority if the public recognizes their authority of power, and they can be power centers on different levels. Public responsibility was on the government, non-government organizations, and individuals. Government, non-government organizations, and individuals depend on each other, and this power dependency must form a self-organization network. The governments needed to pass new tools to coordinate and

integrate social resources instead of using authority and command. (Runya, Qigui, & Wei, 2015). New Public Governance is an administration mode that includes a pluralistic governance body, the government, the private sector, non-profit organizations, and a series of social groups consulted and negotiated to adapt to the changing social affairs.

Several frameworks exist in understanding collaborative governance frameworks, one of which is the Integrated framework for collaborative governance by Emerson, Nabatchi, and Balogh. The Integrated Framework for Collaborative Governance (IFCG) describes a system where cross-boundary collaboration is used for decision-making and activity. This framework depicts collaborative and collaborative dynamics and collaborative actions as essential critical terminates of the quality of CGR and to extend to which they are effective. In this framework, we can see that the external environment is crucial in forming CGR. The environmental context influences the CGR, and the CGR influences the environmental context. The CGR works through drivers and elements. These drivers include leadership, powerful incentives, interdependence, and uncertainty (Emerson, Nabatchi, & Balogh, 2011).

Collaborative dynamics, one of the critical determinants of CGR, can be formed through four iterative processes: - discovery, definition, deliberation, and determination. Discovery entails detecting participants shared with purpose; after detecting the shared value, there is the need to define what values and goals will be achieved. Deliberation includes the hard and soft conversations amongst participants to achieve goals. Determination means participants decided ultimately to produce a variety of outputs and outcomes. Collaborative dynamics consist of principle engagements, shared motivation, and capacity for joint actions. These three dynamics work together to achieve the shared purpose of CGR (Emerson, Nabatchi, & Balogh, 2011).

For collaboration to be effective and to achieve its objectives, there must be shared motivation. Shared motivation aims at reinforcing a cycle of four elements: mutual trust, understanding, internal highlights, and commitment. Shared motivation highlights the personal and relational aspects of collaborative dynamics. Trust is an essential aspect of collaborative governance. It reduces the level of monitoring, thereby reducing the cost of governance, improving investments and stability in relationships improving learning and

innovation. Trust only happens with time as people work together with each other. (Emerson, Nabatchi, & Balogh, 2011)

Secondly, we have Principal engagement which is a critical component of collaborative dynamics is the collective consensus amongst participants with different values, interests, and cultures. This includes stakeholders collaborating through face-to-face or virtual formats, cross-organizational networks, or private meetings. This helps bring people with different identity goals to solve problems, resolve conflict, and create value. This will mean the decision will be civil, fair, inclusive, and balanced representing various interests. Although the kind of participant will highly depend on the CGR objective, it will include clients, decision-makers, NGOs, government.

The third key component of collaboration dynamics is the capacity for joint action. Capacity for the joint action is the collection of cross-functional elements that come together to create the potential of acting and link strategy and performance. In this framework, the capacity for action has four necessary elements: procedural and institutional arrangements, leadership, knowledge, and resources. (Emerson, Nabatchi, & Balogh, 2011).

2.2 Pre-requisites Collaborative Governance

For digital transformation to be successful is not based on technology alone but an interplay of technology and governance. Collaborative governance creates a link between the vision, strategy, action plan, and outcomes of projects, thereby helping to eliminate the issues of vertical and horizontal silos that may exist. (Nielsen, 2019). Collaborative governance, despite its advantages in steering digital transformation, brings together multi actors across various sectors, which requires drivers and initial conditions to ensure success. Some of these prerequisites of collaborative governance are discussed below.

Leadership in Collaborative Governance

Leadership in collaborative governance leadership is both an initial condition and a driver of collaborative governance. Leadership includes sponsorship from people with formal authority and championships from informal authorities who engage partners in their joint work. (Bryson, Crosby, & Stone, 2015). In the organization, leaders can be

transformational, supportive, or transactional. Transformational leaders encourage others to get involved and participate in collaboration; meanwhile, supportive leaders create an atmosphere that encourages abilities and practices of collaboration. Transactional leaders use a reward system to promote collaboration (Park, Cho, & Lee, 2021).

A study on collaboration and partnerships between public and private organizations in building neighborhood information systems (NIS) in the US. The article looks at how the public, non-profit sector, the NIS team, and other institutions have contributed to building NIS systems in various cities in the US. The study identified strong leadership as a macro characteristic of partnership amongst cases in Boston and DC. It led to better consensus and implementation of the project (Hwang, 2017). Other studies have looked at leadership, considering how top management and direct supervisors can influence innovative behaviors at the workgroup level (Demircioglu & Van der Wal, 2022).

Leaders have a crucial governance function that will help govern collaborative governance initiatives and ensure that these initiatives are successful and effective aligning the interest of participants is a critical key to achieving effective collaboration. Leaders must identify the opinions and ideas of various stakeholders, align their goals, and propose solutions. The leaders are responsible for identifying and defining the direction of activity and the outcomes of collaboration. The leaders also are there to mobilize the efforts of the stakeholders.

Mobilizing stakeholders here means stimulating the various stakeholders to take up actions that will lead to desired objectives. After stimulating stakeholders to achieve desired objectives, leaders in collaborative governance organize and put into practice the goal of stakeholders. Organization, in this sense, refers to putting together human, financial, technological, and legal resources to stimulate network development. This will help provide an environment with favorable conditions for productive interactions. Another function of leaders' collaborative governance initiatives is integration. The leaders integrate participants and their resources, which benefits the stakeholders as they can share knowledge, plans, and activities that will help achieve joint decisions. Integration is not only limited to the stakeholder already on the network. It also helps to attract new stakeholders to join. Arbitration is a function of leaders in Collaborative initiatives that complements integration. Arbitration deals with negotiating and

deliberating conflicts and disputes in a cooperative and non-hierarchical manner. We also have monitoring as a governance function of leaders in collaborative initiatives. For collaborative initiatives, leaders must monitor the actions of the participants and the outcomes achieved. This ensures that the collective goal of the initials has been achieved. (Wegner & Verschoore, 2022)

Shared goals and understanding

Shared goals and understanding are critical conditions for the success of collaborative governance networks because it incentivizes collaborative governance initiatives. Stakeholders need a common goal to foster their interests; thus, a higher goal alignment amongst stakeholders, the higher the commitment to achieving such goals. Having common objectives makes it easier to e ensuring that all parties aim for the same result. More accessible stakeholders have conflicting goals or priorities; alignment can help prevent disputes or misunderstandings. Shared understanding also helps overcome any initial resistance or doubt that stakeholders may have regarding collaboration. It ensures that progress is continuously tracked and assessed and that all stakeholders are accountable for their efforts. (Chen, 2017). These incentives, whether negative or positive, are essential to driving collaborative initiatives (Emerson, Nabatchi, & Balogh, 2011).

Interdependence

Most times, achieving some goals by an organization alone seems impossible. Collaboration necessitates a high level of trust, mutual respect, and flexibility. Stakeholders can combine their resources, knowledge, and skills to solve complicated challenges more effectively by working together, which might have been impossible if they were to be alone—a vital aspect of collaborative governance success. Stakeholders can obtain better results by understanding their interconnectedness and acting together than working alone (Emerson, Nabatchi, & Balogh, 2011).

2.3 Collaborative Governance Modes

Modes of collaboration in digital transformation ensure that collaboration is carried out to achieve certain benefits. There are various modes through which collaboration could be established.

- *Autonomous collaboration mode***:** In this mode of collaboration, the public organization purchases a standard digital solution from a vendor. Collaboration is geared toward knowledge sharing between organizations. The public sector organization can get access to the experience and knowledge skills of the private organization from which the software was purchased. This kind of collaboration highlights the benefits of a fully autonomous system supporting specific needs. However, this mode requires more competence in the domain of the e-service in question. Also, it has no economies of scale-related benefits because it is better adapted to a need.
- *Framework Agreement Mode:* In this mode of collaboration with the public sector, the public organization establishes a framework agreement with the set conditions for collaboration. The framework is, therefore, to coordinate the activities of the public sector and other stakeholders. The benefits of this collaboration mode are that it has pre-negotiated conditions for collaboration, thus a possibility for the economics of scale. The framework agreement mode of collaboration must focus on interoperability or information sharing. Because the framework mode is scalable, it results from processes.
- *Consortium Mode***:** In this mode of collaboration, the public and private sectors jointly own an organization governed by a committee managing a specific area of responsibility. The association coordinates the activities and a service agreement between the organizations and its members. Due to the shared cost, this collaboration mode promotes economies of scale. The standard mode capabilities can be developed in specialized areas. Thus, there is an effective and specialized organization with capabilities and competence that other members can source. This mode of collaboration promotes interoperability, information quality, and availability. However, its significant limitations include less autonomy and the need to deal with conflicting goals amongst the members.
- *Central service organization mode***:** An independent public organization provides IT to several authorities in this collaboration mode. In this kind of collaboration mode,

service contracts exist between the public organization and the central service organization and another service contract between the central service organization and the service providers. The central service organization is the coordinating body. This mode of collaboration is quite like the collaboration mode of collaboration. It has benefits such as economy of scale, interoperability, information sharing, and information availability. The central service organization mode has lower oper0061tion and maintenance costs per participating organization (Gustaf, Lönn, & Päivärint, 2017).

2.4 Challenges of Collaborative Governance.

We quickly explain the collaborative governance challenges and what makes them particularly complicated. This section will concentrate more on the problems plaguing collaborative governments during and after a collaborative solution has been developed.

Accountability in Collaborative Governance.

In collaborative governance, there is a need to be accountable for actions and inactions. There needs to be accountability based on the obligation of the collaborative arenas to inform a legitimate forum about its conduct. The forum needs to be able to question the adequacy of the account and its legitimacy. The forum should be able to pass judgment on the conduct of collaborative stakeholders and afterward be able to give rewards or sanctions to stakeholders (Bovens, Goodin, & Schillemans, 2014). In collaborative governance, deciding is always tricky. So most often, collaborative governance decisions are taken in seclusion (Torfing, Guy Peters, Pierre, & Søre, 2012) thus making accountability challenging to achieve. Accountability for decision-making is difficult to achieve. However, accountability for outcomes is even more difficult because collaborative governance arenas frequently share final responsibility for outputs and outcomes with formal political organizations and administrative implementation agencies. This makes differentiating the different responsibilities difficult (Torfing, 2016) (Sørensena & Torfing, 2021).

Implementation in collaborative governance

In collaboration, when stakeholders agree on a standard solution to a problem, the next step is to implement the new jointly formulated solution. Stakeholders can jointly implement or

delegate the solution to a specific public or private implementation agency. When the different stakeholders come together and design a solution and coordinate, monitor, and implement this solution, it is known as collaborative implementation. The disadvantage of this implementation method is that it is usually faced with structural problems. There need to be more precise rules regarding decision-making and division of labor. The advantage of collaborative implementation is that the stakeholders are a part of it by committing resources, coordinating their efforts, and evaluating progress to see whether the new solution is implemented fully and works effectively in practice or whether adjustments are required. (Sørensena & Torfing, 2021).

The second implementation strategy is delegating the implementation of the derived solution to an implementation agency. The benefit of this solution is a defined structure and precise decision-making. Also, there are no distributional conflicts as to who incurs costs and who reaps the benefits of the accruing from the solution. However, because the implementing agency may not have been part of designing the solution, they will have limited understanding and ownership of it (Sørensena & Torfing, 2021).

Evaluation in Collaborative Governance.

Evaluation is looking at the output and outcomes of collaboration. At the same time, well-known governance frameworks such as formative and summative evaluation will work well for collaborative networks concerned with resource mobilization and societal coordination. They must be better suited to evaluate cases where public, private, and other industry partners work in a work group to provide innovative solutions. This is because this kind of stakeholder collaboration has different goals and objectives. The stakeholders' diverging interests, the emphasis on mutual learning, and their pursuit of innovative solutions constantly alter the planned activities, reinvent the tools, and redefine the goals, thus making evaluation relatively more complex. Measuring collaboration is also challenging, whether to ask the individual stakeholders, the network administrative organization, or the external environment actors (Torfing, 2016). This ensures that actors invited to evaluate the collaborative performance do not merely reflect their relative gains from the collaborative governance process (Sørensena & Torfing, 2021).

2.5 Solutions to Collaborative Governance Problems

In collaborative governance, the implementation problem, as discussed above, results from the output of collaborative governance needing to be adequately implemented or failing to produce desired results. As proposed by Torfing et al., design theory which focuses on empathy, prototyping, experimentation, iteration, adaptation, and scaling of solutions, could be a solution to the implementation challenge of collaborative governance. This is because the design cherry blurs district lines in my kitchen formulation and implementation of public governance solutions. They are designed to integrate upstream and downstream actors in collaborative governance to stay together to find the problem and develop and implement innovative designs that meet the target group's needs. In summary, design thinking integrates a view of collaborative governance, which begins with an empathic problem of exploration to an engagement of social and political leaders' implementation of innovative solutions through iterative rounds of testing, evaluation, and revision (Sørensena & Torfing, 2021).

Evaluation problems in collaborative governance result from the complexity of collaborative governance arrangements. Nonlinear, dynamic, adaptive, interaction conflicts and uncertainty characterize collaborative governance arrangements. New patterns emerge and continue to evolve because of learning, experimentation, and chance discoveries. The developmental evaluation can be used to evaluate collaborative governance because it supports mutual learning and innovation and collaborative governance initiatives.

Developmental evaluation tracks the efforts and accomplishments of governance arrangements and documents the program learning and problem-solving impact of gradually shifting solutions about the overall mission. This is critical for securing continued external and internal support for collaborative governance. This may necessitate rapid, real-time feedback on new, co-created designs (Sørensena & Torfing, 2021).

The self-organized nature of collaborative governance arrangements causes the accountability deficit in collaborative governance. This issue can be overcome by combining top-down political and administrative meta-governance with bottom-up forms of social accountability. The actors assess information about their collaborative work and request additional information. Collaborators evaluate whether their partners are carrying out assigned tasks, using resources as planned, and producing the promised outputs. The accountability process can be staged, the information phase in which the actor provides the

forum with information about their behavior. Because the information dimension involves various stakeholders at various levels, proper documentation of partnership and organizational charts must be used to represent how information and authority resources flow. Another dimension is the discussion dimension, and in this dimension, the various actor's asses the information about their collaborative networks. This helps collaborators assess if they are carrying out their tasks as they should.

Then the information stage. The last dimension of the accountability process framework involves rewarding or punishing stakeholders based on the evaluation results generated from the discussion dimension. Collaborating partners use rewards and sanctions to hold each other accountable (Lee & Ospina, 2022).

3 Country-Specific Case Study Examples

As mentioned earlier, collaborative governance has been of rising interest to several countries seeking to improve innovation in e-government and better governance. We will explore the use of collaborative governance in some countries below: -
In Mexico, they need to collaborate started in 2001, highly encouraged by experienced group leaders implementing e-governance projects. It was pioneered by an umbrella digital transformation initiative called e-Mexico. This initiative created infrastructures for citizens to connect to the Internet through the digital community centers in schools and libraries. The initiative also provided e-learning, e-health, e-economy, and e-government.

The e-Mexico initiative brought together efforts from public organizations, NGOs, private organizations, and other industry stakeholders to build interoperability in the Mexican e-government. This collaborative e-governance initiative successfully fostered the Mexican e-government agenda, improving the quality of e-services provided. For the e-Mexico initiative to have been successful, institutional arrangements, organizational structures, and managerial processes that will enable quality collaborative initiatives that lead to trust and expected outcomes were paramount.

Public organizations worked closely with the chief information officers through government networks regarding organizational structure. These e-government networks aimed to promote coordination amongst federal agencies regarding investment and sharing experiences. Through this network, all federal agencies in Mexico obtained a joint licensing agreement with Microsoft, which facilitated the interoperability among these various agencies (Cruz, Gil-Garcia, & Luna-Reyes, 2007). Also, federal agencies collaborated closely with INFOTEC- a public center for innovation that serves as a consultant and offers Technical Support from the best research and technological trends. The success of the collaborative e-initiative in Mexico was greatly dependent on trust. Trust is an essential aspect of collaborative governance, for it improves stability in the relationship between the stakeholders .

Another country example of a collaborative governance case study is the US. In the US, collaborative governance is eminent in delivering various e-government public service delivery. Typical examples of these collaborations can be seen with the New York State homeless service collaborates with multiple stakeholders through information sharing to provide impactful and effective services. They collaborate with several agencies and NGOs, such as the Bureau of housing services (BHS) and the Office of Temporary and Disability Assistance (OTDA). For better resource management, the BHS and OTDA created a system to manage demographic information, payment information, shelter information, medical information, and data from substance abuse and other services. (Luna-Reyes & Andersen).

The information used for this system is obtained from the New York State Welfare management system (WMS), the Bureau of housing services (BHS), and the state department of Health. ((Luna-Reyes & Andersen). This project is the leading project innovator, and the shelter providers and local public agencies are the project stakeholders. The collaboration not only meant the interchange of data but also promoted the generation of new knowledge. There is a shared vision of the project's feasibility from the provider's and stakeholders' perspectives (Luna-Reyes & Andersen).

Exploring another typical example of collaborative governance in the US, an exploratory study was carried out by Chen and Lee to understand the process of information decision-support network management and the interplay between context, collaborative processes, management, and performance in the Metropolitan Area Planning Agency (Omaha-council Bluffs metropolitan area USA). This constitutes Nebraska and Iowa, with 63 government

units. The Metropolitan Area Planning Agency obtains data from these government units to provide a transportation improvement plan. Nebraska and Iowa counties, council bluffs, Pottawattamie County, and other small neighboring cities provide the data used by the MAPA. (Chen & Lee, 2018).

The operational function of data collection included cloud engineers, public work people, and policy groups such as heads of local governments and planning departments. The information department and GIS people. Therefore, collaborating with local governments, planning departments, councils, cloud engineers, and other stakeholders enables MAPA to compile transportation data, conduct analysis and prepare reports for the federal transportation department. These studies found that networks in MAPA are grouped by jurisdiction, the various cities and counties, and functions: IT and planning staff, traffic engineers, and public works departments. (Chen & Lee, 2018).

The workflow and role of various groups in building data plans every five years are as follows: the first stage is the production of transportation information; the functional department (public works), with the assistance IT department in various local governments, plays the dominant role of collecting traffic data and processing. Secondly, traffic data sharing across the various organizations is done by the data and technology staff of MAPA and the participating local government. The IT department of MAPA is the contact point for cross-boundary data sharing. The 3rd stage of information production is harmonizing the traffic data collected. MAPA is responsible for all the data integration presentation and support at this stage. They consult with participating local governments for technical details (Chen & Lee, 2018).

The Australian government is among the nations implementing e-government initiatives in the 1990s. The Australian Federal Government was successful in creating a foundational infrastructure, thorough integration, and application of new technologies to government information, service delivery, and administration, and a shift from back-office productivity to one of the users' needs, integrated, and personalized service offers (Morten & Zoran , 2020). The Australian Federal Government successfully created a foundational infrastructure, thorough integration, and application of new technologies to government information, service delivery, and administration, and a shift from back-office productivity to one of the users' needs, integrated and personalized service offers. The Australian Digital

transformation agency is mainly responsible for strategic leadership in sharing information and communication technology.

The Australian government has embarked on a proactive plan to promote collaboration in the government across all levels creating digital solutions and fostering digital innovations. In achieving their goals, they cooperate with state, territory, international governments, advisory and oversight bodies, industries, and academia to achieve the best results. The Australian government has various communities of progress whereby people come together to share their work solve problems, and explore best practices. (DTA Corporate Plan 2022–23 , n.d.). The Australian government is among the nations implementing e-government initiatives in the 1990s. The Australian Federal Government was successful in creating a foundational infrastructure, thorough integration, and application of new technologies to government information, service delivery, and administration, and a shift from back-office productivity to one of the users' needs, integrated, and personalized service offers (Morten & Zoran , 2020). The Australian Federal Government successfully created a foundational infrastructure, thorough integration, and application of new technologies to government information, service delivery, and administration, and a shift from back-office productivity to one of the users' needs, integrated, and personalized service offers.

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In New Zealand, the Digital Government Partnership (DGP) Innovation is a collaborative endeavor among government agencies, industry, and citizens to co-create creative solutions to improve public services and boost citizen involvement. To identify and address difficult challenges in the digital domain, the DGP brings together a diverse spectrum of stakeholders, including government agencies, industry partners, civic tech organizations, and people. The alliance focuses on user-centric design, open innovation, and agile

approaches to co-create and test novel solutions. The DGP role-related collaborative governance is as follows: -

- Develop relationships with partners that are open, collaborative, and innovative.
- Identify, collaborate, and work with other organizations and people who are a natural part of your users' service ecosystem.
- Use widely acknowledged approaches, techniques, frameworks, components, data, open standards, and free or low-cost services.
- Use cross-agency and private-sector partners and vendors to aid in developing novel techniques. (Standard, n.d.)

The UK has actively used collaborative government Networks to solve complex policy issues. The UK government created the foresight program to identify, create, and prioritize emerging technologies. This foresight program comprises public, private, and academic actors and has three main activities: - the horizon scans, the future projects, and the public outreach program. This UK foresight program considers information from think tanks, corporate bodies, government, academia, NGOs, blogs, and mainstream media.

The Ministry of Electronics and Information Technology (MeitY), Govt. of India**,** set up the Digital India Corporation to lead, guide, and realize the Digital India program. The digital India corporation brings together talents from the government and the market. This mix of talent will ensure a broad spectrum of talent to provide strategic support through capacity building for e-government projects, promoting best practices, encouraging public-private partnerships, and nurturing innovations and technologies in various domains.

4 Case Of Estonia

4.1 Background History of Collaborative Governance in Estonia

Since the 2000s, Estonia has grown exponentially in implementing e-government solutions. Estonia has been highly ranked internationally compared to Eastern and Northern European countries, pioneering EU member countries, and others that have successfully implemented digital transformation (Kalvet, 2012). The Estonian government has continually used collaborative governance initiatives to steer digital transformation and manage the implementation of the e-government system. In fostering e-government developments, the role of the Estonian IT community was singled out to be crucial in shaping how government policies on IT procurement, spending, and use were made. This IT community comprises a network of IT specialists, scientists, and government officials. This was the genesis of the advanced human capital in Estonia then (Kitsing, 2011). Estonia has had a center-right laissez-fair attitude toward the government. They have always focused more on public-private partnerships and outsourcing, and there has existed a high correlation between public and private spheres, which has improved the level of trust among the sectors (Charles, 2009) (Kitsing, 2011). In developing Estonia, e-governance emphasis is laid more on replacing legal systems and scraping old practices and legislation; thus, it has been more of informal networks and personal contacts. (Nielsen, eGovernance and Online Service Delivery in Estonia, 2017).

The Estonian e-government's journey started in 2002 with the widespread use of electronic identification cards, which further created a platform to build new e-services and the X-road database management system, which has been the bedrock on which e-services are established. This would have been impossible without the combined efforts of public and private sectors, such as banks and telecom companies (Goede, The e-government cases of Estonia, Singapore, and Curaçao, 2019). Internet banking introduced the government to develop an identity verification system that will enable public services to be provided online. At the forefront of the Estonian e-Government development was the Estonian Information technology community, a network of IT professionals in the government, business, and Academia. The banks also predominantly contributed through the introduction of Internet banking (SHMAGUN, 2015) (Björklund, 2016).

4.2 The Estonian e-Id

The Estonian system Comprises the e-ID card, an electronic identification card embedded with an electronic chip, and requires two pin codes. The identity of the user is verified by the first. The second serves as a digital signature. The digital ID card features a microchip and two pin codes that are built into the card. Most services can be accessed by entering the first pin code, including checking personal health data, verifying the validity of auto insurance, and checking the number of candidates in each voting district. The mobile version of the e-ID card also exists, known as the "Mobile-ID" form for mobile devices. The solution is based on a secure mobile SIM card, which the user must obtain from an Estonian mobile phone operator. Private keys are kept on the SIM card, facilitating authentication and signature operations. (Goede, 2019) .This working group consists of four main parties cooperating in a public-private network: The Police and Border Guard Board “Politsei- ja Piirivalveamet” (PPA), the Estonian Information Systems Authority “Riigi Infosüsteemi Amet” (RIA), SK ID Solutions, and Gemalto. The various stakeholders have different roles in developing and managing the e-ID system.

The Police and Border Guard Board issues the e-ID card. It is responsible for applications, revocations of e-ID cards, and the suspension, revocation, or updating of certificates. The IT Development Centre (SMIT) provides PPA IT support in ID card-related activities, and the Ministry of Interior supervises the PPA.

RIA- “Riigi Infosüsteemi Amet”: Estonia’s civilian cybersecurity authority houses the national Computer Emergency Response Team (CERT-EE). They are responsible for maintaining the public IT systems and the e-ID software. They are supervised by the Ministry of Economic Affairs and Communication “Majandus- ja Kommunikatsiooni-ministeerium” (MKM).

SK ID Solutions (SK): This is the e-ID scheme’s certificate authority and administrator of the PKI. They are responsible for issuing and maintaining e-ID certificates throughout their life cycle. They create, activate, suspend, and revoke these e-ID certificates. They are supervised by RIA (Skierka, 2023).

According to (Skierka, 2023), the presence of governance networks is one of the patterns that contributed to Estonia’s success in combating the ROCA(Return of Coppersmith's

attack) 2017 attack on the e-ID system. The study found that because Estonia has pre-existing cross-organizational governance networks that operate through underlying norms and active network management, information sharing and decision-making during the attack were more effective. The work group members in the e-ID system shared a sense of identity and a common goal to protect Estonia's digital society. During the cyber crisis, RIA was the factor crisis network manager facilitating cross-organizational cooperation. This cross-organizational cooperation amongst institutions and RIAs role enabled an adaptive response and better-coordinating capacity. During the crisis, there was less bureaucracy and more speedy and flexible informal communication and decision-making processes. (Skierka, 2023)

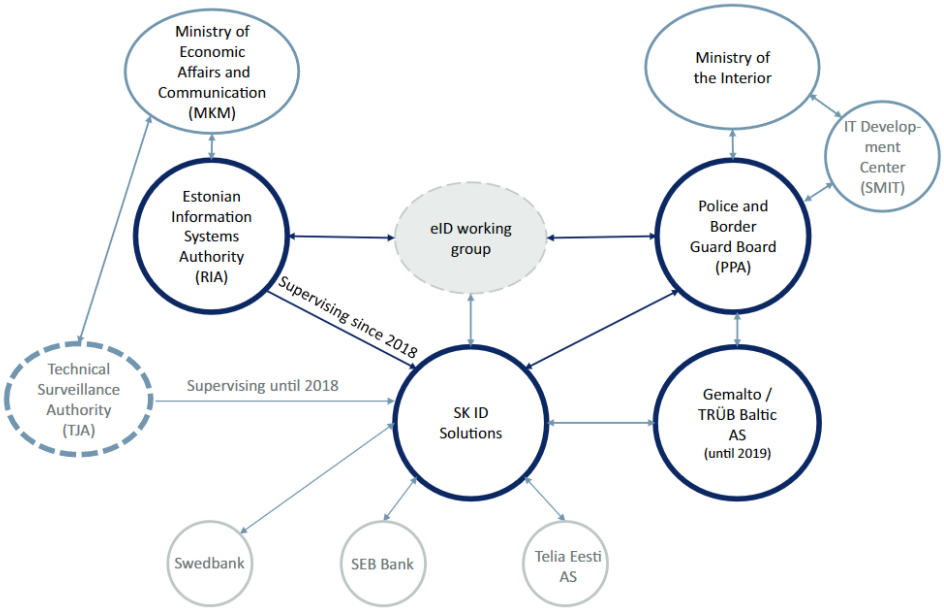

Figure 1: Estonian e-ID system. Source (Skierka, 2023).

4.3 The Estonian Real-Time Economy

The term "real-time economy" refers to an information-based infrastructure in which data on economic transactions is transferred in real time between parties. The Real-time Economy projects aim at reducing corporate and government costs while increasing business revenue. The RTE will achieve all these by replacing paper-based business and administrative transactions with automated data exchange; the goal is to save time and money. Structural changes will be implemented in the business environment and

relationships with the government so that business administration and management activities can occur automatically in the background, significantly reducing the administrative burden on entrepreneurs.

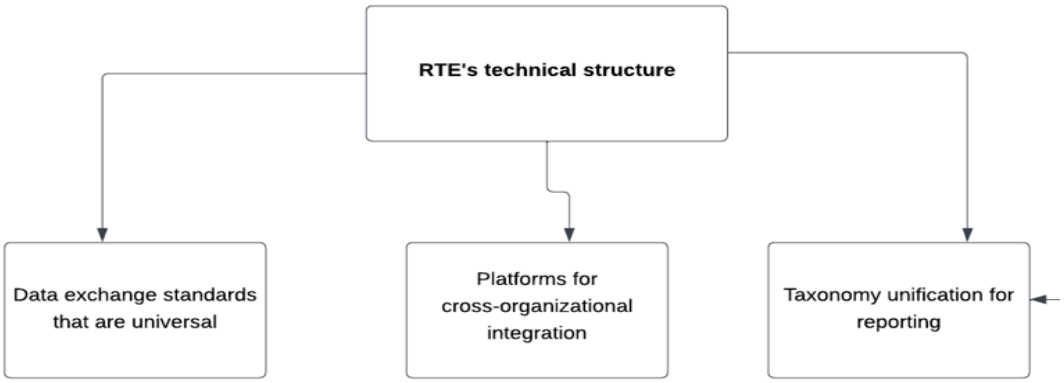

Figure 2: RTE's Base Solution.

- *Data Exchange standards that are universal*: Sharing information across private organizations, public organizations, and cross-border will require a common standard through which data can be exchanged. This is because implementing a universal standard makes information sharing easier. In the case of e-Invoices, the European standard of e-Invoices (standard EN 16931) will be used. This will provide a uniform base for information sharing.
- *Platforms for cross-organizational integration*: These platforms will allow real-time data to be shared across organizations and borders. This will reduce operation time, thus boosting economic activities.
- *Taxonomy Unification for Reporting*: This standardizes reporting among public organizations, private organizations, and other countries. Often companies have different formats for reporting across borders, and a unified system will ensure consistent and comparable data.

RTE Building Blocks

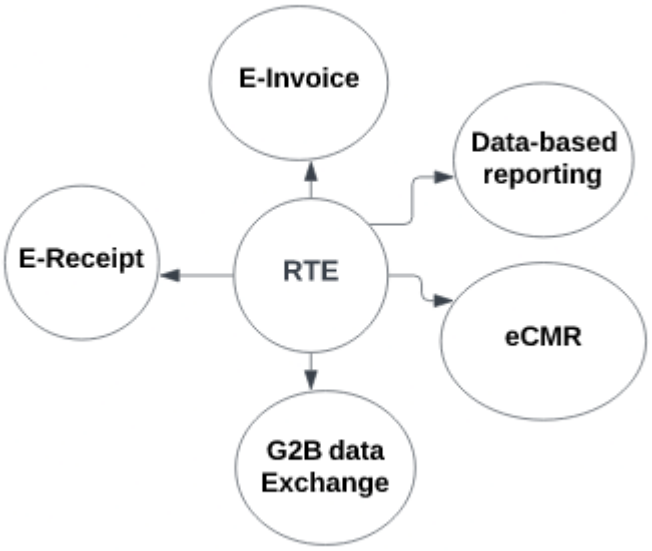

Fig 3: RTE Building Blocks

E-Invoice: The e-Invoice is a machine-readable invoice that is created, transmitted, approved, recorded, a stored in an electronic environment. Its main attribute is that it should be machine-readable. Its main benefits are:

- The machine-readable invoices will help save time and reduce administrative costs.
- Data quality will be improved. Because data is not entered multiple times, possible errors are associated with manually entered data.
- An e-Invoice positively affects the digitization of the business processes of a company or agency, creating preconditions for innovation.

E-Receipt: The E-receipt is a machine-readable document containing payment and e-invoice information. Paper receipts, electronic images, and PDFs cannot be considered e-Receipts. As of 2014 e-Receipts were used in Estonia and initiated by Omniva and Telia, and this has grown today to be the “Telia mtasku” application. With this application,

digital receipts are as PDFs or electronic images. The main benefits of e- receipts are cost reduction and environmental sustainability. The main partners here are:

- Latvian Information and Communications Technology Association LIKTA
- Latvian Information and Communications Technology Association LIKTA
- Lithuanian Association INFOBALT

Data-based reporting: In Estonia, companies must fully report their data to state agencies. This reporting obligation is so time-consuming as companies must complete numerous reports. To combat this problem, a cross-agency data-based reporting steering group has been created to develop a unified taxonomy across sectors. So, in this case, everything necessary for reporting is entered once into the transaction data of the accounting software of the company, and this software can later be shared with the right agency. For this to work, data sets must be clearly described in detail, analyzed, and standardized. The partners in this project are:

1. **eCMR:** This electronic consignment note used in road transport is compiled by businesses and controlled by competent authorities. This aims to digitize consignment notes used in road transport and make them available to all parties in real time. The benefits of eCMR

- Environmental sustainability as less paper is used.

- Helps improve transparency and efficiency. eCMR helps stakeholders track their consignment in real time, and the system can carry out invoicing processes.

- Cost and time-saving. Administrative processes are reduced from manually handling emails, calling, and multiple data entries.

- The public sector could quickly check information online without stopping the truck, thus speeding up the control process and creating better logistics statistics.

2. **G2B data Exchange**: This will create the ability to share data in real time with third parties based on consent by 2027. Although national databases and registers exist and open data in different platforms in Estonia, the overview of unique data in these databases and registries still needs to be completed. Data is exchanged

amongst various agencies and offices through X-tee; however, after each exchange, the data is not deleted, creating duplicates stored in different data sets and registries. The G2B data exchange aims to generate a one-time mirroring of data upon request from one data set to another and to the private sector. The consent service will be launched as a pilot project, making it possible to collect data about a person, including private data, and make it available to third parties with the data subject's consent. This will help private sectors develop new services through consent services—sustainability reporting (Real-Time Economy, n.d.).

4.4 E-Residency and the Marketplace

In 2014 Estonia launched its e-residency program that allows nationals of other countries to become e-Residents in Estonia. Estonia offered government-issued transnational digital identity that enabled e-residents to sign documents, authenticate signed documents, and establish a company in Estonia online (Kimmo, Pappel, & Draheim, 2018). To ensure that companies create business and carry out their business smoothly, the E-Residency program has the marketplace. The Marketplace comprises e-Residency ecosystem providers that assist e-residents in starting and growing their enterprises. These are individual businesses in Estonia carefully selected by the E-residency team while looking at their service quality, background, and the needs of e-residents. These individual businesses can be categorized into: - authentication plug-in service providers, new e-ID service start-ups, corporations needing to optimize internal business processes, and customer support organizations.

- *Authentication plug-in service providers* are responsible for integrating Facebook-like login buttons that all e-Residents access their websites. This feature ensures that the other parties are who they are. Hence authenticating the identity of the party. This benefits financial service providers that must follow strict regulatory frameworks and new emerging business areas such as virtual currencies, e-health, and other services that require a certain level of trust.
- *New e-ID service startups*: These private sector entrepreneurs build services around e-ID. Services like encrypted video conferencing, Verification of signed documents….

- *Corporations needing to optimize internal business processes*: Corporations that can optimize their internal processes using the e-Residency benefit business fields of logistics, construction, trade, shipping, and other industries.
- *customer support service*: They support customers regarding legal issues, business, and even accounting advice, most of which cannot be gotten with the e-ID. This helps provide a seamless experience to the E-Residents considered precious customers (Kotka, Alvarez del Castillo, & Korjus, 2015).

Coordination and leadership in this ecosystem are independent. E-Residency cannot take responsibility for the bilateral business relations within the e-Residency ecosystem (E-Residency, 2023).

5 RESEARCH FINDINGS

This chapter presents the results of empirical data collected through various interviews conducted by the researcher with Estonian government officials working on projects that require collaborative governance initiatives. Their different perspectives were considered to get a deeper understanding of Collaborative governance initiatives in Estonia as they all work and collaborate with industry partners at different levels.

5.1 Prerequisites for Collaborative e-governance Initiative

A. Shared Goals and Interest

For collaborative governance to hold, stakeholders must share common goals and interests. Sirli Heinsoo, Project manager of the Real-time Economy work group from the Ministry of Economic Affairs and Communications in Estonia, indicated that "*Vision and Common goals together with the private sector are important, so everyone knows where we are going and What is the status we want to achieve. The vision and, say, the road map is crucial*." This is coherent with the (Chen, 2017) finding, which highlights vision and shared goals as both an incentive and a driver of collaborative governance initiatives. This confirms that the higher the goal alignment amongst stakeholders, the higher their level of commitment.

According to Kristi Aruküla, the Real-Time Economy international relations manager at the Ministry of Economic Affairs and Communications for Estonia, cross-border collaboration in the real-time economy is possible because "*The topics are the same. We are talking about the same things. We are just not using the same terminology. Moreover, in recent years, the cross-border exchange has also been increasing on the topics, so now the countries are collaborating more. First, the focus was more on improving data management inside the country. This is also very important".* She emphasized *"a similar concept as the real-time economy is ongoing in many countries. The terminology might not be the same. However, we are talking of the same things".* Katrina from the E-Residency program also noted, "*Service providers have also started their businesses, like Estonian service providers on the marketplace, because they see a gap that needs to be filled. For example, it is tricky for an E-Resident if they want to close their company for any reason. It is a lot more challenging to complete your company than it is to open it.* These private companies that are in the marketplace are interested in offering the needed services to E-Residents to ensure they have a seamless process of creating companies and closing companies. This means shared goals are critical for any form of collaboration to succeed.

B. Good Cooperation Amongst stakeholders

Good cooperation amongst the various stakeholders was identified as a necessary factor for effective collaborative governance. "*The second thing you need is good cooperation with the private sector. You do not need everyone on board from the onset; you need strategic partners,"* says Sirli Heinsoo. She explains that good cooperation usually does not have to be with every stakeholder you need. What was needed for a start was the presence of Strategic partners that could serve as forerunners to the project in the case of a real-time economy. They started with just three organizations "*Actually 2021, we had only three authorities together with us. Last year we had 11; this year we have 20".* With the E-Residency program, the collaboration is more informal as Kristina says that collaboration is "*More like an NGO or startup than a regular government agency, and in that sense, we collaborate unofficially*" This is to take away any form of bureaucracy as their main goal is to create an ecosystem whereby E-Residents can find the necessary information that they need to create and run their companies in Estonia (Demircioglu & Van der Wal, 2022).

C. Budget and Government Priority

This prerequisite was unique to the real-time economy work group. Sirli noted that working with government agencies and private organizations to create standardized Real-Time digital solutions needs a budget, not just a government one. However, multiple sources of income to rely on. "*Third thing, of course, you need a budget. Although there is a national budget, other income streams are needed to manage this. Five different possibilities of income from EU and other budgets*". She also noted that with needing a budget, there is a great need for the government to see the project as a priority. "*Fourth, the project needs to be the government's priority, and the government needs to understand that this change is important. Yes, it will make an impact, but it will not make an impact today or tomorrow. Thus, this is so important that the government has the action plan priority that we are moving towards that".* Government priority and the presence of a sufficient budget, as she highlighted, was essential as it helps in ensuring stakeholders' cooperation. And she noted again "*If you have these two things, then you can knock on any other ministry's door and say this is something that we need to do together*."

D. Leadership and coordination

As elaborated above, leadership is an essential aspect of collaborative governance as it is a crucial driver of collaborative governance. However, coordination and leadership in the various projects involved in this study turned out to be different from each project.

In the Real-time economy group, coordination is described by Sirle as *matrix governance,* meaning it is more top-down. The Ministry of Economic Affairs and Communications coordinates the whole project and gives out the budget to every authority. She explains, "We set contracts and *yearly objectives that they must achieve with this budget so that they will report to us."* However, there is a conflict of interest. Most stakeholders are torn between meeting their organization's objectives and meeting the objectives set by the Realtime group, which are sometimes conflicting. She explains, "*At the same time, the persons in, let us say, the Ministry of Environment is working for the ministry environment*

so. They must do the things important for the Ministry of Environment, but they must do it this way to meet our needs".

Coordination on the cross-border level is somewhat different from what we have in Estonia; Kristi Aruküla, the real-time Economy International project manager, explains that individual countries have their legislations; it is more of "*if the directives come into force, then the Member States can implement it in their way, or their own best knowledge or most.*

5.2 Collaborative Governance Mode

To ensure that collaborative initiatives are geared toward their intended goals, there is often a structure in what Gustaf et al highlighted in their study as modes of collaboration (Gustaf, Lönn, & Päivärint, 2017). In this study, the author looks at each collaborative initiative's modes of collaboration.

The Real-Time Economy project is not intended to run for long. Instead, the public sector agency, the Ministry of Economic Affairs and Communications for Estonia, is out to build a foundational structure upon which individual organizations will provide services. "*However, the goal is not for long-term support but only for the first investment support and the boost of the quick transition, and then they need to find their business model up on that investment, make the upgrade, and then manage themselves from that point."* To achieve this the public sector establishes a framework for collaboration between the Ministry of Economic Affairs and Communications for Estonia and the various stakeholders in the RTE program. In explaining the framework for collaborating, Sirli explains that semantic standards must be established between the public and private sectors. She notes, "Investment is made both in the private and public sectors. *So, to make quick wins, we need to start making pilot means to show that data can be moved between the two organizations*" In coordinating collaboration amongst the private and public organizations, they ensure that there are simple principles that guide collaboration. She said this simple principle should include "*What are we doing? What? What does it take to achieve this goal of data-driven reporting? We need to have standardized data. So, this is what we are doing both with public and private sector partners. We are standardizing the reporting data".*

Thirdly she noted that infrastructure semantics is a critical aspect in the Real Time Economy collaboration framework; there needs to be an agreed way in which information is shared across organizations. She explains, "*We need to agree on the infrastructure from what roads are the data moving. What is the infrastructure? And do we also need to set technical standards for how we will transport the data?*". This makes coordination amongst the public and private organizations more of support measures and communication. Moreover, it will need a lot of training and media coverage to raise awareness and, at the same time, provide support measures.

Collaboration in the e-Residency Marketplace is more like a marketplace structure, as the name suggests. This means that various private organizations come to provide services to e-Residence to ensure they have a seamless experience and for profit making. Kristina explained, "*It is sort of us, and these companies all exist in the same ecosystem. We are all looking to develop the residency concept*". The e-Residency team and these private companies in the marketplace make the e-residency program work. The e-Residency team is only responsible for performing due diligence on the various companies in this marketplace to ensure they are compliant. The collaboration with these firms varies. "*We do not collaborate with every single company on the marketplace on the same level, probably because there are more than 100 companies on there".* She explains that this is because collaborations are more like unofficial alliances with companies based on the topic that needs to be handled.

5.3 Challenges to collaborative e-governance for digital transformation

A. Development plan constraints

As elaborated from the literature review of collaborative governance and the empirical results from the interviews, the common goal is a prerequisite for collaborative governance initiatives. However, this can be very challenging for organizations such as the public or private sectors. This is because, most often, organizations have development plans that span 5-10 years, making it difficult to bring them on board to collaborate for a new project because of their lengthy development plans. Sirli Heinsoo noted during her interview that "*I would say for two years I worked with them to get them on board to get them rolling with us in the first year, they were not interested, and the main reason was that they had their development plan up, until 2023 or something like that. So, they did*

not have the resources to plan extra activities in their development plan. That was the main bottleneck, and that is the main bottleneck for any other authority as well. They have made their development plans. So, you must be at the right time in the right place to make your developments into their development plans. We understand that even if we give them a budget".

Government priority was a factor that worked in favor of the real-time eco, the economy, as noted by Sirli Heinsoo; she explains that *"we went directly to the direct authority management,"* and they were able to listen because they had the government backing and taking their real-time project as a priority. Organizations listened more quickly to their idea and were interested in making the changes. Added, "Straight to the management and start saying why it is important in some cases, it made the change right away. They changed their development plans, and we got some authorities in some cases*".*

B. Lack of IT skills

A limited IT workforce is available in the public and the private sector. This poses a challenge to collaborating on other projects because when the IT personnel are already engaged in other projects, even with the available budget and government prioritizing the projects, getting this IT-skilled personnel on board might be a problem. "*There are not many IT people in the market. So, the ones they have are working with the other development projects. So, you can give them the budget, but it is impossible,*" said Sirli Heinsoo. However, the Challenge of IT skills was particular to the real-time economy group as they require a heavy batch of human resources to pull through with the Real-Time Economy projects.

C. Legislative Constraints

This challenge is unique to the Real-time Economy work group. Kristi, in her interview, said, "*The challenge is more about what countries can solve across the border or the regional level. This is the legislative part, and the legislation in countries is different. This is also the data security issue, either the identification or signal E signature each country uses*". The legislative issues are raised mainly because of cross-border collaboration.

Every country faces its legislative processes, and when organizations collaborate, they must first follow their country's legislation. However, this can be
A suitable way. Still, it does not necessarily have to include similar interoperability with the other countries".

Kristina highlighted coordination in the E-Residency program marketplace which is more unique and different from how the Real-time work group coordination within Estonia and at the cross-border level works. She explained that relationship amongst stakeholders is more informal than what most government agencies engage in, she said "*I only know that E-Residency is an exception because we even think of ourselves as Like an NGO or startup than a regular government agency, and in that sense, we collaborate unofficially in a sort of like, you know, trying to develop the environment because it is a new topic rather than the more traditional going through levels of government because of the sort of".* She explains further that this is because the E-Residency program is aimed at providing an environment where residencies can easily create a company without being subjected to bureaucracy "*Well, that is also our goal, cutting down the bureaucracy of how EE residents start their companies. A lot of EE residents."*

5.4 Discussion

Collaborative governance has a positive promise for public management in steering digital transformation. From our literature, countries seem to use this governance method to improve the quality of public services developed. The outcomes of this study have provided critical insights into collaborative governance initiatives in Estonia. This section covers how the qualitative data presented in the result and analysis helps answer the research questions. The main research question was, "*How do collaborative e-governance initiatives work*?". To properly answer this question, we had to look at sub-questions to ensure a great outcome. The responses from the interview are crucial to our empirical findings as they help answer the research questions and confirm some facts highlighted in our literature review.

The results show that shared goals and objectives were the most confirmed prerequisite. Shared goals and objectives must be present for collaborative governance even in Estonia;

all those interviewed highlighted that collaborating meant each partner had similar goals; even if they were not all called the same things at that time, the goals had to be similar. Shared goals have proven to be very beneficial as they encourage the stakeholders to communicate effectively, share ideas, and work towards a common vision, thus leading to increase motivation, focus, and priority. This will improve the quality of collaboration, ensuring they achieve their intended purpose. This confirms the CGR framework that shared goals and interests are essential and reinforce mutual trust, understanding, internal highlights, and commitment (Emerson, Nabatchi, & Balogh, 2011). Another Prerequisite was good stakeholder cooperation. Cooperation provides grounds for unity in action and eliminates a critical aspect of collaborative governance which is a conflict of interest amongst various stakeholders. However, government priority and budget are prerequisites for these collaborative initiatives in Estonian e-government. Although not directly mentioned, it can be deduced that the Estonian government's leadership role improves collaborative governance as they sponsor stakeholders in the joint action (Bryson, Crosby, & Stone, 2015)

The second sub-question of the research question aimed at understanding *"What are the various collaboration modes employed."* The study found that collaboration initiatives in Estonia were not confined to a particular mode of collaboration. Although they had characteristics of some, they did not depict a particular collaboration mode. The Real-time Economy group collaboration initiative conformed to the framework Agreement mode of collaboration as it had an established framework to ease cooperation amongst its stakeholders, such as semantic standards, simple principles, and infrastructure semantics. Collaboration in the e-Residency marketplace debunks the fact that collaborative governance initiatives require specific modes of collaboration to achieve desired results. Collaboration was more of an unofficial alliance with some companies depending on the topic. Like the meaning of marketplace, collaborations were done optimally to create profit while fostering the e-Residency program. Also, this study points out that collaboration with private companies was not at the same level; however, their expertise was required to make collaboration work. This is to say that although there are collaboration modes, collaborative governance initiatives modes could actually be standardised to meet specific project objectives.

However, Estonia's collaborative initiatives have some bottlenecks identified during the interviews. The Real Time economy workgroup members encountered developmental plan challenges. Various organizations were already on a developmental plan; however, the Government priority significantly encouraged these organizations to see the importance of the Real-Time project and align their goals to meet the project goals. Other challenges highlighted in the study are Lack of IT skills and legislative challenges. For countries with different legislations to collaborate, there is a level of conflicting legislation to expect. This can be minimized by countries taking the solutions arrived at during the collaborative process and implementing them in their jurisdiction to align with their legal standards. The e-Residency representative noted that because their collaboration was geared to words achieving individual objectives in the marketplace while building the e-Residency program, the challenges faced are related to the parties trying to find solutions to the various day-to-day problems encountered. These problems, most times, might not have been explored. Therefore, the is no existing solution to it.

5.5 Limitations of the Study

The case study research methodology was utilized in this study. As Yin highlighted, the external validity of a study is important during case study research as it helps ensure that the findings are not generalized; in fulfilment of this, multiple sources of data have been used to gather insights. However, there still exists a level of bias for generalization in this study since a small number of subjects were used to analyze, achieve results, and draw conclusions. Also, with case study methodology, reliability will ensure that if the study were conducted by another investigator following the same process, they should achieve the same findings and conclusion. It can be possible to use the same model and methods in different cases; however, it is impossible to expect the same results. (Yin R. K., 1984).

The second limitation of this study was some challenges encountered during empirical data collection. Not so many public sector officials that were contacted accepted to have an interview and share their thoughts regarding the topic. This author conducted fewer interviews than was intended for the study.

6 CONCLUSION

In Conclusion, this paper, "Collaborative Governance Initiatives: Estonia E-government," aims to conceptualize collaborative governance initiatives in Estonia by looking at the overview of collaborative governance initiatives in Estonia, paying close attention to the prerequisites needed to ensure intended outcomes and the various challenges that are encountered and the various modes of collaboration. Interviews were conducted by the researcher with various public sector officials that are part of projects that require stakeholders' collaboration at different levels. This paper aims to contribute to the e-government literature, more specifically to research on collaborative governance initiatives, which is still limited to date.

From the results, the analysis shows that collaborative governance initiative is a prevalent way in which Estonia Steers digital transformation. The Estonia public sector seeks collaboration from industry partners, other government agencies, and workgroups to achieve digital transformation leaps that would have been impossible if delegated to just one organization. However, this study shows that prerequisites must be implemented to achieve each collaborative governance initiative's goals and objectives. Shared goals and interests are the most confirmed prerequisite for collaboration. The RTE program for both the national level collaboration and the collaborations at the international level confirmed the shared goals and interests. The E-residency program also confirmed this as a significant prerequisite. The literature review highlighted this, followed by good stakeholder cooperation, government priority, and a budget. This study also agreed that the modes of operation in collaborative governance initiatives are highly needed to ensure these collaborations are geared toward achieving their expectations.

6.1 Prospects of the Future Work

This study looks at collaborative governance initiatives in Estonia at the level of collaboration; however, because collaboration is not an end, there is a need to take a deep look at how these collaborative governance initiatives. There is so much work needed to be done to evaluate the impact of collaborative governance initiatives in Estonia. There are also challenges that these initiatives might encounter after implementation that

requires critical stakeholder management and leadership engagement to achieve the intended results.

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Appendix 1 - Interview Questions

1. What prerequisites are needed to ensure that collaboration as a means of governance achieves the necessary objectives?
2. How are collaborative governance actions coordinated to maximize their outcomes?
3. Are any challenges that can hinder effective collaboration among the various stakeholders?
4. Can you discuss any specific differences in experience with collaborative governance compared to traditional governance?
5. How would you describe the benefits associated with collaborative governance?
6. Do you want to share any other elements regarding collaborative governance?
7. In collaborative governance, how is the conflict of interest among the various stakeholders managed?
8. Over the years, what are collaborative governance's significant impacts on digital transformation in the public sector?

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