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**SUCCESS AND SUCCESS FACTORS OF THE
ESTONIAN E-RESIDENCY FROM STATE AND
ENTREPRENEUR PERSPECTIVE**

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**EESTI E-RESIDENTSUSE EDU JA EDUTEGURID
RIIGI JA ETTEVÕTJATE VAATENURGAST**

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MSc

Tallinn 2021

Author's declaration of Originality

I hereby certify that I am the sole author of this thesis. All the used materials, 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

Estonia is one of the world's most advanced digital societies. Estonia has created a digital society that is effective, stable, and transparent, where most government facilities are accessible online. As the first country in the world, Estonia launched an e-residency program that can be considered as an extension to this advanced digital society.

Estonia provides the e-residents with an eID that enables users to authenticate themselves in a variety of online service and besides that, they have similar access to Estonian e-services as citizens. they can also electronically sign documents.

Estonia launched the program in 2014. For now, the e-residency program has achieved a level of maturity that presumes a revised approach to the strategy. With a particular emphasis on the assessment of the strategic goals. Therefore, the author assesses achieving the current strategical objectives based on the e-residency white paper 2.0, which is the only publicly available source that contains the strategical goals for the e-residency program.

The author conducted 12 interviews with public sector authorities as well as the private sectors to find the best practice to enhance the achievement of the e-residency strategic goals. The author uses for the research an approach oriented towards case study methodology and based on qualitative individual semi-structured interviews in combination with the theoretical framework makes an improvement proposal for the program. The author identified three main areas: communication, support, and engagement that need further investigation and development. In addition, the author proposes a process for strategy building that ensures the conscious development of the e-residency program.

This thesis is written in English and is 77 pages long, including 9 chapters, 17 figures, and 4 tables.

Keywords: e-residency, electronic identity, eID, identity management, change management, strategy building.

Annotatsioon

Eestit võib pidada üheks kõige arenenumaks digitaalseks ühiskonnaks maailmas. Eesti on loonud digitaalse ühiskonna, mis on efektiivne, stabiilne ja läbipaistev, kus enamik riiklikke teenuseid on digitaalselt kättesaadavad. Esimese riigina maailmas käivitas Eesti e-residentsuse programmi, mida võib pidada selle arenenud digitaalse ühiskonna edasiarenduseks.

Eesti pakub elektroonilist identiteeti (eID-d) e-residentidele (EL ja kolmandate riikide kodanikele), mis võimaldab kasutajatel end autentida erinevates digitaalsetes keskkondades, allkirjastada dokumente digitaalselt ning kasutada krüpteerimislahendust ning seda kõike sarnaselt Eesti kodanikele.

E-residentsuse programmiga alustati 2014. aastal. Praeguseks on programm saavutanud küpsusastme, mis eeldab muudatusi olemasolevas strateegilises lähenemises. Eriline rõhk on siinkohal strateegiliste eesmärkide hindamisel. Seetõttu hindab autor olemasolevate strateegiliste eesmärkide saavutamist e-residentsuse valge raamatu 2.0 aluel, mis on ainuke avalikult kättesaadav allikas, mis sisaldab e-residentsuse programmi strateegilisi eesmärke.

Autor viis läbi 12 intervjuud avalike ja erasektori asutuse esindajatega, et välja selgitada parimad praktikad e-residentsuse strateegiliste eesmärkide saavutamiseks. Autor kasutab käesolevas uurimuses juhtumiuuringu metoodikat ning toetudes läbiviidud kvalitatiivsetele pool-struktureeritud intervjuudele ja teoreetilisele raamistikule, teeb ettepaneku programmi täiustamiseks. Autor tuvastas kolm peamist suunda: kommunikatsioon, toetus ja kaasatus, mis vajavad edasist uurimist ja arendamist. Lisaks pakub autor välja protsessi, mis kindlustab e-residentsuse strateegia teadliku edasise arengu.

Lõputöö on kirjutatud inglise keeles ning sisaldab teksti 77 leheküljel, 9 peatükki, 17 joonist, 4 tabelit.

Võtmesõnad: e-residentsus, elektrooniline identiteet, eID, identiteedihaldus, muudatuste juhtimine, strateegia kujundamine.

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Omar, Yassin, and Farida my lovely kids I know that it was a challenging time, I wish that I could make you proud.

List of abbreviations and terms

Brexit	British Exit
CRM	Customer relationship management
DigiID	Digital identity card
EAS	Enterprise Estonia
EERICA	Estonian e-Residents International Chamber Association
eID	Electronic identity
eIDAS	Regulation on electronic identification and trust services for electronic transactions in the internal market
EU	European Union
ICT	Information and Communication Technology
PBGB	Police and Border Guard Board
RIHA	Administration system for the state information system
UK	United Kingdom
VAT	Value Added Tax

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1 Introduction

Although the current global situation is unexpected, there is one country that somehow was ready to tackle the current circumstances. Estonia, the advanced digital country was able to effectively handle the COVID-19 crisis thanks to its current electronic identity (eID) infrastructure and well-developed e-service platforms. As a result, it is fair to say that Estonia was digitally ready to face those challenges. This makes Estonia an interesting and unique case from the e-governance research perspective.

Estonia also provides its digital infrastructure to third-country nationals through a pioneering "e-residency" programme. Estonia was the first state to provide the completely functioning eIDs to third-country nationals in addition to its residents, allowing the development of new enterprises and providing digital resources for freelancers, developers, and investors (Kotka, T., Vargas, C., & Korjus, K., 2015). Estonia's e-residency programme can be considered as a legislative tool through which national branding is directly linked to the country's ICT policy (Tammppuu, P., & Masso, A., 2018). The key purpose of this project was to support Estonia as a prosperous e-state, raise revenue and additional capital, and support the country's economy (Kimmo, M., Pappel, I., Draheim D., 2018).

The e-residency digital identity card (also known as DigiID) allows users to authenticate themselves in a variety of online service platforms and environments and provides them access to Estonian e-services equally to residents. Users may electronically sign documents (which are legally binding in every EU Member State), execute internet banking transfers, encrypt documents, and declare taxes online, among other items (Särav, S., Kerikmäe, T., 2016). However, it is important to mention that this digital identity card cannot guarantee access to the physical entrance to the country (Identity Documents Act, 2000).

The project has received a lot of positive attention on the International level and is even considered a tool of soft power (Blue, 2020). However, the project has encountered several obstacles, some internal and others external that have influenced the state to overlook the program's strategic goals.

According to the former director of the e-residency program, the original goal of the project was to establish a digital community of 10 million e-Estonians by 2025¹. In 2018, the project goals were specified in the e-residency 2.0. white paper document. The priority, according to that paper, was no longer on quantities and expanding the number of e-residents, but on consistency - advantages, security, and convenience (Korjus, 2018).

This master's thesis focuses on the Estonian e-residency program and more specifically on the strategic goal's evaluation. The author evaluates meeting the strategic goals based on the e-residency white paper 2.0 as it is the only publicly available source containing the e-residency program strategic goals.

The aim is to improve the Estonian e-residency program by evaluating the achievement of the strategic goals of the project from the public sector and entrepreneur's perspective. Those two viewpoints play the most significant role in the e-residency program context by shaping its development directions. The author believes that by re-designing some of the aspects of the program it is possible to turn Estonia into an appealing business environment by using the e-residency.

1.1.Motivation for the research

When the Estonian e-residency project was launched, it was a unique project and idea enabling first-time electronic residency for the third countries nationals. The project's main strategic goal was establishing a digital society, furthermore, enhance the Estonian national income. Lately, the program has been reviewed by the National Audit Office (National Audit Office of Estonia, 2020), which highlighted several challenges that affect

¹ <https://e-estonia.com/estonia-hits-the-10-000-e-resident-milestone/>

the program's efficiency. The criticism for the program not only from the state's side but also from the e-residents side.

It is evident that the program faced some internal challenges, for example, the security issues, since not all countries have the same techniques for identifying people, and how various Estonian security agents would examine candidates' records and authenticate their application documents. Besides the difficulties, that the applicants could meet the program has external barriers, such as distribution points that are not available in all countries where some of the candidates have to travel from one country to another to receive their DigiID.

Moreover, the external challenges include competition, as some countries show their interest to offer their virtual residency to those who are looking for free space where they can run their companies. Examples of these competitors are Lithuania, Georgia, Azerbaijan, the United Arab Emirates, and Portugal, who are eager to discuss and develop their projects like Estonian e-residency.

This report and criticism caught the author's attention, as the e-residency program image on the international scale has been rather positive. The author of the thesis proposed a meeting with the representatives of Enterprise Estonia (EAS) to clarify the research subject and concerns. This preliminary meeting showed unclarity of the strategic goals of the project besides the methods that have been followed to achieve these goals. Based on the discussions, the author developed further research agenda and began to schedule data collection activities. The author believes that despite the previously named obstacles, the Estonian e-residency project has a lot of potentials.

1.2. Thesis structure

The thesis contains nine sections. The author describes the inspiration for the thesis as well as the thesis structure in the first chapter. The second chapter presents the main research question with sub-research questions that cover both visions that are mandatory to answer the main research question.

In the third chapter, the author presents the research methodology, and the fourth chapter provides an overview of the theoretical background. In the fifth chapter, the author presents the literature review regarding the work carried out in the field of e-residency. Furthermore, the author brings out and describes similar programs to the Estonian e-residency.

To provide a better understanding of the Estonian e-residency program, chapter six provides background information by describing the Estonian e-residency program, its main stakeholders, and the profile of e-residents.

In the seventh chapter, the author presents the research results from the public sector representatives and entrepreneurs' perspectives. The eighth chapter aims to create a discussion based on the results mentioned in the seventh chapter of the thesis regarding the evaluation of the achieved strategic goals to improve the e-residency program and the strategy-building process. In addition, the author covers the further research perspective. Eventually, the author sums up the research and findings in chapter nine followed by a list of references and appendices.

2. Research Questions

The main objective of this thesis is to evaluate the achievements of the strategic goals of the Estonian e-residency program and to assess whether the Estonian e-residency programme has met the public authorities and main users, more accurately e-resident entrepreneurs, expectations.

To determine if the Estonian e-residency's strategic goals were fulfilled, it's essential to define the motivations for the public and private sectors (entrepreneurs) and analyse various statistical, documentary, and legal streams. Estonian e-residency is the typical extension to the Estonian advanced level of information and communication technology (ICT) (MUMBAI, 2013).

In addition, it is important to define the relationships between the different stakeholders besides assessing their understanding of these strategies and the activities that aimed to maximize the benefit of the stakeholders. The main two beneficiaries are, on one side, the state including the society and service providers, and, on the other side, the applicants who applied to the program.

One of the main goals of the e-residency project is to encourage the Estonian economy. First years of the project, Estonia was focusing on increasing the number of e-residents but soon it was clear that a new direction is needed. By the strategy “Estonian e-residency 2.0” (also called e-residency white paper) the new direction aims to develop the project on the next level by focusing on the quality aspects².

Currently, Estonia has around 76 000 e-residents but only a small amount of them have established companies or have some business activity in Estonia. From all established companies, only a few have achieved remarkable income and become valuable partners for the state. Therefore, it is important to study how the strategic goals of the e-residency

² Estonian e-residency 2.0. Available: <https://s3.eu-central-1.amazonaws.com/ereswhitepaper/e-Residency+2.0+white+paper+English.pdf>

project have been met from the state and entrepreneurs' point of view and make proposals to improve the program.

Based on the previously described situation, the author shaped the following main research question:

In how far (and in how far not) and why is the Estonian e-residency initiative successful from the state and the entrepreneur perspective?

Within the main research question, the author is focusing separately on two main perspectives: state and entrepreneurs' perspective and developed following sub-questions.

SRQ 1. In how far (and in how far not) and why is the Estonian e-residency initiative successful from the state perspective?

- 1.1. What have been the strategic goals?
- 1.2. How did the strategic goals develop?
- 1.3. Have the strategic goals been met? Which, why? Which not, why?

To answer this sub-question the author analyses different available official documents and conducts interviews with the state representatives.

SRQ 2. In how far (and in how far not) and why is the Estonian e-residency initiative successful from the entrepreneur perspective?

- 2.1 What have been the expectations of the entrepreneurs towards e-residency?
- 2.2 Have the expectations of the entrepreneurs been met? Which, why? Which, why not? (strategically, or technically: e.g., weak support, etc.)
- 2.3 How did entrepreneurs benefit from e-residency? (beyond the original expectations).

To answer this sub-question the author conducted semi-structured in-depth interviews with the entrepreneurs.

Moreover, based on the research results it is possible to identify the entrepreneur's

expectations and the companies that are the most promising to succeed later (in service of approaching them as leads in the sense of CRM in selling the e-residency program). However, the main goal of the research is to create additional value for the e-residency programme from a strategic perspective.

3. Research Methodology

E-residency is a complex phenomenon comprising different aspects starting from the organisational view to the technological framework. Also, e-Residency is not a separate phenomenon but a part of other nationally important systems (e.g., eID ecosystem). Therefore, the author relies on the institutional design for complex technological systems designed by Koppenjan and Groenewegen to understand the e-residency phenomenon in a more systematic way (Koppenjan & Groenewegen, 2005a). The author provides a more detailed overview of the previously named institutional design framework in chapter six. Following figure presents the relation between the e-residency technological, institutional, and process design.

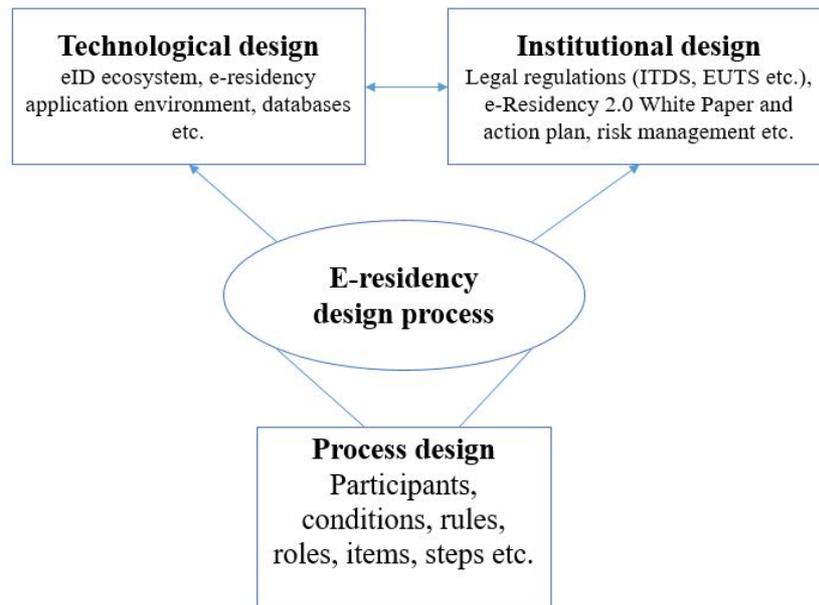


Figure 1. Positioning e-residency institutional design (Koppenjan & Groenewegen, 2005a)

In the framework of this thesis, the author focuses mainly on the institutional design part and the development of the e-Residency strategical goals. Also, the author gives in chapter six an overview of the e-Residency technological design. To improve the e-residency process, it is important to describe and analyse both - the technological and institutional aspects.

This research follows the case study methodology, and the author has chosen more specifically the explanatory case study as a research strategy (Yin, 2018). Throughout the research, the author links together different data sources like qualitative interviews with public and private sector entities, documentary sources etc. to answer the research questions (Runeson et al., 2012). The detailed research process is presented in the following figure.

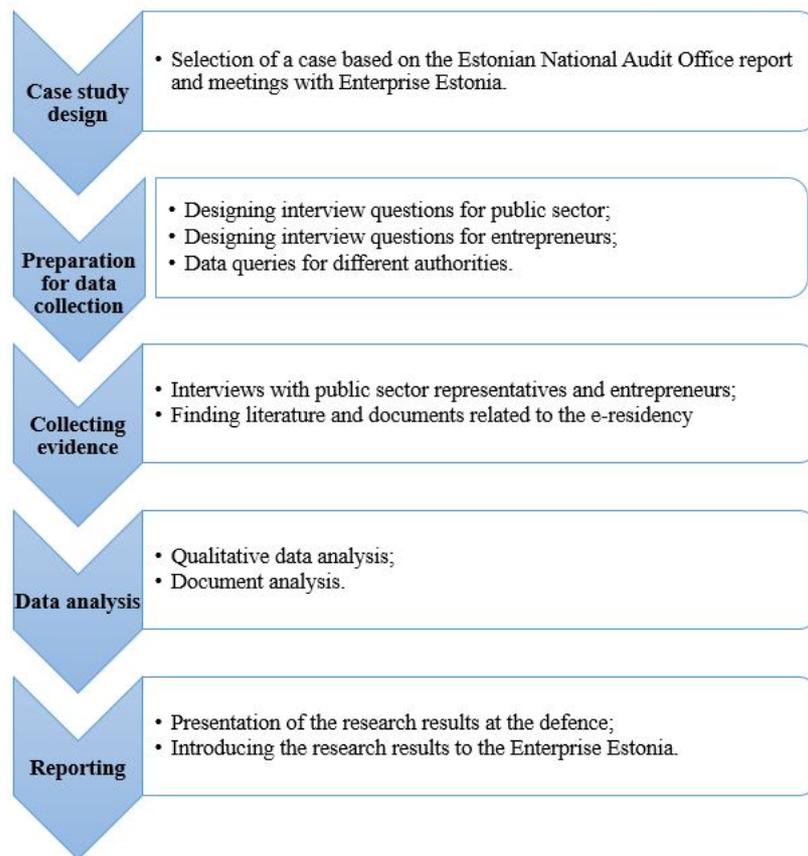


Figure 2. Research process (Runeson et al., 2012)

The author identified the research need and set the focus on this particular case based on the existing documentation, especially on the Estonian National Audit Office Report “Effectiveness of the e-Residency programme”(National Audit Office of Estonia, July 2020.)Based on the first findings the author organised an additional meeting with EAS to clarify the research topic and questions. The meeting was held on the 08th of January 2021 via Teams.

After the meeting, the author formed the research strategy and started planning the data collection activities. To understand if the strategic goals of e-residency were met, it is important to cover the public and private sector (entrepreneurs) perspective and analyse different statistical, documented, and legal sources. The general research design of this thesis is presented in the following figure.

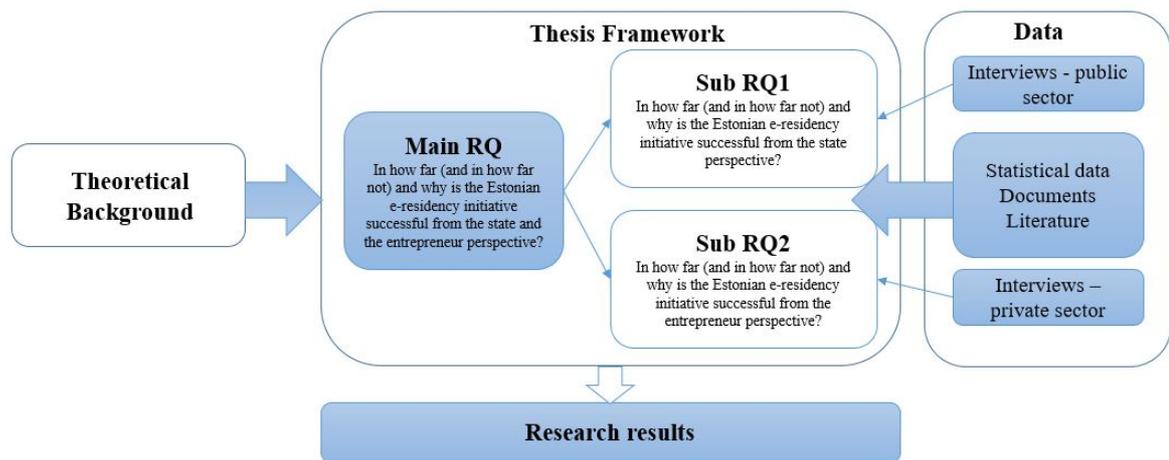


Figure 3. Research design.

The author decided to use a qualitative research approach and prepared two different semi-structured interviews to understand the public and private sector views (Creswell & Creswell, 2017). The qualitative research approach was chosen mainly because it enables to research more deeply the relations between the strategic goals and expectations between different sectors. Therefore, five semi-structured interviews were conducted with the public sector representatives who were involved in the e-residency strategy-building process.

Seven interviews were conducted with the e-resident entrepreneurs to research their initial expectations towards e-residency and how the expectations were met. Due to the data protection rules, it was challenging to reach e-resident entrepreneurs. The author contacted via e-mail Enterprise Estonia³ (several e-mails from December 2020 to

³ Enterprise Estonia. Available: Avaleht ENG - EAS

February 2021), the Centre of Registers and Information Systems⁴ (10.02.2021), Statistics Estonia⁵ (11.02.2021), and the Estonian Tax and Customs Board⁶ (08.02.2021). All previously named authorities refused to give out company names established by e-residents referring to different legal and data protection constraints. Finally, the author decided to use publicly available sources to schedule the interviews (e-Residency FaceBook groups and other publicly available sources).

All interviews were conducted in English using online communication channels (Teams or Skype for Business), recorded based on the interviewees' prior consent, and later transcribed. The duration of the interviews remained between 45 minutes up to one hour. Interviewees were also informed about the purpose of the interview and the whole research.

The author transcribed recorded interviews into written text for data analysis, which is one of the most important steps before beginning the thematic analysis (Clarke & Braun, 2014). To ensure that no significant information was missed, transcripts were re-read several times and initial records have listened to again.

The author identified the most relevant themes and mapped all interesting characteristics into different codes in the next stage of the thematic analysis, which involved in-depth analysis of the completely transcribed results (Clarke & Braun, 2014). First, various marking methods were used, such as highlighting and underlining, in which keywords that were deemed essential for the study were highlighted with a particular colour or line throughout each transcribed interview result.

Upon going through the details several times, most of the identifiers were written down on post-it notes so that they could be reorganized during the analysis process. Following that, keywords were put together based on their similarities and relations to generate possible themes upon which the subsequent research would be constructed.

⁴ Centre of Registers and Information Systems. Available: [Registrite ja Infosüsteemide Keskus \(rik.ee\)](http://Registrite ja Infosüsteemide Keskus (rik.ee))

⁵ Statistics Estonia. Available: Home | Statistikaamet

⁶ Estonian Tax and Customs Board. Available: [Private client | Estonian Tax and Customs Board \(emta.ee\)](http://Private client | Estonian Tax and Customs Board (emta.ee))

Since there were so many questions that have been raised during the interviews, therefore many keywords and themes arose from the study, the author narrows down the list of themes based on which were also relevant in terms of the research questions.

4. Theoretical Background

E-residency program is a complex phenomenon that contains different layers and aspects. In this chapter, the author gives an overview of the theoretical concepts that shape the framework of this thesis: an institutional design for complex technological systems, identity theory, and change management.

Before it is possible to make recommendations to improve the existing system, it is important to understand the Estonian eID ecosystem and the nature of digital identity behind that. Therefore, the author uses the institutional design framework for complex technological systems designed by Koppenjan and Groenewegen to understand the different layers of the Estonian e-residency program (Koppenjan & Groenewegen, 2005b). The core of the e-residency is electronic identity and its management. To understand the nature of the electronic identity and its relation to the individual, the author relies on the identity theory (Identity Theory - Peter J. Burke, Jan E. Stets - Google Books, 2009.). Impstate-level level processes involving various stakeholders presumes an elaborated approach based on change management principles (Cameron, E., & Green, M. 2019).

4.1 Institutional design for complex technological systems

Joop Koppenjan and John Groenewegen developed the institutional design four-layer model for complex technological systems (Koppenjan & Groenewegen, 2005b). This model bases on the institutional framework proposed by Óliver Williamson (Williamson, 1998). The following figure presents four different layers of the institutional design framework.

- **Layer 1** reflects the layer of individual actors and interaction between different parties in the framework of a complex technological system (Koppenjan & Groenewegen, 2005b).
- **Layer 2** contains formal and informal institutional arrangements, in other words, different agreements, mergers, rules, norms, etc. (Koppenjan & Groenewegen, 2005b).

- **Layer 3** describes the legal environment and applicable legislation(Koppenjan & Groenewegen, 2005b).
- **Layer 4** contains the informal rules of the institutional environment, like norms, values, etc.(Koppenjan & Groenewegen, 2005b).

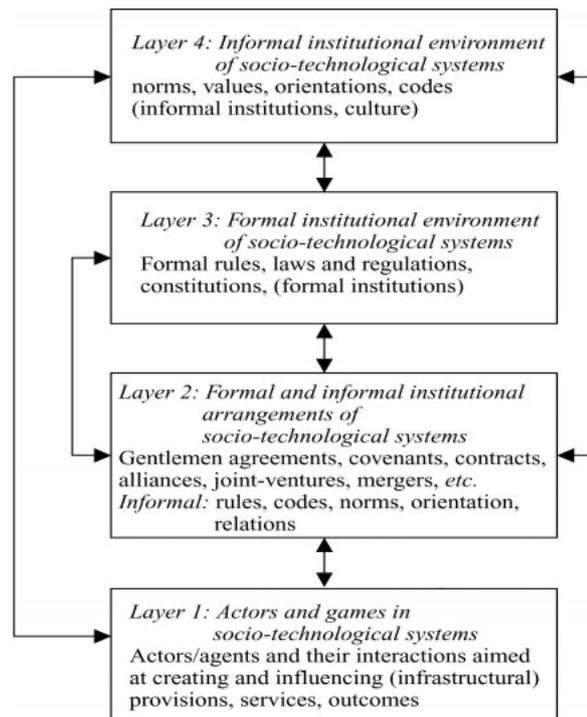


Figure 4. Levels of institutional analysis (Williamson, 1998)

Describing the Estonian e-residency program through these four different layers makes it easier to understand this complex socio-technological system and enables to analyse the program from different perspectives. The following figure presents the Estonian e-residency program through the previously described four layers.

Layer	Estonian e-Residency initiative
Layer 4: Informal institutional environment	Estonian eID has a good reputation on the international level and people seem to trust government and public sector institutions responsible for the identity management and eID technical ecosystem (Muldme, Pappel, Lauk & Draheim, 2018; Tsap, Lips & Draheim, 2020).
Layer 3: Formal institutional environment	The most important legal acts from the Estonian e-Residency perspective are related to the eID area. From the European Union side - the European Parliament and of the Council regulation on electronic identification and trust services for electronic transactions in the internal market (eIDAS). On the state level from eID perspective: Electronic Identification and Trust Services for Electronic Transactions Act, Identity Documents Act and from the risk management perspective for example Money Laundering and Terrorist Financing Prevention Act.
Layer 2: Formal and informal institutional agreements	Strategic directions of the Estonian e-Residency initiative are described in the e-Residency 2.0 white paper developed together with different public and private sector stakeholders and its action plan. eID area itself is managed in a form of public-private partnership (PPP) (Lips, Aas, Pappel & Draheim, 2019).
Layer 1: Actors and games	Public sector authorities (Ministry of Economics and Communications, Ministry of the Interior, Ministry of Foreign Affairs, Information System Authority, Police and Border Guard Board, Enterprise Estonia, Tax and Customs Board etc.) Private sector authorities (e-residents, banks, e-service providers, SK ID solutions AS, IDEMIA etc.).

Figure 5. The layer model applied to the Estonian e-residency program

4.2 Identity theory

Identity theory is one of the key concepts in the context of e-residency. During the e-residency application, the state creates the electronic identity for the individual from the third country. The aim of the identity theory is exactly to explain the phenomenon when the individual has multiple identities in the society and how these identities are related (Identity Theory - Peter J. Burke, Jan E. Stets - Google Books, 2009.)

Identity theory is a micro-sociological theory that tries to explain the role-related behaviour of individuals represented by authors like Burke, McCall, Simmons, Stryker, and Turner (Hogg et al., 1995). In the e-residency context, the status of being an e-resident and the state-issued electronic identity connect with the individual by the commitment and become a part of the individual's identity.

According to the identity theory an individual can have multiple identities (Stets & Carter, 2011) Electronic identity together with the e-residency status can be one of them. Therefore, it is possible to say that Estonian e-residency becomes a part of the applicants' identity and self-determination.

4.3 Change Management

Everything around us constantly develops and changes and it is not possible to avoid this process. However, it is possible to choose, whether to let the changes happen or take the lead and try to direct and influence the change process by following certain principles. Here, change management theory provides different models and ways how to cope with different types of changes and handle the complexities during the whole change process(Paton, R. A., & McCalman, J. (2008))

In the framework of this thesis, it is not possible to go deeply into different change management theories and concepts. The author focuses only on the most relevant aspects he changes management to evaluate and improve the current e-residency strategy-building buildings. It means that the strategy-building itself become a subject of change management.

Changes may base on internal or external drivers. To be successful in the change process, it is important to understand and define the need for change and engage all relevant stakeholders in the discussions(Change Management: A Guide to Effective Implementation - Professor Robert A Paton, James McCalman - Google Books, 2015). From the e-residency program perspective, it means that before defining new strategic perspectives, it has to be clear that previously agreed directions are not beneficial, and it is necessary to adjust them. The change process itself follows the chosen model.

As already mentioned above, there are different models of the change process available. In the e-residency strategy building context it is suitable to bring out two main change management models:

- **Lewin's three-stage model** –a simple three-step model (unfreeze, change, refreeze) developed by social psychologist Kurt Lewin(Burnes, 2004). The following figure describes the model more in detail.

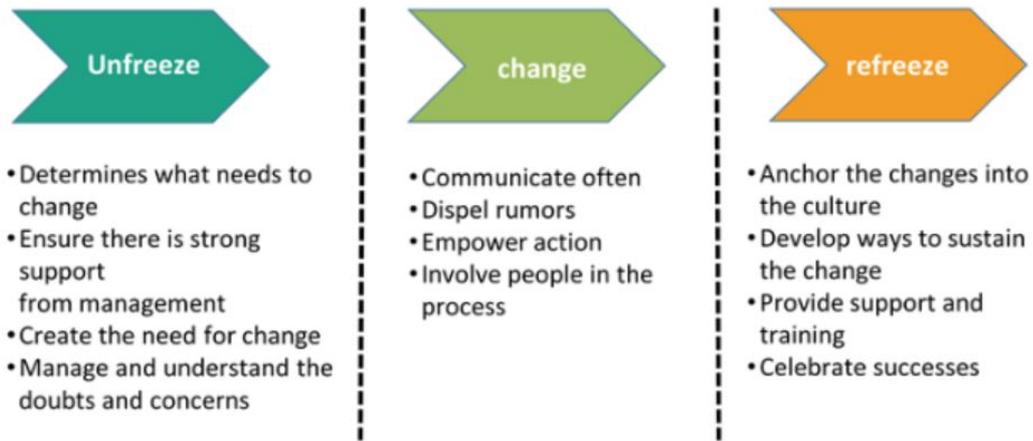


Figure 6. Lewin's three-step model(Burnes, 2004).

However, this model is more than fifty years old, and critics find that this too simplified approach does not correspond fully to the moderns(Burnes, 2004).

- **Kotter's eight-step eight-step** change management model bases on common errors that organisations make during the change's implementation process (Paton, R. A., & McCalman, J. (2008) Following figure presents the eight steps of the model.



Figure 7. Kotter's eight-step model (Paton, R. A., & McCalman, J. (2008).

The model is still usable and valid despite having several limitations(Appelbaum, Habashy, Malo & Shafiq, 2012).

Considering the research results of this thesis the author proposes the most suitable model for the Estonian e-residency strategy changing process.

5. Related Work

This chapter provides an insight into thee-residency related academic literature. Due to the uniqueness of the program, there are several works available about the e-residency. The author used the author search databases (Google Scholar⁷ and Scopus⁸) to map the related works. However, every work is different and focuses on different t aspects of the program. author authored out that, there are no specific works available focusing only on the strategic aspects of the e-residency program. In this chapter first, the author gives a general overview of the e-residency related literature and then describes similar programs to the Estonian e-residency program.

5.1 E-residency related literature

With the existing electronic identity (eID) system and well-developed e-service networks, Estonia was able to effectively handle the COVID-19 crisis. Consequently, we may assume that digital Estonia was able to meet those obstacles. Furthermore, Estonia provides third-country citizens with access to its digital networks through a pioneering e-residency project. Estonia was the first country to provide eIDs to third-country nationals, allowing them to establish new businesses and providing digital infrastructure for freelancers, developers, and investors (Kotka, T., Vargas, C., & Korjus, K., 2015).

The e-residency electronic identification card (also known as DigiID) allows users to authenticate themselves in various online settings and gives them equal access to Estonian online services as physical residents. Users may digitally sign documents (which are legitimately enforceable in every EU Member State), execute online financial transfers, encrypt documents, and register taxes online, among other items (Särav, S., Kerikmäe, T., 2016). The initial goal of the programme was to develop the Estonian digital society by 2025 (E-estonia, 2016). The key purpose of this project was to enhance Estonia as a competitive e-state, raise revenue and investments, and support the country's economy (Kimmo, M., Pappel, I., Draheim D., 2018).

⁷ Google Scholar. Available: <https://scholar.google.com/>

⁸ Scopus. Available: Scopus prev <https://www.scopus.com/home.uriiew> - Scopus - Welcome to Scopus

Most of the sources describe the novelty of the program and analyse its uniqueness by emphasizing that Estonia became the first state that opens borders and offered its digital identity to them (Anthes, 2015). Estonia is the first state that opens its public opensidess to the universe through its digital ID, digital signature is one of these available services, furthermore, establish and run of the companies and tax declaration. Although it is secured from the technical point of view, the notion of e-residency is based on a flawed definition and a contradictory Estonian national regulatory system that does not completely support its incorporation (Särav, S., Kerikmäe, T., 2016).

Other sources mention that Estonia is known as the driver of global digital governance (Drechsler, 2018). The Estonian digital identities are using widely in all life aspects in Estonia (Gat, 2018) the same identities are used with the e-residents as they are using the digital identity that enables them from performing all the public treatments. The Estonian e-residency gives the e-residents that hold the digital identification cards several rights and access to different public services that are unapplied in the majority of the EU states, the effectiveness of e-residency is examined from the viewpoint of the regulatory system, which assumes advanced administrative competence while leaving the extent and boundaries of public authorities' roles legally and separated from the EU legal space (Kerikmäe & Särav, 2015)

Some sources see the Estonian e-residency program as a marketing project or a national branding case and focus on this aspect. Estonia's e-residency program is a communication tool through which national branding is directly linked to the country's ICT policy (Tamppuu, P., & Masso, A., 2018). The program has proposed the nation branding and building strategy. Through then mixing different tools and approaches were hats used to create the final image of Estonia in a comparative time perspective. In many aspects, this experiment is going to explain how digitalization of governance has worked and how this tool might improve their countries quality of life(“Estonian Identity Construction Between Nation Branding and Building,” 2020)

For the purposes of country branding and national identity management, the concepts of electronic residency have been used. Although the imagery built around the conceptions of the e-residency makes the transformation of national space into a product, internationally powerful and accessible transnational space, it also allows for local

appeals to intact national space' and legitimises e-residency as a 'socio-culturally secure', digitally mediated internationalisation (Tammpuu & Masso, 2018). Estonia successfully tried to sell its digital solutions through the e-residency program to attract the foreigners to work in Estonia using the Estonian online public services (Kerikmäe & Pärn-Lee, 2020)

Other papers focus on the service and business side of the e-residency bringing out the benefits of the program. The electronic identification system is part of the transitional electronic identity scheme that gives the e-residency as a global citizen remote access to the Estonian e-services. Individual sociodemographic characteristics and macro-level characteristics assessing digital and economic growth in the applicant's country of origin influence individual motivations to apply for the e-residency (Tammpuu & Masso, 2019). The e-residency has an impact on smart rural development as well as the local entrepreneurs. It facilitates the development of the country's business environment (Prause, G., & Boevsky, I., 2016). The e-residency concept eases the development and the implementation of industry 4.0, additionally, it offers more opportunities to the business models as well as the logistics solution and supply chain and product distribution (Prause, 2016)

The Estonian e-residency is an example of the service where the border between the devices (that enables from the services) and the service itself is very blurred. Also, several factors distinguish the e-residency adoption process in addition to the complexity of the process more than it is expected to be (Uljalala, L., & Scupola, A., 2018). On the other hand, the e-residency enhances the opportunities for running location-independent businesses that can be run within the EU legal framework. The e-residency is the option that tackles the shortage of the local policies or infrastructure, furthermore, develops the integration with the world trade (GODOY, D. G. S., & HEAL, A., 2016).

Some papers focus more on the philosophical aspects of the e-residency, discuss the citizenship, national state, and legal status related aspects. The Estonian e-residency is challenging the typical concepts of residency as well as citizenship. There is a wider scope of the project of e-Residency for conventional understandings of the nation-state (Uljalala, 2016). The e-residency initiative enabled foreigners from becoming electronic residents as it challenged the traditional notions of residency it also re-identifies the nation concept in the digital period (Kotka, T., Vargas, C., & Korjus, K., 2015). The e-residency initiative

enabled foreigners from becoming electronic residents as it challenged the traditional notions of residency it also re-identify the nation concept in the digital period (Kotka, T., Vargas, C., & Korjus, K., 2015). However, the e-residency does not change the characterization of the state (Peets, 2017). It is even mentioned that the Estonian(Roots & Dumbrava, 2016) e-residency provides the model to create the European e-resident model(Roots & Dumbrava, 2016).

The Estonian e-residency program has been also investigated as a soft power that develops the state position. The program as a digital tool can be considered as a tool that enhances the political capital of the state(Blue, 2020).

Finally, the author's academic sources that bring together the e-residency and blockchain technology. Blockchain technology developed the use of the smart card that enables the digital signature of the users regardless of their locations to do and follow their business and legalize their certificates (Jacobovitz, 2016). The Estonian e-Residency team is collaborating with private businesses to offer universal identification services, the most notable of which is the use of blockchain technologies to verify identities and identity records. The use of blockchain for e-Residency could revolutionize the way identity data is managed and verified. Decentralized, cryptographically signed proof of life is provided by blockchain Technologies (Sullivan & Burger, 2017).

5.2 Similar programs to the e-residency

After the launching of the Estonian e-residency program, other countries have started to develop similar programs to benefit from this concept. However, there is not too much academic literature published and available in this particular field.

The second country that launched the e-residency program was Azerbaijan. In 2018, the country launched its e-Residency (Electronic Residency) program and in addition to that m-Residency (Mobile Residency) program. Azerbaijan is the first country to offer mobile residency to third-country nationals (Khudiyeva, 2020). The Digital Trade Hub of Azerbaijan runs the program (Blue, 2020). With both residencies, it is possible to set company and run runs remotely (Dth, 2019).

On 3 October 2018, the Georgian Government announced a proposal to introduce an e-residency program (Nadiezhkina, 2018). However, it is not clear if the country implemented the project, as it is not possible to find any further application information on the Internet.

At the beginning of 2021, Lithuania was launching an e-residency scheme (Lithuania launches own national e-residency scheme, 2021). Similarly, to the Estonian e-residency program the, Lithuanian e-residency scheme allows foreigners to open bank accounts, set up companies, and declare taxes online. The project was delayed due to technical reasons (Lithuania readies for e-residency programme roll-out, 2021). As the e-residency initiative is quite new in Lithuania, it is too early to compare it with the Estonian e-residency program.

6. Background

The E-Residency program was founded in 2014 by different Estonian government authorities. The program aims to enable the use of public and private sector e-services for European Union (EU) citizens and third-country nationals.⁹ The following chapter provides an overview of the e-residency program, the main involved stakeholders, and a brief insight into the profile of the e-residents and the strategy development process.

6.1. e-Residency program overview

On the 1st of December 2014 entered into force the changes of the Identity Documents Act¹⁰ that enabled the implementation of the e-residency concept (Annus, 2020). Based on this legal act it is possible to issue a digital identity card for e-residents. “The objective of the issue of an e-resident’s digital identity card is to promote the development of the Estonian economy, science, education or culture by providing access to e-services with the Estonian digital document” (Identity Documents Act, 2021).

The first strategic goals of the e-residency program were ambitious. The goal was to have 10 million e-residents by 2025.¹¹ Soon it was clear that the initial plan needs revision. Therefore, in 2018 new vision document e-residency 2.0 white paper was created with a focus on the quality aspects of the program followed by the action plan approved by the government of Estonia.¹² Currently, Estonia has more than 70 000 e-residency digital cardholders from 165 countries.¹³ Digital identity card enables electronic authentication, eIDAS¹⁴ compliant electronic signature, and encryption of the documents (Lips et al., 2018). It means that the digital identity card is electronic use only and does not grant any physical permission to enter the country as mentioned earlier.

⁹ <https://e-resident.gov.ee/eesti/>

¹⁰ Identity Documents Act. Available: <https://www.riigiteataja.ee/en/eli/528122020004/consolide>

¹¹ <https://www.theworldweekly.com/reader/view/4247/eestonia-state-of-the-future>

¹² <https://e-estonia.com/e-residency-2-0-enhanced-efficiency-security-and-convenience/>

¹³ <https://e-estonia.com/solutions/e-identity/e-residency/>

¹⁴ European Union: Regulation (EU) no. 910/2014 of the European Parliament and of the council of 23 July 2014 on electronic identification and trust services for electronic transactions in the internal market and repealing directive 1999/93/EC (2014)

DigiID is a part of the Estonian electronic identity (eID) ecosystem – a complex PKI (public key infrastructure)-based e-governance system managed by the public sector and operated in an operation with public and private sector authorities(Lips et al., 2019). Starting from December 2018 Estonia issues the fourth generation of eID documents, including digiID’s for e-residents with a new layout. FoThe following figures show the latest layout of the e-residency digiID.



Figure 8. The front side of the digiID.¹⁵



Figure 9. The backside of the digiID.¹⁶

The e-residency application process has been continuously developing throughout the years. The following figure gives a general overview of the whole process starting from the application through the e-application system to the issuance of the digiID to the e-resident.

¹⁵ https://www.riigiteataja.ee/aktiilisa/1091/1201/8003/SIM_m25_Lisa.pdf#

¹⁶ https://www.riigiteataja.ee/aktiilisa/1091/1201/8003/SIM_m25_Lisa.pdf#

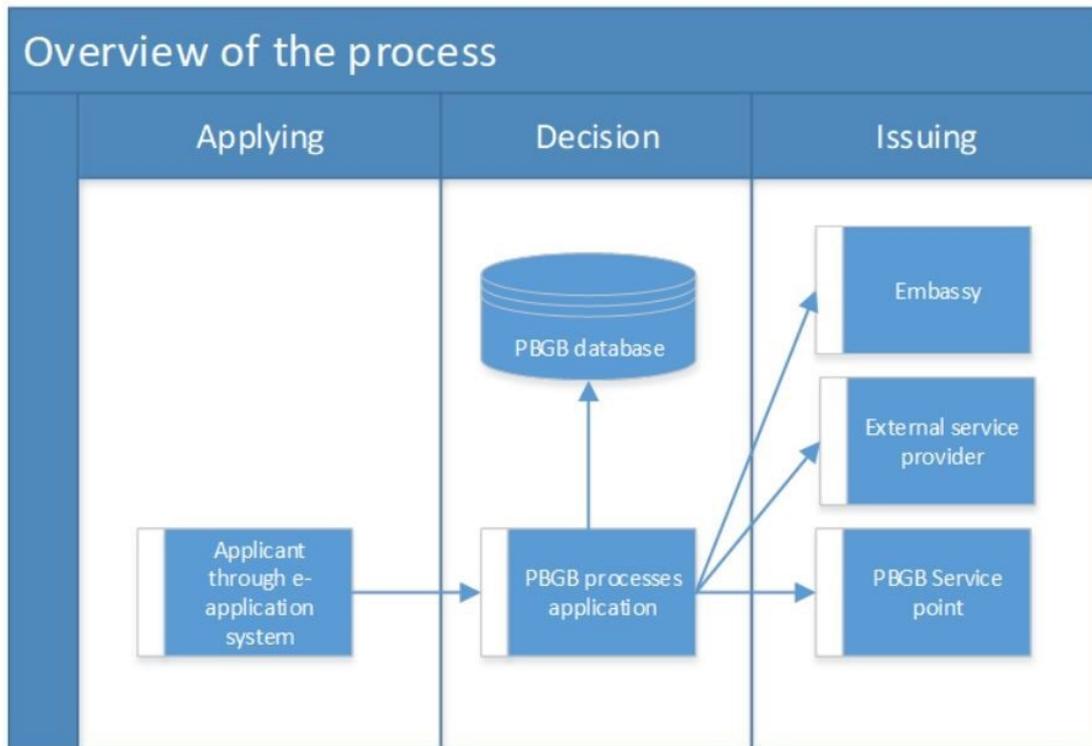


Figure 10. E-Residency application process (figure provided by PBGB).

In addition to the online application environment¹⁷, it is possible to apply for the e-residency digiID at the service points of the PBGB in Estonia and the Estonian embassies and consular offices around the world.¹⁸ Starting from the 30.03.2021 PBGB introduces a new digiID e-application system. PBGB processes the application using different databases and cooperating with different state authorities. It is possible to collect the issued card from the Estonian embassies, PBGB service points in Estonia, or at the external service provider's service points.

6.2.e-Residency stakeholders

In the case of e-residency, it is hard to determine the exact circle of stakeholders. The before, the author decided to divide the e-residency stakeholders as primary and secondary stakeholders. Primary stakeholders are directly related to the e-residency

¹⁷ <https://e-resident.gov.ee/become-an-e-resident/>

¹⁸ <https://www.eesti.ee/en/doing-business/eresidency/#howtoapplyforeresidency2>

program. Secondary stakeholders are responsible for the eID ecosystem and indirectly related to the e-residency program.

Primary stakeholders are:

- **Enterprise Estonia** - Estonian governmental agency responsible for the promotion of the Estonian digital society responsible for e-residency program as well as putting the strategy for the program and preconditions for the development of e-services (EAS, 2018).
- **Ministry of Economic Affairs and Communication**– responsible for the national digital development that focuses on national economic developments (Ministry of Economic Affairs and Communications, 2018).
- **Police and Border Guard Board** - responsible for identifying the applicants and identity management, also responsible for the procurement of identity document tokens and ensures their issuance. In addition, PBGB is responsible for the application of the e-residents digital identity card (PBGB, 2021).
- **Ministry of the Interior** – responsible for the e-residency program risk management as well as identity documents issuance policy (siseministerium, 2021).
- **Ministry of Foreign Affairs** – ensures that the rights of Estonians in other countries are protected. Receives applications for identification documents (including e-residency digiID) and issues them (vm, 2020).
- **External service providers** – partners for the PBGB in the e-residency digiID application and issuance process abroad. The current partner is VFS Global.¹⁹

Secondary stakeholders are:

- **Estonian Information System Authority** – responsible for the construction and maintenance of the trust resources infrastructure, develops and manages secure data exchange (X-road, document exchange) between institutions, an overview of state information systems and data (RIHA), the use of electronic identity, the functioning and protection of the state broadband network, organisation of e-elections, the activities of the State Portal eesti.ee, and the work of the ID-card

¹⁹ VFS Global. Available: <https://www.vfsglobal.com/en/individuals/index.html>

help centre, as well as eID applications. Has a supervisory position also supervises the national cybersecurity incidents (RIA, 2021).

- **IT and development centre. Ministry of the Interior** – evolves, procures, and maintains ICT solutions for the internal security sector, including computer systems for identity verification and identity records (Smit.ee, 2021).
- **Trust service provider** - SK ID Solutions AS is responsible for the issuance of the certificates to the Estonian identity documents and provides trust service-related services.²⁰
- **digID manufacturer** - currently IDEMIA France S.A.S.²¹

6.3. Profile of e-residents

In this subchapter, the author describes the profile of e-residents. The focus is on entrepreneurs and companies author illustrates the chapter with statistical data provided by Statistics Estonia, Police and Border Guard Board, and Enterprise Estonia.

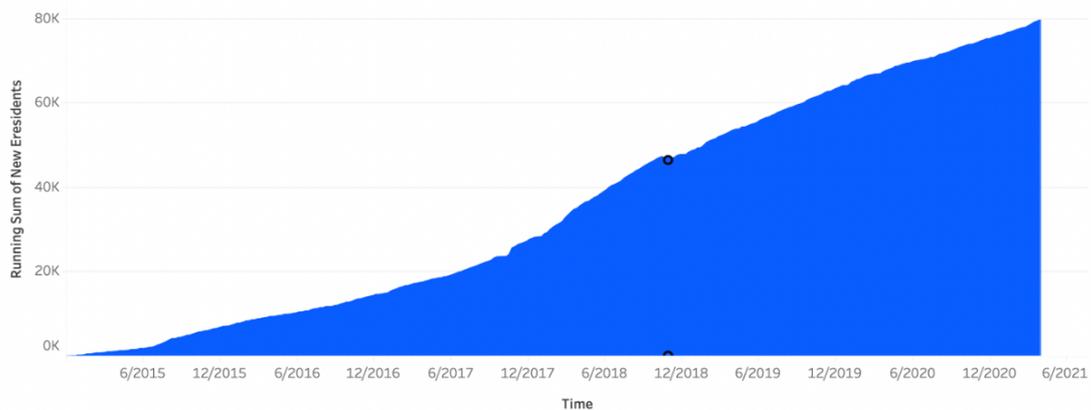
According to the public e-Residency stats dashboard, currently, Estonia has over 79,588 e-residents (e-Residency dashboard, 2021).

Last update: 05.04.2021

Total number of e-residents

79,588

e-Residents over time



²⁰ <https://www.skidsolutions.eu/en>

²¹ <https://www.idemia.com/>

Figure 11. Total number of e-residents²²

Over 14,200 companies have been licensed in Estonia because of the involvement of 20% of these e-residents²³. In 2018, more than 20,500 people became e-residents, or about 1,700 applicants every month on average, became an e-resident. In 2019, the number of new e-residents was about three-quarters of that, with an average of 1,300 people per month.

The number of new e-residents has been smaller than last year in most months of 2020 (on average over 1,000 per month). This may be linked to COVID-19's travel restrictions: to acquire a digiID, an e-resident must visit an Estonian embassy in person and send fingerprints to prove identification.

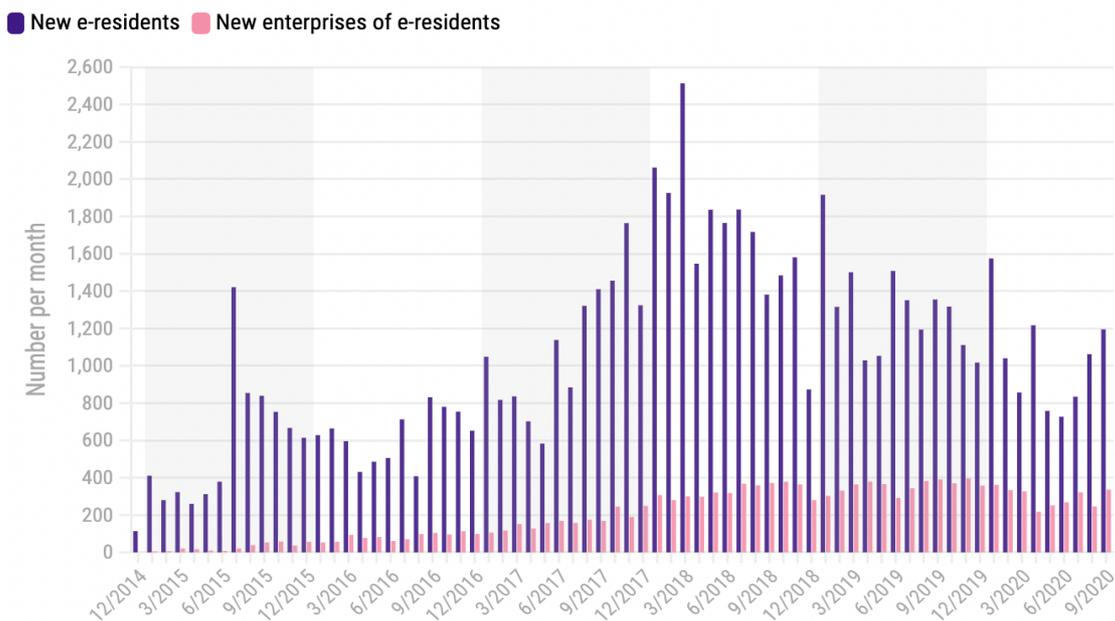


Figure 12. E-residents and established companies²⁴

²² <https://e-resident.gov.ee/dashboard/>

²³ <https://www.stat.ee/en/uudised/iga-viies-e-resident-registreerib-estis-ettevotte>

²⁴ <https://www.stat.ee/en/uudised/iga-viies-e-resident-registreerib-estis-ettevotte>

Estonian e-residents come from 173 different nations. Finland, Russia, Ukraine, and Germany have the most men, however, China, the United Kingdom, India, the United States, Japan, and France round out the top ten. The nationality of current e-residents has changed dramatically over time. Finnish residents constituted a substantial plurality during the program's early years, but their share has steadily decreased. Finnish people accounted for 21% of new e-residents in 2015, but by 2019, their proportion had dropped to 3%. In 2018, Asian countries stand out: Japan and China had the highest number of new e-residents.

Top 50 Application Countries

rank	Nationality	
1	Finland	5,865
2	Russia	5,546
3	Ukraine	4,917
4	Germany	4,808
5	China	3,973
6	United Kingdom	3,943
7	United States of America	3,574
8	India	3,548
9	France	3,526
10	Japan	3,331
11	Italy	3,329
12	Turkey	3,037
13	Spain	2,617
14	Latvia	2,217
15	South Korea	1,815
16	Poland	1,626
17	Netherlands	1,497
18	Sweden	1,477
19	Pakistan	1,237
20	Lithuania	1,065
21	Belarus	1,053
22	Canada	984
23	Greece	951
24	Belgium	938
25	Hungary	865
26	Romania	843
27	Australia	825
28	Egypt	783
29	Iran	748
30	Brazil	725

Top 50 Companies by Countries

rank	Nationality	
1	Ukraine	1,226
2	Germany	1,163
3	Russia	1,134
4	Turkey	898
5	France	858
6	Spain	778
7	Italy	714
8	United Kingdom	624
9	India	603
10	Finland	582
11	United States of America	387
12	Latvia	371
13	Poland	361
14	Japan	320
15	Netherlands	298
16	Greece	269
17	China	263
18	Sweden	227
19	Belarus	220
20	Iran	216
21	Hungary	206
22	Belgium	202
23	Romania	191
24	Canada	171
25	Portugal	164
26	Lithuania	154
27	Australia	141
28	Austria	138
29	Egypt	131
30	South Korea	124

Figure 13. Application countries²⁵

Until receiving the e-residency digiID, applicants must pass a background check conducted by the Estonian Police and Border Guard Board. PBGB identifies the applicant and assesses if a person may be dangerous to the Republic of Estonia. That might sound dramatic, but it is normally only a matter of making sure they do not have any criminal

²⁵ <https://e-resident.gov.ee/dashboard/>

records and are otherwise in good standing. The overwhelming majority of applicants pass these two requirements and are granted e-residency, as seen below. In the blue columns.

The percentage of rejected applications is small, as shown by the pink colour while a slightly larger but still small percentage is labelled as missing, as indicated by the red colour. This means that the PBGB sometimes requests more details from the applicant, particularly if they discover something that might lead to a refusal, but if the applicant does not respond, the application is marked as incomplete.

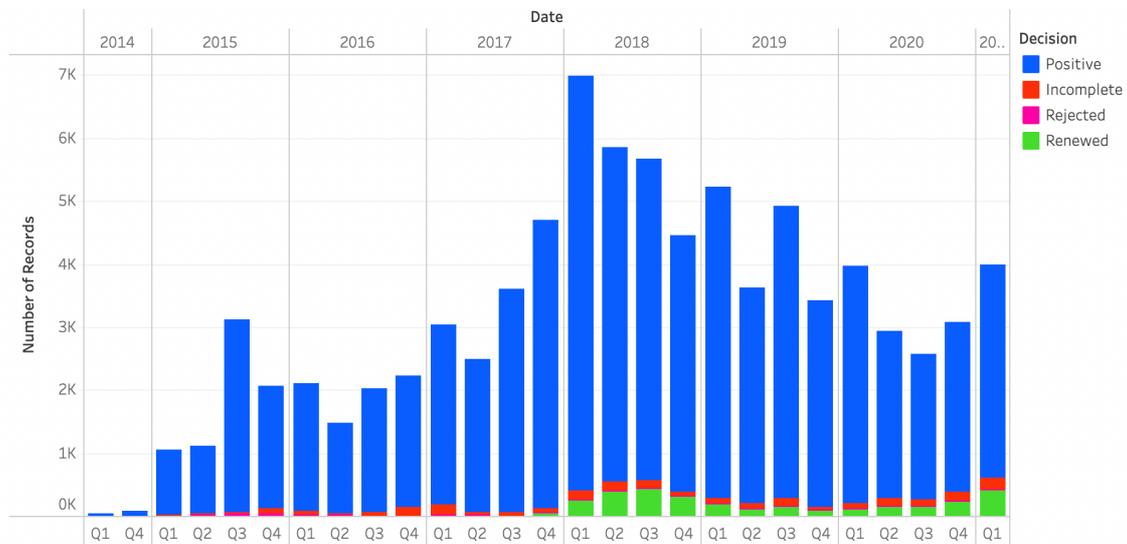


Figure 14. Application outcomes quarterly²⁶

On the application form, e-residents are often questioned about their justification for applying, as described in the below chart. Almost a third are applied to the e-residency to create a location-independent company, which is the program's key goal, but nearly a quarter still want to carry business to Estonia, which is a little unclear but normally entails forming their own Estonian company.

²⁶ <https://e-resident.gov.ee/dashboard/>



Figure 15. Applying motivation for the e-residents²⁷

E-residents' companies mostly focus on three types of business activities. At the time of registration, 39% worked in information and correspondence, 24% in technical, academic, and technological projects, and 17% worked in wholesale and retail trade. The top three economic activities have been consistent over time, and their share of the economy has risen. Whereas these three economic operations accounted for 70% of all new businesses in 2015, they now account for 82 percent of new businesses this year. Data engineering, consulting, and similar services are offered by almost two-thirds of licensed information and communication businesses.

²⁷ <https://e-resident.gov.ee/dashboard/>



Figure 16. Working areas for the residents' companies²⁸

6.4.e-Residency strategy overview

Before it is possible to evaluate meeting the strategical goals, it is important to see how the strategical goals have developed over time and where the strategic goals related to e-residency are coming from. Based on the interviews, it is possible to say that the understanding of the strategical goals varies depending on the interviewee's field of expertise. Therefore, it is important to clarify the strategic scope of the e-residency program.

The first strategic goals can be found from the very early stage of the program from the "10-Million E-Estonian²⁹" concept developed by a small group of people from the Ministry of Economic Affairs and Communication and Ministry of the Interior (Estonian e-Residency: Redefining the Nation-State in the Digital Era, 2015). This was rather a vision and a dream where this program could develop in the future. The aim was to enable as many people as possible from third countries to benefit from the Estonian eID ecosystem (eestonia, 2017). The interviewees also mentioned that the residency program

²⁸ <https://www.stat.ee/en/uudised/iga-viies-e-resident-registreerib-estis-ettevotte>

²⁹ <https://taavikotka.wordpress.com/2014/05/04/10-million-e-estonians-by-2025/>

was quite similar to the private sector start-up initiatives in the beginning. It means that there was a lot of uncertainty and the strategic perspective of the project was not clear. Therefore, it is understandable that after four years of the program implementation the necessity for more concrete strategic directions rises.

In 2018, Enterprise Estonia initiated a process engaging the different public and private sector authorities to improve the e-residency program and to overlook the program's strategic directions. According to the interviewees, the following authorities were engaged in the e-residency 2.0 white paper building process:

- The Office of the President of the Republic of Estonia.
- The Ministry of the Interior.
- Ministry of Foreign Affairs.
- EnterprisEstoniani.
- The e-residency Council.
- Police and Border Guard Board.
- Tax and Customs Board.
- Ministry of Economic Affairs and Communications.
- The Chamber of Service Economy.

The work was organised in different working streams/groups and every working group had a leader who was driving the discussion. After several meetings and based on the conclusions of the working groups e-residency 2.0 white paper was formed (e-residency 2.0 white paper, 2018).

By issuing the e-Residency 2.0 white paper Estonia aimed to improve the efficiency of e-residency use. By creating an action plan that mitigates the security risks related to the applicants while issuing the eID for the e-residents. It also objected to increasing the value created by the e-residents for the public sector. The white paper 2.0 e-residency action plan supports local businesses and the Estonian state by generating more value for the state (MKM, 2019).

Soon after that in August 2019, the Estonian government approved the e-residency 2.0 action plan³⁰. Agreed directions gave the input to the yearly work plans for authorities involved in the management and development of the e-residency program (e.g., EAS, PBGB, etc.). Previously mentioned documents currently expressing the latest strategical approach to the e-residency program.

³⁰ <https://digi.geenius.ee/rubriik/uudis/e-residentsuse-valjastamine-muutub-vorredavaks-viisade-andmisega/>

7. Research Findings

This chapter presents the research findings relevant from the e-residency white paper building process perspective. Research results provide the answers to the main research question and its sub-questions. The author analyses the expert interview results and presents in detail the most interesting and significant research findings from the public sector and entrepreneurs' point of view.

7.1. Important findings – Public sector

The interviews with the public sector aimed to identify the strategic goals and the development as well as meeting the goals by answering the below sub-questions:

- What have been the strategic goals?
- How did the strategic goals develop?
- Have the strategic goals been met? Which, why? Which not, why?

The author creates a semi-structured interview³¹ to answer the previously named sub-questions. The author conducted five in-depth expert interviews with Estonian public sector representatives. Table 1 presents the profile of the public sector interview participants and their relation to the e-residency strategy development.

Table 1. Interview participants (public sector)

Organisation name	Position	Relation to the strategy
Enterprise Estonia	Head of Legal, Risk, and Compliance	Involved
Police and Border Guard Board	Chief expert	involved in its development
SITA	Senior Business Development Manager	Participated in the strategy-building process.

³¹ Appendix 1 – Interview questions (public sector)

Ministry of the Interior	Head of Citizenship and Migration Policy Department	Participated in the strategy-building process.
Enterprise Estonia	Marketing and Communications Team Lead	involved in the strategy development

The author divided the interview with the public sector expertise into three logical sections - „Introduction“, “Development of strategical goals” and “Meeting strategical goals”.

The first section focused on the years of experience and relation to the Estonian e-residency area as well as the performed tasks. All interviewees provided an approximate number of years they have been related to the area. All the interviewees stated the estimated number of years they have regarding the field. The public sector had a median experience of 7,2 years. Where the maximum years of experience were twenty-four years, and the minimum years of experience were two years. All interviewees participated or were involved in the e-residency strategy development process.

The second part of the interview focused in-depth on the strategic goals’ development. One interesting finding was that all Public sector representatives brought out the importance of the economic development and profitability of the program. They all mentioned that there is a need to increase the financial benefits for the national income as well as reduce the costs. Interviewees considered these three aspects as the most important topics for the state while developing the strategy.

From the side of the economic and strategic direction, they emphasized positive contribution to the Estonian economical environment while helping e-residents to set up companies in Estonia. Therefore, adding economic value to the states, through taxation, through fees paid through working together with Estonian entrepreneurs.

The other benefit that interviewees mentioned was the market expansion. The public sector authorities constantly trying to find ways how to increase the number of established

companies. Furthermore, the focus is on customer acquisition channels and wider coverage of e-residency in different markets.

However, several other topics appeared as important topics while developing the program strategy during the interviews but not all were mentioned by all interviewees. The reputation of the advanced Estonian digital society was one of these topics in addition to the number of pick-up locations was one of the challenges that have been mentioned by interviewees while discussing the strategy development.

During the interviews, participants mentioned that the e-residency 2.0 white paper process evaluated the overall need and continuity of the program. The aim was to understand whether the e-residency is something that the state has to pursue. Is the program beneficial for the country? Moreover, the experts analyzed if there is a real benefit of keep investing in this project and its sustainability.

When it comes to the interviewees' point of view on the most important topics that they find the most important while developing the strategy, it was remarkable that they have a different vision regarding this question. Noteworthy is that their opinion seems to be influenced by their expertise area. Interviewees pointed out the following topics:

- Making Estonia more visible in the world.
- Cybersecurity and digital identity issues (especially in the context of the ongoing COVID-19 crisis, which accelerated the need for digital residency).
- Giving people a chance to have a better life.
- Risk management and risk mitigation.
- Legal compliance correspondence to the legal acts.
- Getting more e-residents with an interest to establish a company and increasing the economic impact.

One of the most remarkable answers that were the same opinion for two of the interviewees was the evaluation of the interest in the program. Interviewees find it difficult to answer what was the most important point, idea, or objective behind the strategy. For instance, PBGB was not able to relate the achieved value of the program, although EAS finds the program valuable. According to EAS, the program generates indirectly revenue by promoting the e-residency. PBGB finds to assess the risks, as it is

not possible to ask an applicant about their business activity and background. Therefore, this aspect should have received more attention in the e-residency white paper.

Additionally, interviewees found it important to identify the correct target groups, which types of e-residents, and the people who can benefit from having a company registered in Estonia. Moreover, it is important to understand the types of entrepreneurs who benefit the most from the program.

The top strategic goals mentioned in the context of the e-residency white paper 2.0 varied from one expert to another. However, the impact on the national economy is still one of the top goals. Furthermore, increasing the number of residents by speeding the growth of the e-residents by the end of the year is one of the clear targets. Increasing the convenience-resident is also one of the strategic aspects in focus. Mainly it means increasing the pickup locations, in addition to helping e-residents to understand their taxation more by developing things like a business guide or knowledge base and providing more tax-related (also in other countries).

Continuing the top strategic goal list. Making Estonia more visible, enhancing the economic side, having a secure identity on the Internet and digital identification of the applicants are some examples named by interviewees. Risk-based pre-and after control checks of the applicants as well as the after-check the most important in the PBGB view in addition to the risk mitigation regarding the check of the applicants.

During the e-residency 2.0 white paper discussions security, national security, and risk management issues in addition to finding ways to increase the number of the e-residents, were the strategic topics that received the most attention during the whole process.

It was difficult for the interviewees to identify the strategic topics that received the least attention during the discussion of the program strategy. However, the banking issue for e-residents was a complex issue since it is under the private sector control. *“I would not say it is the least, it is very important. We also understand that a lot of it is out of our control. It is also up to the private sector,”* the interviewee said.

Interviewees named the parties that were engaged in the e-residency 2.0 strategy-building process. Almost every ministry and very many private sector actors were involved. These parties are the EAS, the President's Office, Ministry of the Interior, Ministry of Economic Affairs and Communications, Ministry of Finance, Police and Border Guard Board, Inspection of Finances, Tax and Customs Board and The Chamber of Service Economy. The last organization named brings Estonian internal service providers together.

When the author asked the interviewees whether there should have been any additional parties to be engaged in the strategy-building process, they answered that they think that all related parties were engaged. However, one interviewee pointed out that civil society was missing from the discussion regarding the e-residency program. The interviewees found that there were no excessive parties in the e-residency strategy building. The last part of the interview focused on the meeting of the strategic goals. Firstly, the interviewees were asked to evaluate the achievement of the e-residency 2.0 strategical goals on a 10-point scale, where 1 means the strategical goals were not met and 10 that the strategical goals were fully met. The average of the overall assessment points for the achievement score was 5.4 points. Noteworthy that two of the interviewees answered that they cannot give a score to the achievement.

One interviewee said that they can assess the number of applications. On this basis, it is possible to say that the program marketing strategy has changed. However, the number of applications is smaller, but whether it is beneficial for the economy, or met the strategical goal it cannot be assessed. Reported results by the e-residency Council, that they met the goals they have set themselves for each year.

Although the experts could not fully evaluate the achievement of the strategic goals, they assessed the achievements from their authority and role point of view. For example, PBGB valued meeting their targets in the context of the e-residency strategy 6 out of 10. However, they emphasized that they still have room for improvement today. They do not have automation and after control solution, but they are still working on it. They added that they have already reached a good level in terms of a pre-control system of applicants.

The other interviewee could not assess the achievement of the strategic goals because the interviewee believed that these goals were not met. According to the interviewee, it is not clear the government and EAS have assessed whether these goals were met or not.

The other three expert's evaluation for the program was very optimistic, as the approximate score for the achievement score was 9 out of 10. They see more opportunities behind the program from different aspects.

The interviewees think that there are no fully unmet strategical goals. However, the goals were changing from former to the and were achieved to some extent. The most important factor that influenced the achievement of the goals was political support. In addition to that, the interviewees could not identify other specific factors.

Regarding the unmet strategical goals, one of the experts believed that all goals were achieved and covered, however, the other mentioned the taxation and bank issues still need more attention and further development.

The author also asked a question whether the e-residency 2.0 strategical goals were met from the e-residents perspective. Two of the experts could not answer to s question, as they believed that only the EAS is able that. The other answers were not clear as one of them noted that the goals have been met to a certain extent. The other interviewee mentioned that the e-residency is more popular the EU citizens. However, the product was designed in the first place mainly for the d country citizens.

Evaluation of the sufficiency of the current e-residency 2.0 strategy, three out of five interviewees found it sufficient. One could not evaluate all aspects. The other interviewee mentioned that there are still issues that need improvement. For example, the banking, taxation, and pick-up locations.

The last question focused on the elements in the e-residency program/strategy that still need improvement. All interviewees believe that there several elements that need to be improved. One interviewee brought out that there is no specific implementation plan. The other believed that the bigger the program grows; the more important comes risk management and the question of how to combine different ecosystems and different

logics of digital identities. Two of the interviewees agreed that the pick-up locations and the market expansion are the top of the elements that require further development together with banking and taxation areas.

7.2. Important findings – Private sector (entrepreneurs)

This chapter presents the research findings from the private sector perspective and brings out the expectations of the e-residents. The author analyses the data and presents the most interesting and significant findings. The selection of the interviewees is based on different regions to have a wider perspective of their expectations and barriers that they tackle. For example, interviewees represented regions as the Middle East, different parts of Europe (including UK, Ukraine) and South America. Table 2 gives an overview of the entrepreneurs and their field of activity.

Table 2. Interview participants (entrepreneurs)³²

Company name	Position	Field of performance
Go global business school	Co-founder	Education/Science/ Research
MR NOE OÜ	Co-founder	Information Technology
Starfleet Coworking OÜ	Director	Real state
DOT IT OÜ	Founder & CEO	Marketing / Advertising
Skyrocket Your Team OÜ	Co-Founder	Online team building
The Izatt Consultancy OÜ	Founder & CEO	Media/Newmedia/Creative
DCG Lab OÜ	Founder & CEO	Digital marketing

The main goal of the interviews with the e-residents was to clarify their expectations towards the program and if the program meets their expectations. This chapter provides an answer to the following sub-questions:

- In how far (and in how far not) and why is the Estonian e-residency initiative successful from the entrepreneur perspective?
- What have been the expectations of the entrepreneurs towards e-residency?

³² Company selected through the EAS company list page <https://company.e-resident.gov.ee/>.

- Have the expectations of the entrepreneurs been met? Which, why? Which, why not? (strategically, or technically: e.g., weak support and so on.)
- How did entrepreneurs benefit from e-residency? (beyond the original expectations).

For that purpose, the author prepared a semi-structured interview.³³ The author divided the interview with the public sector expertise into two parts: the warm-up part and the motivation and evaluation part. The first part was an introductory part and aimed to identify the interviewee, the company profession area, the interviewee position in the company as well as how long the interviewee has been an Estonian e-resident besides the capacity of the company.

The second section aims to clarify the expectations of the e-resident entrepreneurs towards the program. The author tries to find out how the Estonian state has met the entrepreneur's expectations and what factors affect meeting the expectations? Furthermore, the author assesses the entrepreneurs' knowledge regarding the state's strategy and its impact on their business. The author examines the level of participation of the e-resident entrepreneurs in strategy building and their interest in this process. Finally, the author collects proposals to improve the current e-residency program.

On average, the interviewees have been e-residents of Estonia for approximately 3,2 years. Four of the interviewees had been e-residents for more than 4 years. The interviewees were mostly the founders or co-founders of the company besides the different responsibilities that they perform in their company. The business area of the selected companies varied from the education and research field to the information technology sector and the digital marketing, digital consultation, and real estate services.

Most of these companies use outsourcing while performing their projects. Meaning, that in most cases they do not have employees until they have a project. They hire employees on a need basis and prefer to pay for actual working hours. However, some of these companies have a fixed number of employees. They use the same method and employ additional specialists based on the needs. This supports the idea of cost reduction and

³³ Appendix 2 – Interview questions (Private sector)

gaining profit. There was a remarkable observation that when it comes to the specialist hired on the need basis, the companies mostly outsource the expertise outside of Estonia, as it is cheaper.

The second part of the interview focused on the motivation and evaluation. It started with the question regarding the motivation that encouraged them to become Estonian e-residents. Answers of the interviewees varied. However, they all agreed that the most important motivator behind their decision to become an e-resident was the independency from the work location. In addition, interviewees named different motivators that encouraged them to join the program, such as tax residency and possibility to run the company between different countries more easily. In one case the key driver was Brexit³⁴ (Clarke, H. D., Goodwin, M. J., Goodwin, M., & Whiteley, P., 2017). When the discussion regarding the Brexit started, there was quite a lot of uncertainty about what will happen after Brexit. This uncertainty may continue long time and influences many businesses in Europe.

Interviewees found the whole e-residency package quite appealing, respective ally connection with EU. Probably there will be a new piece of business onboarded via holding a European company with an EU VAT number. It is a European bank account and European business address. It is simple and straightforward. Having a European company and legally secured infrastructure offered by Estonia, in addition to the Estonian reputation on digital initiatives on the international level, is motivating. Especially for countries with less digital security. Furthermore, interviewees found the digital environment of Estonia that eases the establishment of the companies and the transparent atmosphere attractive.

In addition to the work location independence, the accessibility and easy use of public services were the expectations that the interviewees had before applying for the e-residency. Interviewees brought out that the security of the digiID cards guaranteeing access to the services is important for running a business besides the digital signing functionality. The possibility to do things remotely in a fast and secure way. One

³⁴ <https://www.bbc.com/news/uk-politics-32810887>

interviewee added networking and the community, where e-resident entrepreneurs can market and support their business and offer their services to other companies, to the list of expectations.

When it comes to the evaluation of the program and how it supports the entrepreneurs' expectations, three out of four e-residents gave 7 points out of 10 to it. The other four interviewees evaluated the program up to 4 points out of 10. The average score in total was 7,4 points. Those interviewees, who evaluated the program more than 7 points mentioned that everything the program promised was applicable.

However, the guidelines for e-residents when they started it was great unfortunately, it seems that the state stopped this development. *"I would say an e-resident is for a starting point. But it seems that you make a baby and then you just put it the baby and, on the land, and you have to take care of the baby in terms of facilitation in terms of connecting"* said one of the interviewees. Some interviewees were critical due to the transparency laws and security that creates additional legal work and legal complexities requiring much time and money in their origin.

When the question was regarding the non-met expectations, interviewees' answers were different according to their regions. Some of them had issues regarding the tax register and taxation in general. It seems that in some cases local laws affect the salary payments from their Estonian companies.

One remarkable observation was that they are all satisfied with the provided services. However, they expected a bit more support for their business. Not all interviewees applied for this program only because of the available eID features or having an EU company. Each one of them expects some marketing solutions that help to develop their business.

They expect direct communication with the program representatives to increase their networking. Interviewees believe that the state should be closer to them, on one hand, to listen to them and understand their needs and on the other hand enhance the efficiency of the program.

There was an interesting answer from one of the interviewees: *“I don't have any kind of expectation. I don't get a lot of expectations I didn't read about that. So, I read first about the e-residency here and sees the benefits from it and try to start from this point. So, there isn't there is no hidden expectation”*. This answer explains the gap between the e-residents and the state vision. Since not all e-residents have this simple expectation towards the program. The author was asked from interviewees to whom they recommend becoming an e-resident. Interviewees recommend the status of an e-resident to the freelancers and self-employees as well as small businesses. Especially if the partners are from different countries, the e-residency program will be suitable and beneficial for them.

In addition, the interviewees believe that the e-residency program is beneficial for entrepreneurs, especially when the company has grown and expanded its work on an international scale. However, the support for the entrepreneurs is still the point that needs improvement from their point of view.

There was a remarkable observation concerning the Estonian e-residency 2.0 initiative or Estonian e-residency strategy. Only two out of seven interviewees knew about it. Those who have read the e-residency 2.0 white paper initiative mentioned that this strategy was just reflecting the interests of Estonia, not about the business. Although it shows the government plans regarding the program it would be good to take into account the expectations of the end-users of the program – e-residents.

One of the elements in the e-residency program/strategy that still needs improvement to meet the entrepreneur's expectations was the cross-border salary payments. In addition, the program coordinators should pay more attention to the legal compatibility between countries. Important to have more connection with the program delegators. The growth strategy is one of the elements that the interviewees believe that it needs improvement by more financial solution and marketing support as well as the networking support within the e-residency community.

Noteworthy is the aspect when asked from the interviewees if and how should the state involve e-residents (entrepreneurs) in the development of the strategic goals of the e-residency program, all interviewees answered “yes” and gave **Estonia-residentsts**

International Chamber Association” EERICA”³⁵ as an example. This association has elected d board discussing with e-residents all topics regarding the program and e-residency status. Furthermore, enhances their networking. Interviewees want to connect more to the program through h direct connection and shape their future as e-residents. Interviewees are interested in participation when it comes to the strategy of the community to where they belong.

³⁵ <https://eerica.ee/>

8. Discussion

This chapter analyses and evaluates the research results. Based on the documentary sources and in-depth interviews with the public sector representatives and the e-resident entrepreneurs the author gives suggestions and recommendations for the future development of the program. Moreover, the author proposes strategy-building model for the e-residency program that ensures continuous and purposeful development of the program strategic directions. Finally, the author provides brief insight to the future research perspective and wider applicability of this research.

8.1.Recommendationtion

The author identified the gap between the e-residents and the state vision. Both parties have slightly different expectations. As the initial expectation for the e-residents was just to create a company in the EU. However, not all e-residents have this simple expectation from the program since they are expecting further support to their business. Data analysis presents this fact according to the e-residents' interviews.

To evaluate the strategic goals, it is important to look at the most important strategic directions from both perspectives. The table below summarizes the main goals of the e-residency latest paper 2.0 as the latest document reflecting the public sector strategic goals of e-residency.

Table 3. The main goals of the e-residency white paper 2.0³⁶³⁷

Secure	Beneficial	Convenience
Improved information exchange	More opportunities to connect and grow companies.	Advances in technology
Better use of data.	More opportunities to grow companies	More user-friendly.
Greater oversight and control.	More opportunities to share Estonian culture.	

Based on the entrepreneurs' feedback the author identified positive aspects of the program and factors that sThe the following improvement. fill the following presents the summary of the factors affecting the achievement of the strategic goals.

Table 4. Feedback regarding the overall achieved goals from entrepreneurs' point of view.

Positive comments	Expectations
<ul style="list-style-type: none"> • Establishing Company. • Business location was independent. • Transparent. • Time saver. • Clear process. 	<ul style="list-style-type: none"> • Tax confliction and the complying with their regions' tax regulations. • Tax advisors. • Direct connection. • Being engaged in the discussion for the future of the program. • Support the community through the business advisors. • Platform interface and available languages.

The research results show that e-residents consider it positive that they can establish their business and obtain the business independent location, besides they can save time and work in a transparent environment. However, they are facing some challenges that may affect their future business plan in their Estonian companies.

³⁶ <https://s3.eu-central-1.amazonaws.com/ereswhitepaper/e-Residency+2.0+white+paper+English.pdf>

³⁷ <https://e-estonia.com/e-residency-2-0-enhanced-efficiency-security-and-convenience/>

After a comparison of public and private sectors' strategic goals and expectations, it is possible to say that there are no contradictory aspects. However, both sectors accent different topics. For example, communication is a common strategical goal, but technological development is more on the public sector focus. The author identified three main areas that are important for the e-residents and public sector should consider while setting strategic goals: **communication**, **support**, and **engagement**.

Communication

The results of interviews with the e-residents show that they have some challenges with the networking and marketing solutions because of the lack of support from the program to them. There is not many events or direct connection to them to enhance the communication element which impacted to the growth of their business. E-residents would like to benefit from the existing e-residency network from the communication perspective. There are existing social media channels where it is possible to communicate (e.g., Facebook groups, etc.). However, the state should more systematic approach to the different available communication channels.

Support

The platform and the lack of advisors were marked as a challenge that the e-residents most commonly tackle. E-residents expect support from the legal and taxation point of view. Moreover, the government onboarding platform needs improvement with better interfaces and different available languages. Furthermore, the bookkeeping system has the same issue with the interface and the language's menu. Based on this information the public sector should focus on the improvement of different support programs and services. It does not mean that the state should offer all this support by itself or without fees. It is more about developing the enabler services infrastructure that supports the businesses of the e-residents.

Engagement

Engagement was one of the most mentioned topics during the interviews. One of the e-residency 2.0 initiative goals was to offer more opportunities to share the Estonian culture, which is one of the e-resident goals. However, the program authority does not invite them to participate while setting the program's strategic goals. They were not involved in the

discussions regarding the e-residency strategy and the future development of the program. The author is aware that EAS has launched different questionnaires and surveys to map the e-residents view. However, the responses from the interviews show that there is still enough room for improvement. For example, considering how to engage e-residents through the EERICA to the strategy shaping process.

8.2e-Residency strategy building model

Based on the public sector interviews it was clear that there is a lack of common understanding of how the strategic goals should develop. There was no clear vision of the method to approach the strategy building. It was clear that each authority has its own goal or goals, which affect the program's strategic goal(s) formulation. Security is the key driver that was visible during the discussion of the e-residency strategy.

The program was new in the beginning and the strategy has developed together with the program. Currently, the e-residency program has achieved a level of maturity that needs a revised approach to the strategy. The fact that most of the e-residents interviewed were not aware of the e-residency 2.0 white paper initiative illustrates that there is a need for improvement in terms of end-user engagement.

It is not difficult to develop a strategy. However, it is challenging because it pushes individuals and organisations to make specific decisions about their future, which most businesses do not do (Playing to Win: How Strategy Works - A.G. Lafley, Roger L. Martin - Google Books, 2013). Therefore, the program should have the same strategic goal that identified for all engaged parties, with particular approaches that should be followed. This approach to the strategy should be clear and considering stakeholders' best interests. In other terms, the state achieves its strategic goals as far and as successfully as the state can meet the e-residents.

Based on the research results and considering the best practices from the change management theory the author proposes a model for the e-residency strategy building to ensure the continuous development of the program. It is important to mention that this proposal does not show the other existing strategies in the country. Implementation of the

model presumes that the strategy building team already considers other more general strategy documents available in the country. The following figure illustrates the steps in the strategy-building process.

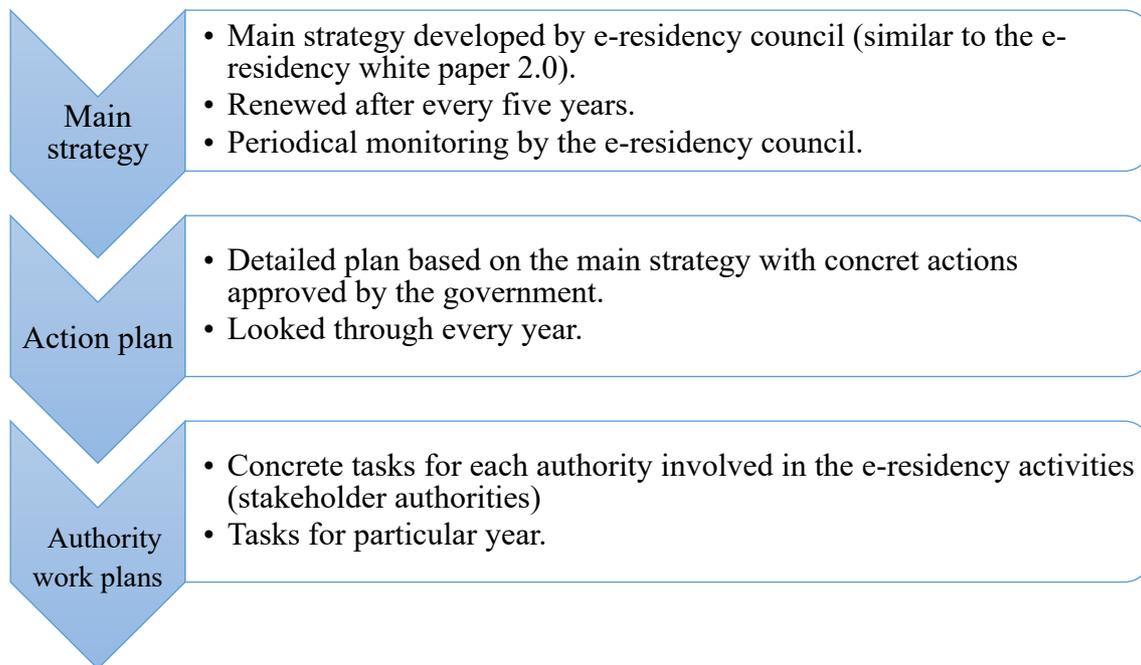


Figure 17. E-residency strategy building model.

The author admits that there are elements from the previously displayed processes already in the existing scheme. However, these activities and initiatives are one-time actions and do not contribute to the continuity of the program. The author sees the strategy as a state conscious flow of activities. Therefore, the e-residency council that engages the main stakeholders should drive the process and involve all necessary parties (including e-residents) in the strategy-building process. The view should cover at least a five-year plan. A more detailed plan of activities should be in the action plan approved by the government level to have legislative power. Finally, particular tasks for each authority should appear in their internal yearly work plans.

8.3 Wider applicability and future research

This research identified the areas that are important for e-resident entrepreneurs. The author considers it as broader research to be followed more area-specific focus. As mentioned previously, the state achieves its strategic goals as far and as successfully as

the state can meet the e-residents. Therefore, it is important to continue in-depth research on the three main fields identified in this research: communication, support and engagement. More precisely to improve the communication between the state and e-residents (communication channel analysis). How to build supportive infrastructure for e-residents (different areas, methods, etc.) and how to engage e-residents more in the development of the program's strategic goals.

9 Summary

Estonia, as one of the leading e-countries, has achieved a point of convergence in terms of e-governance, and it is critical to think creatively on the next moves to add creativity to the current ecosystem while maintaining a competitive role on the global stage.

Therefore, on 1 December 2014, Estonia became the first state that offered its electronic identity to non-citizens through the e-residency program. The e-residency program faced some criticism. However, the program still has many potential and success opportunities. The first vision of the program was followed four years later by the e-residency 2.0 white paper that aimed to develop the program by enhancing some specific factors. It was clear that the program has reached the maturity level where it is necessary to revise the followed approach of the strategy.

The author assesses whether the strategic objectives were met using the e-residency white paper 2.0, which is the only publicly available source that contains strategic goals for the e-residency program. This research aims to find the answer to the research main question -in how far (and in how far not) and why is the Estonian e-residency initiative successful from the state and the entrepreneur perspective. These two perspectives had the most influence on the e-residency program implementation directions. Research results provided valuable feedback to re-design certain elements of the program.

Based on the findings of the research and using the best practice sites from change management theory, the author suggests a model for developing the e-residency strategy building approach to ensure the continuous growth of the program.

The findings of the study indicate that e-residents are positive about their ability to start a company and run their businesses remotely, as well as the ability to save time and operate in a transparent atmosphere. They are, however, confronted with certain obstacles that could influence their potential market plans in Estonian businesses. The author gathered the best practices, made recommendations for the future process, and mapped further possible research topics. It is important to note that there are no conflicting factors after comparing the policy priorities and aspirations of the other two sectors. Both sectors, however, clearly emphasize and focus on different issues. Based on the research results, communication, for example, is a general strategic aim, but technical development is mostly a public-sector concern.

According to the author, communication, support, and participation are three key areas that e-residents and the public sector should address when setting strategic targets. Strategy development is a collaborative process that needs the engagement of all stakeholders. Meaning that the state achieves its strategic goals as far and as successfully as the state can meet the e-residents' goals.

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Appendix 2 – Interview questions (public sector)

The interviewee is: public sector representative

Date and time of the interview:

Location: Online interview (Skye/Teams)

Additional information: interviewee is informed about recording the interview in advance and the aim and purpose of the interview are explained to the interviewee.

Introduction:

Q.1. Please describe your current position and relation to the Estonian e-residency program? (specifically, years of experience in the e-residency area and tasks performed)

Q.2. Please describe your relationship to the Estonian e-residency program strategy-building process?

Q.2.1 What was your role in this process?

Part I (Development of strategical goals)

Q.3. Which subject(s) or area(s) in the context of the E-Residency 2.0 was/were in your opinion:

Q.3.1 the most important for the state while developing the strategy? (It is allowed to name more than one topic or field);

Q.3.2 the most important for you as an expert while developing the strategy? (It is allowed to name more than one topic or field).

Q.4. Please name the top 3 strategic goals in the context of the E-Residency 2.0.

Q.5. Please name the strategic topics that received the most attention during the discussion.

Q.5.1 Were they included in the E-Residency 2.0 strategy?

Q.6. Please name the strategic topics that received the least attention during the discussion.

Q.6.1 Were they included in the E-Residency 2.0 strategy?

Q.7. Were there topics you consider important but not reached to the E-Residency 2.0 strategy?

Q.8. Please name the parties who were engaged in the E-Residency 2.0 strategy-building process.

Q.8.1 What do you think if there should have been any additional parties to be engaged in the strategy-building process? Please specify.

Q.8.2 What do you think if there were any excessive parties in the strategy building process? Please specify.

Part II (Meeting the strategical goals)

Q.9. How would you assess the achievement of the e-residency 2.0 strategical goals on a 10-point scale, where 1 means that the strategical goals were not met and 10 that the strategical goals were fully met? Please explain your opinion.

Q.10. Please name the e-residency 2.0 strategic goals that were fully met.

Q.10.1 Please specify, what factors affected meeting the goals?

Q.11. Please name the e-residency 2.0 strategic goals that were not met.

Q.11.1 Please specify, what factors affected not meeting the goals? Why the goals were not met?

Q.12. What do you think if the e-residency 2.0 strategical goals were met from the e-resident's perspective?

Q.13. How would you evaluate the sufficiency of the current E-Residency 2.0 strategy to ensure the development of the e-Residency program?

Q.14. What would be the elements in the e-residency program/strategy that still need to be improved? and why do you think so?

Q.15. Is there anything you would like to add?

Appendix 3 – Interview questions (Private sector-entrepreneurs)

The interviewee is: private sector representative

Date and time of the interview:

Location: Online interview (Skye/Teams)

Additional information: interviewee is informed about recording the interview in advance and the aim and purpose of the interview are explained to the interviewee.

Interview questions:

Warm-up questions and introduction

Q.1. Please briefly describe your area of business and your current position and responsibilities in the company?

Q.2. How long have you been a holder of an e-residency card?

Q.3. How many employees are currently working in your company?

Motivation and evaluation

Q.4. What was the main motivation(s) (reasons) behind the decision of becoming an e-resident?

Q.5. What expectations did/do you had/have towards the e-residency program?

Q.6. Please assess how the e-residency program has met your expectations on a 10-point scale, where 1 means that the e-residency program did not meet the expectations and 10 means that the e-residency program fully met your expectations. Please specify your answer.

Q.7. Please name the expectations towards the e-residency program that were fully met. What factors affected meeting the expectations?

Q.8. Please name the expectations towards the e-residency program that were not met. What factors affected not meeting the expectations?

Q.9. Please name the opportunities that the e-residency program offered in addition to your initial expectations.

Q.10. To whom would you recommend becoming an e-resident? Who benefits in your opinion from the e-residency program the most?

Q.11. What do you think, is the e-residency program beneficial for the entrepreneurs?

Q.12. What do you know about the Estonian e-Residency 2.0 initiative or Estonian e-residency strategy?

Q.13. What would be the elements in the e-residency program/strategy that still need to be improved to meet the entrepreneur's expectations? and why do you think so?

Q.14. If and how should the state involve e-residents (entrepreneurs) in the development of the strategic goals of the e-residency program?

Q.15. Is there anything you would like to add?