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From Plan to Reality: Applications of the European eGovernment Action Plan 2016-2020 on the National and Institutional Level

- a Comparison between Germany, the United Kingdom and Estonia

MASTER THESIS

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Abstract

Since the development of eGovernment systems is gaining worldwide momentum, the European Union is constantly increasing its efforts to induce the development of eGovernment systems in its member states. The currently running strategy is the 'eGovernment Action Plan 2016-2020', which understands itself as a catalyst for developments in the member states.

Despite these ongoing efforts by the European Union regarding eGovernment, studies are repeatedly revealing that the quality and acceptance by the citizens of digital public services are varying heavily within the EU. Being based on the same political guidelines provided by the EU, the national strategies implemented the core principles to different degrees. These different implementation rates, analyzed for Germany, the United Kingdom and Estonia, supplement the holistic analysis of the eGovernment policies, applications and usage in each member state. This gets proven by the connection of this indicator with related studies in the field of eGovernment applications and usage within the European Union.

The aim of this thesis is, on the one hand, to quantify differences in the implementation of the 'eGovernment Action Plan 2016-2020' into national policies in Germany, the UK and Estonia and, on the other hand, establish this indicator as a valuable asset for evaluating and monitoring the eGovernment efforts by the EU member states.

Contents

Chapter 1

Introduction

On the 29th of September 2017 the heads of state and government of the members of the European Union came together in Estonia for the 'Tallinn Digital Summit'. They discussed the digitalization of the union and thereby the establishment of the EU as a leading territory for economical development and digital innovation. The summit was held by Estonia, that was making digitalization the most prominent policy field of their presidency of the European Council.

Afterwards, the Prime Minister of Estonia, Jüri Ratas, published conclusions from the digital summit starting with the following statement: "We should bring government and the public sector into the digital age to improve public services for citizens and businesses, contain costs and promote innovation" (EU2017.EE, 2017).

This conclusion positions the topic of eGovernment and its development as the number one priority in the policy field of digitalization within the European Union.

The current political strategy by the EU that aims to let eGovernment in the EU thrive is the 'eGovernment Action Plan 2016-2020'. It is designed as a catalyst to coordinate public sector modernization efforts and resources in the field of eGovernment. It thereby acts as a guidance for EU member states, it wants to evoke developments on national and local levels and it wants to standardize the existing systems.

Nevertheless the research of the success of this efforts is not comprehensive: "A specific focus on Europe is still in urgent need, in the face of the extensive efforts paid by EU institutions to promote e-services development and their benchmarking" (Seri, Bianchi, and Matteucci, 2014, p. 496).

This means that the EU defines eGovernment as the top-priority in the field of digitalization and provides a plan with guidelines for the member states. Still, the realization and conversion of this plan lays in the hands of the national governments and administrations. The evaluation and success of this plan though is not completely clear. As in many other policy fields this constellation between the EU and its members causes systemic problems and fragmented developments.

1.1 Problem Definition

The EU carries out a benchmark study each year to monitor the developments based on its action plan within the member states. Furthermore, studies about the users of public online services are published frequently. All these sources show that the extent and quality of eGovernment systems vary heavily among EU member states:

"Both practitioners and researchers in the field claim that there is a very large variation in the extent to which e-services are implemented in the public sector, and in the quality of these services" (Lindgren and Melin, 2017, p. 2).

Since the 'eGovernment Action Plan 2016-2020' is not the first political strategy regarding eGovernment by the EU, the question arises, why the eGovernment systems in the member states vary so much although they are based on the same plan. Why do these systems differ so much, not only with regard to the extent of their services but also regarding their acceptance and use by citizens?

As the action plan by the EU only acts as a catalyst for developments in each member state, one possible explanation of these differences is that the European strategy is differently applied in national eGovernment strategies and policies. This would attach the explanation of the different system designs and usage rates on the very first property of political acting – the plan.

1.2   Research Question and Objectives

To study whether differences in the applications of the 'eGovernment Action Plan 2016-2020' can explain the differences in eGovernment systems and services among the EU member states, the following the following research question is formulated:

> *Are there differences in the application of the 'eGovernment Action Plan 2016-2020' by the European Commission into national strategies and can they function as an explanation of differences in the use of digital services in EU member states by the public?*

In order to answer this question systematically I define the following objectives:

1. Analyze the 'eGovernment Action Plan 2016-2020' by the European Union and provide an overview of its emergence.

2. Define and analyze the national strategies regarding eGovernment in Germany, the UK and Estonia.

3. Qualitatively compare the 'eGovernment Action Plan 2016-2020' with the national eGovernment strategies and define the extent of its implementation.

4. Connect the findings with quantitative results and test its coherence vice versa.

1.3   Method

In this thesis, I use the comparative method to assess the degree of implementation of the EU strategy into the national strategies. It can be used to detect relationships between concepts where all or most other variables are constant (Lijphart, 1971). It is particularly suitable when there is only a small number of cases to compare and no experimental approach possible.

The design used is the 'Most Similar Systems Design (MSSD)'. This comparative strategy aims to compare very similar cases that only differ in dependent variables. In a basic sense, MSSD starts out with similar variables between subjects and tries to figure out why the outcome is different between the subjects (Collier, 1993).

To provide a general comparability and determine numerical implementation rates for the national states, the core content of the 'eGovernment Action Plan 2016-2020' is factorized and implementation indicators are determinated based on six implementation dimensions. This will be explained in detail in Subsection 5.2.1.

In an ideal setting, one would compare the national implementations of all EU member states. Due to the limited resources of this thesis, however, I restrict the comparison to a subsample of three national strategies. Doing so, this thesis provides an explorative study of the national strategies of Germany, the UK and Estonia and serves as a starting point for future research. Possible extensions of the analyses done in this study are discussed in Chapter 6.

1.4 Scope

This thesis combines approaches from web sciences, political sciences as well as social sciences. In a broader context, it deals with web governance and digital policy making with a focus on politics of the European Union. Therefore, the field of this thesis can be described as comparative digital policy studies.

The chapters of this thesis contain the following content:

A general theoretical overview over the functioning of the European Union and a definition of the term 'eGovernment' as used in this thesis are provided in Chapter 2. After that, the evolution of eGovernment policies in the EU and a detailed analysis of the 'eGovernment Action Plan 2016-2020' are given in Chapter 3. Three different national strategies (Germany, the United Kingdom, and Estonia) are discussed and analyzed in Chapter 4. A comparative analysis of these three national strategies is the main part of Chapter 5. This chapter also includes a detailed explanation of the method used and the factorization of the European action plan. In Chapter 6 possible ways of validating the research method as well as possible further research opportunities are given. The connection to quantitative studies is made in Chapter 7, while Chapter 8 sums up the findings of this master thesis before providing an outlook on how this field of research may be further explored in the future.

Chapter 2

Theoretical Background

To properly investigate the applications of the 'eGovernment Action Plan 2016-2020' by the member states of the European Union it is vital to understand the general legislative procedures of the EU. Therefore, a short introduction into these processes is given in this section. Furthermore, the most recent scientific debates about the term 'eGovernment', including digital public services, are examined and summarized.

2.1   The European Union

The European Union (EU) acts as the most important driver of change in contemporary government and policy-making in Europe and even beyond European borders. Decisions made within the EU affect especially the EU's members states, but also otherwise connected countries (Wallace, Pollack, and Young, 2014). Since these policy-making processes are of high interest for this thesis, they are described in detail in the following section.

To understand these processes, it is also vital to introduce the most important EU institutions that are involved in the development and application of eGovernment strategies and policies.

2.1.1   Institutions

The EU, officially founded with the 'Roman Treaties' in 1957, consists of 28 member states with one member in the process to drop out (United Kingdom) and several countries wanting to become a member (Council of Europe, 2017). The most important institutions in the legislative and policy-making process are the following:

- **European Parliament**: The parliament represents the citizens of the Union. It consists of 751 delegates that are directly elected every five years. Together with the Council it decides about laws proposed by the European Commission (Council of Europe, 2017).

- **European Council**: The European Council consists of the heads of state and government of the 28 member states, the president of the Council and the president of the Commission. It debates and establishes the general political guidelines and priorities of the Union (Nugent, 2017).

- **Council of the European Union**: This institution, often called 'The Council', consists of the ministers of the member states. Depending on the topic this

means all ministers for finance, health etc. The Council debates and enacts EU-acts and passes, together with the Parliament, the EU budget (Council of Europe, 2017).

- **The European Commission (EC)**: The EC includes 28 individual members, one from every member state. It acts as the politically independent executive organ of the EU. Its members represent the interests of the EU and not of the member states. The Commission proposes laws to the Parliament and the Council and executes their decisions. In addition, it is responsible for the annual budget of the Union, it negotiates international treaties and it ensures the correct implementation of EU law in the member states (Council of Europe, 2017).

Other important institutions include the European Court of Justice or the European Central Bank (Pollak and Slominski, 2012). Since they are not largely involved in the processes regarding digitalization, they are not listed in detail.

To understand the processes of policy-making and thereby the process leading to the 'eGovernment Action Plan 2016-2020', the next chapter covers the procedures of policy-making within the EU.

2.1.2 Policy-Making

The European Union and its institutions have, since its foundation, gathered more and more power. Started with a sole focus on economic issues, it is nowadays and especially since the 'Lisbon Treaty' a relevant policy designer in nearly every political field. To review this power and its practical execution it is helpful to define public policy-making as such.

In general, public policy-making can be described as "a set of interrelated decisions taken by a political actor or group of actors concerning the selection of goals and the means of achieving them within a specified situation where those decisions should, in principle, be within the power of those actors to achieve" (Jenkins, 1978, p. 15). With regards to the EU, this means that the EU makes decisions in the fields where it has the power to achieve them.

Mainly because of the history of the EU integration process, the EU has no uniform decision making process. Rather, there are decisions made in different domains with different scope and different fundamentalities (Arzheimer, 2014). They can affect comparably irrelevant issues like the infamous cucumber bend regulation all the way to the signing of historic treaties (Nugent, 2017).

Nevertheless, all policy-making processes follow a typical process starting with the preparation – including informal talks and proposals – leading from the legally binding decision-making to the implementation and monitoring of the policy. Furthermore, all these policies can be associated with different kinds of political arenas like regulative, expenditure, (re-)distributive or macro-economic stabilization policies (Arzheimer, 2014).

Keeping all these various differences in mind five general methods of policy-making can be identified within the EU according to Arzheimer (2014):

- **Community Method**: This method describes a supranational approach that can be seen as the most common method. It describes that the Commission

has the role of proposing laws and policies. The legislative decisions about these proposals are then made within the 'Council of Ministers' – representing the member states – and the Parliament – representing the citizens (Pollak and Slominski, 2012). This method is shown in Figure 2.1.

How EU bodies work together

European Council

Heads of State or government
from each EU country

(e.g. Prime Ministers or their equivalent)

Sets the EU's policy agenda

European Commission

28 Commissioners
one from each EU country

Scrutinises

Proposes legislation and Budget

Input, feedback
and lobbying
on legislation
from,e.g.,

- public
  consultations

- citizens, civil
  society

- experts,
  interest groups

- political
  negotiations

- parliamentary
  hearings

European Parliament

MEPS elected
directly by citizens

EU Council

Ministers from each
EU country

Jointly decide legislation and Budget

FIGURE 2.1: How EU bodies work together (Think Tank for Action
on Social Change, 2018)

- **EU Regulatory Mode**: In this method, the Commission acts as the designer of the policy while the Council only functions as a forum. Furthermore, stakeholders are involved while the role of the Parliament is relatively weak. It is the strongest form of regulation by the EU.

- **EU Distributional Mode**: Here, the Commission starts programs or action plans that are distributed to the member states. The members of Parliament and other EU institutions act as pressure groups to assure the execution of these programs.

- **Policy Co-ordination**: This method is mostly used for broader, often long-term policy strategies like the 'Lisbon Strategy'. These strategies are initiated

by the Commission and prepared by experts. These experts can be parliament members, researchers or other stakeholders.

- **Trans-/Intergovernmentalism**: This method describes the legislative power of the European Council and the 'Council of Ministers'. The Commission is only involved through its participation in the Council. An example for this coordinative approach of the member states is the 'Schengen Treaty'.

All these processes have in common that the shaping of policies depends on additional factors like lobbying and mostly starts before the official procedures.

For the implementation of policies the EU uses two different legal instruments. Directives describe aims that are binding for the member states yet with no direct effects on national laws. Regulations on the other hand are immediately applicable in all member states and can even supersede national regulations. Both measures, but especially directives, are highly dependent on actors in the member states since the Union itself has not enough resources nor the power to directly act in member states (Arzheimer, 2014). Hence, the Commission can only monitor the implementations of its policies on the national level.

In general, it can be said that the policy-making procedures of the EU involve a large number of actors of different types while, at the same time, influencing different types of subsidiarity. Due to the varying scope of decisions, different kinds of policy-making methods are used, having different kinds of formality (Wallace, Pollack, and Young, 2014).

The 'eGovernment Action Plan 2016-2020' can, due to these classifications, be described as a policy based on the distributional method since the execution lies solely in the power of the member states with the Union providing supporting measures and monitoring.

2.2   eGovernment

Since this thesis covers the topic of eGovernment, it is necessary to define what exactly the term 'eGovernment' means and what arenas are covered within it.

In general, eGovernment is the short form of 'Electronic Government' which "stands for using information and communication technologies based on electronic media to run governmental and administrative processes. In e-government, public services and administrative matters are digitised and made available online" (Commission of Experts for Research and Innovation, 2016, p. 3).

Nevertheless, in recent years several more detailed definitions came up. While the early ones focus on the use of digital technology to achieve greater efficiency in administrations, the more recent ones also focus on the gains of eGovernment to make governments more responsible, transparent and effective (Soledad, 2018). Therefore, a more sufficient proposal is to define eGovernment as "a system for the management of public services that, based on Information and Communication Technologies (ICTs), aims to improve the quality of the services provided by the Government to its stakeholders (citizens, companies, employees, other governments, etc.), increase its transparency, make improvements to its operation and achieve more efficient management in the different environments in which it operates" (Soledad, 2018, p. 2).

For about 20 years the implementation of eGovernment systems within public administrations has become a key objective in political agendas and governmental strategic programs around the world. The achievements have "also enabled greater information accessibility and transparency, improved public service delivery, and produced greater interaction and citizens' participation in public administration" (Muñoz et al., 2017, p. 1).

In practice, that means that, for example, people no longer have to travel to public offices, saving citizens, companies and public authorities a lot of time. Other benefits include the option for, e.g., citizens, to track the use of to track the use of their personal data and applications via the internet leading to a much higher transparency of public data procedures. Additionally, eGovernment "offers citizens enhanced participation in political consensus-building and decision-making processes through a direct exchange of information. This can include the submission and processing of suggestions, complaints and petitions, as well as topic-related online discussions, opinion polls and the use of innovative public services such as public hearings in real time" (Commission of Experts for Research and Innovation, 2016, p. 4). Due to the digitalization of public administrations and the concomitant generation of usable data, new fields of open data scenarios emerge. New innovative businesses or research institutes can use this open government data to develop new services or products (Commission of Experts for Research and Innovation, 2016).

As a result, well designed eGovernment systems can increase the attractiveness of the European Union for businesses and citizens and also become an enabler in itself by heavily influencing the process of social transformation (Cano Carrillo, Jimenez-Gomez, and Falcone, 2017).

Research regarding eGovernment is very prolific and complex and requires a multidisciplinary approach leading from the electronic-digital to the political-social field (Cano Carrillo, Jimenez-Gomez, and Falcone, 2017). Therefore, scientific literature has for example focused on the diffusion of e-services, the process of structural change and innovation through eGovernment systems or the increasing role of knowledge as a fundamental driver of growth (Arduini and Zanfei, 2014).

All in all, it can be said that eGovernment systems are most likely to affect every citizen in the EU and worldwide more and more in the near future while the political shaping of the further development becomes a key factor in every political agenda. How the EU reacted and reacts to these developments will be discussed in the next chapter.

Chapter 3

Political Development

Since the 'eGovernment Action Plan 2016-2020' is not the first policy on the European level aiming to enhance eGovernment processes on the EU-level as well as in the member states, it is helpful to take a closer look on the evaluation of European digitalization policies. It becomes clear that the current action plan is the most recent step in a series of plans and processes.

After that, the plan itself is analyzed in detail and the most recent evaluations and developments of EU digitalization is taken into account.

3.1 A Look Back

The importance, extent and repercussions of the digitalization first showed effects on the European policy level in the year 2000. At the meeting of the European Council in Lisbon in March 2000 it was decided that the possibilities of the IT economy and therefore the internet should lead the way for developing the EU into the strongest economy in the world.

Just three months later, in June 2000, the heads of state and government accepted the 'eEurope 2002' action plan, which was designed and proposed by the European Commission.

3.1.1 eEurope 2002

The core of the 'eEurope 2002' action plan was to connect every citizen, every household, every business and every public institution within the Union to the internet (European Commission, 2000). For the first time, the heads of state and government agreed to the observance of defined time frames for the implementation of measures to achieve the goals defined in the action plan.

Therefore, the objectives and measures stated in the 'eEurope 2002' plan led to tangible effects on national policy strategies.

3.1.2 eEurope 2005

Already two years later, in June 2002, on the Seville European Council meeting the follow-up strategy 'eEurope 2005' was adopted (European Commission, 2002). The

main objectives of this action plan were to put the increased internet connectivity across Europe into economic and social benefit.

Also included was a part dedicated to the topic of eGovernment. Stated goals of this part were, for example, "providing broadband connections for all public authorities by 2005" or "interactive public services which are accessible to everyone via broadband networks and multi-platform access (telephone, television, PC, etc.) by the end of 2004" (European Commission, 2002).

After these plans, where eGovernment played only a minor role, the 'i2010 - A European Information Society for growth and employment' strategy was implemented. It built upon 'eEurope 2005' and was part of the major 'Lisbon-Strategy' of the European Union. While focusing on the connection of the telecommunications and internet service provider industry with the media industry, it also consisted of plans for eGovernment.

3.1.3   i2010 eGovernment Action Plan

Part of the i2010 was the 'i2010 eGovernment Action Plan' which acted as a roadmap for initiatives in the further development of eGovernment procedures in Europe. It focused on setting "clear expectations for widespread, measurable benefits from eGovernment in 2010" (European Commission, 2006) as well as the fighting of the digital divide. Besides, goals for interoperability and eService pilot phases were stated as well.

3.1.4   eGovernment Action Plan 2011-2015

In November 2009, the ministers responsible for eGovernment policy of the European Union member states, the then candidate countries and the European Free Trade Area (EFTA) countries asked the European Commission to propose a new eGovernment action plan for the time frame 2011-2015. In their 'Malmö Declaration', they also asked the Commission to propose procedures for the governance of the new action plan (European Commission, 2009).

The European Commission then published the final 'eGovernment Action Plan 2011-2015' in December 2010 (European Commission, 2010). It comprised four major political priorities, namely the empowerment of citizens and businesses in using provided services, the reinforcement of mobility of data in the European single market, the pursuit of efficiency and effectiveness for its actions and the creation of necessary technological key enablers and pre-conditions to "make things happen". Additionally, the involvement of stakeholders in public policy processes regarding eGovernment should have been strengthened. These objectives were strictly in line with the 'Malmö Declaration'.

This action plan was then integrated in the 'Europe 2020' strategy, which was the successor of the 'Lisbon-Strategy'. This strategy consisted of seven major flagship initiatives. The plan for eGovernment became part of one of these seven flagships – 'The Digital Agenda for Europe – Driving European growth digitally', which was the successor of the i2010 strategy (European Commission, 2014a).

In 2016, after the evaluation of the action plan until then, the following eGovernment action plan was proposed.

3.2 The eGovernment Action Plan 2016-2020

The new eGovernment action plan was intended to become an integral part of the Digital Single Market (DSM) strategy, which was announced as part of the Digital Agenda for Europe in May 2015 (European Commission, 2018a). The process leading to the new action plan started in early 2015, too.

3.2.1 Creation Process

At the start of its creation process, in the second quarter of 2015, the European Commission developed a timeline describing the different phases of the creation and communication of the new action plan (Figure 3.1).

FIGURE 3.1: New eGovernment Action Plan: timeline (Novaretti, 2015)

It included the setting of the strategic framework. In comparison to the former processes, the Commission announced the start of a public consultation regarding the new eGovernment action plan and asked citizens and businesses within the EU to participate (European Commission, 2015a). The intention was to identify further initiatives needed to modernize public administrations, achieve cross-border interoperability and facilitate easy interaction with citizens. It ran from October 2015 until January 2016. Additionally, different workshops with EU representatives as well as a multi-stakeholder forums should become part of the process.

After the development of the timeline, the official roadmap to the new action plan was published by the Commission (European Commission, 2015b). This roadmap contained of the most relevant sources of feedback regarding the former action plan and laid out possible options for future proceedings in an option mapping approach.

The first option reported was to refuse another eGovernment action plan even though it was already mentioned in the DSM and simply rely on the measures stated in the DSM strategy. Option number two was to generate an action plan that would be based on current findings on eGovernment in the EU, but would be closed for additions afterwards. The third option was identical to the former, just with the possibility for adjustments and additions at a later stage.

Based on the insights of the different working stages and feedback layers, the third option – the creation of a new action plan with the possibility for later adjustments – became the path to be followed.

3.2.2 Relevant Feedback Sources

In the following process, the different feedback and consultation processes provided the Commission with valuable insights on the expected and required strategic approaches and on the content of the new eGovernment Action Plan.

3.2.2.1 Mid-term Review

The first important input for designing the new plan was the mid-term review of the former eGovernment Action Plan (European Commission, 2014b). It recommended for the new action plan to move away from a five-year static approach to a more dynamic, flexible and iterative action plan as well as to focus on a number of priority areas such as open data, collaborative services, interoperability, the re-use of public sector information and the once-only principle.

3.2.2.2 Public Consultation

Another crucial input source was the public consultation, that revealed valuable insights. The consultation was launched on the 30th of October 2015 and ran until the 22nd of January 2016. It covered the following topics related to the development of eGovernment services in the EU (European Commission, 2016d):

- Lessons learned for the current Action Plan
- Factors hampering the use of public services
- Improving eGovernment services
- Mobility and cross-border public services in the EU
- Modernizing eGovernment services in the EU
- The role of the European Commission
- Citizen involvement
- Policy principles

All in all 365 participations were counted. Additionally, twelve position papers were handed in by government representatives and organizations. The most important outcomes can be summarized as follows: Most of the citizens agreed that giving users borderless access to public services online is important. Partially, because

most of the participants had to get in contact with public institutions in another EU country at least once. They also considered that online access to public services should be inclusive and accessible. Furthermore, the respondents thought that an eGovernment approach should reach to all levels of government (regional, national, EU-level). Citizens and businesses stated that having to submit the same data more than once represents an obstacle to their further use of online public services, and, therefore, support the application of the 'once only' principle. More than 80 % of the respondents voted for the following principles to be applied to eGovernment policies and services in the EU:

- privacy by default

- digital by default

- cross-border by default

- open by default

- online end-to-end services

- inclusive by default

- transparency

3.2.2.3 Workshops and Conferences

Prior and during the public consultation, five workshops, respectively conferences, with external stakeholders were held as part of the creation process of the 'eGovernment Action Plan 2016-2020'.

The first meeting took place as part of the Digital Assembly in Riga in 2015. The outcomes focused on initial digital rights with the 'once only principle', 'user friendly / intuitive public services' and 'digital literacy' as the three most important rights and principles to follow (European Commission, 2016d).

At the second, third and fourth workshop, held in Brussels in July, November and December 2015, the overall policy framework, the design of the public consultation as well as the concomitant online platform for the new action plan were discussed and planned (European Commission, 2016d).

In December 2015 Luxembourg organized, as part of their presidency, the 'Luxembourg eGovernment Conference'. After stating that significant progress was made in the field of eGovernment since the Malmö Declaration (European Commission, 2009), it was concluded that a new coherent EU eGovernment Action Plan should engage citizens and businesses in the design of public services and policy-making. Additionally, it was defined as central that the coordination between the different member states remains crucial, while the new plan must consider all stakeholders involved in eGovernment processes. Still, it needs to focus on the end users and their needs (European Commission, 2016d).

3.2.2.4 Benchmark Survey

The European Commission instructs a benchmark study on the developments of eGovernment processes in the EU member states on an annual basis. These studies

allow comprehensive comparisons between member states and document the speed and extent of developments on a national level. The most recent benchmark study is examined in detail in Section 7.1.

Naturally, these studies were an important source of information in the creation of the 'eGovernment Action Plan 2016-2020' since they show the actual obstacles and advancements of eGovernment in the single states.

3.2.3 Finalization and Publication

The European Commission considered the input provided by the different feedback and input initiatives along with internal input and responses from member states to identify the relevant measures for the next 'e-Government Action Plan 2016 - 2020'.

On April, 19th 2016 the new action plan was, next to other initiatives, officially communicated by the European Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions. In the concomitant press release, Andrus Ansip, Vice-President for the Digital Single Market, said:"As companies aim to scale up across the Single Market, public e-services should also meet today's needs: be digital, open and cross-border by design. The EU is the right scale for the digital times" (European Commission, 2016c, p. 1).

3.2.4 Content

The action plan consists of four chapters – 'Introduction', 'Vision and Underlying Principles', 'Policy Priorities' and 'Delivering the Action Plan'. In general, it covers three strategic approaches, firstly, the digitalization of public administrations, secondly, the connection of member states administrations and thirdly, the engagement of stakeholders, citizens and businesses (see Figure 3.2).

3.2.4.1 Introduction

The introduction positions the action plan as a part of the Digital Single Market Strategy (DSM), which should remove existing digital barriers in the European Union and prevent further fragmentation (European Commission, 2018a). It then elucidates the relevance and importance of eGovernment as a whole. It is stated, that citizens and businesses are interacting more and more via online services and expect to be able to interact similarly with their administration. Yet, public administration must be delivered to all, not exclusively via online public service.

Further advantages of digital public services are mentioned. It is said that these processes support administrative procedures, improve their quality and increase the efficiency. In addition, it is stated that interactions between citizens and public institutions are becoming faster, more efficient, more convenient and more transparent through digitization. Also, digital communication would make public services less costly (European Commission, 2016b).

The aim of the plan is to support the coordination and collaboration between member states and the Commission and to act as a catalyst for the single nations, while
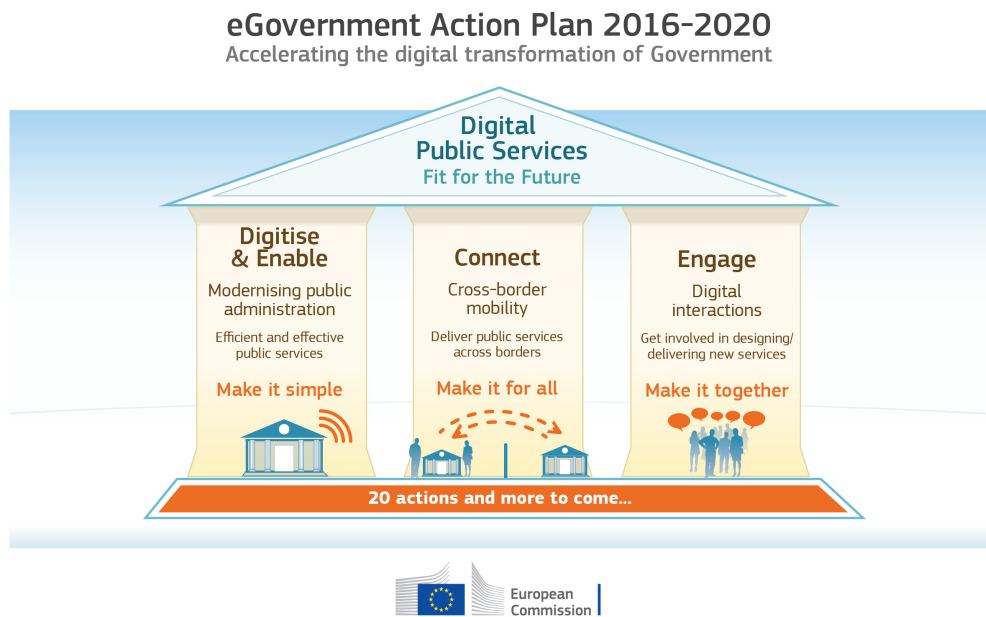
FIGURE 3.2: eGovernment Action Plan 2016-2020 (European Commission)

leaving the responsibility for the detailed strategies at the national level (European Commission, 2016b).

The Commission also sums up that the previous European eGovernment initiatives improved the coherence of national strategies as well as the exchange of practices between member states. Moreover, advancements in the interoperability of public systems, even across states, can be observed. But the Commission also clarifies that "citizens and businesses are not yet getting the full benefit from digital services that should be available seamlessly across the EU" (European Commission, 2016b, p. 2).

3.2.4.2 Vision

To achieve this full benefit of digital services, the Commission then formulates a central vision: "By 2020, public administrations and public institutions in the European Union should be open, efficient and inclusive, providing borderless, personalised, user-friendly, end-to-end digital public services to all citizens and businesses in the EU. Innovative approaches are used to design and deliver better services in line with the needs and demands of citizens and businesses. Public administrations use the opportunities offered by the new digital environment to facilitate their interactions with stakeholders and with each other" (European Commission, 2016b, p. 3).

This vision should lead to the opening of data and services between public administrations within and across borders, increase the efficiency of public services and help to meet the expectancy of greater transparency by citizens. In addition, public administrations have the chance to become more trustworthy and accountable by engaging with stakeholders. Furthermore the opening of public sector data and services to third parties will make the EU a better place to invest and live while all actions are protected with the legal framework for the protection of personal data and for privacy (European Commission, 2016b).

3.2.4.3   Principles

Since this vision needs to be put in practice by the member states, the action plan defines seven tangible principles that should by all means be followed by every initiative launched on every legislative level (European Commission, 2016b):

- **Digital by Default:** The digital provision of public services should be the default way of communication. Nevertheless, other channels must be made available as well for those citizens who are not online. Also, public services should be delivered through a single contact point or a 'one-stop-shop' and via different channels.

- **Once-only Principle:** Citizens and businesses should only be required to submit data once, regardless with which public administration they get in contact. The administrations should take care of the data management with regard to data protection laws.

- **Inclusiveness and Accessibility:** All digital public services should be designed to be usable for all citizens of the European Union regardless of disabilities, age or other characteristics.

- **Openness and Transparency:** Citizens and businesses should be able to monitor the use of their data and correct their own data if needed. In addition, public administrations should engage with stakeholders when designing and delivering digital services.

- **Cross-border by Default:** If relevant across EU borders, public administrations should make digital public services available to other member states. Thereby, the fragmentation of data will be prevented and citizens free movement within the EU will be supported.

- **Interoperability by Default:** It is vital that public services and data across the member states and different institutions are interoperable. This supports the DSM and the free movement of data and digital services in the European Union.

- **Trustworthiness and Security:** All digital public services should follow the privacy-by-design principle and, if possible, go beyond just compliance with data protection, privacy and security regulations and laws.

These principles act as a guidance and policy directives for the member states. The detailed design and implementation of services, though, lays completely in the responsibility of the different member states, respectively the single administrations.

3.2.4.4   Policy Actions

In addition to these underlying principles, the Commission laid out in detail what they are planning to do on the European level to support the action plan and realize their vision of the next step for eGovernment in the EU. They do so in three chapters:

- **Modernise public administration with ICT, using key digital enablers**
  The main target in this policy field is to get every public administration within the EU to provide their digital public services based on the same technical standards and specifications. Therefore, the EC is advancing the necessary

frameworks on different levels. One of the main measures is the 'European Interoperability Framework (EIF)' (European Commission, 2017e). This framework is setting the fundamental technical standards to secure an underlying interoperability throughout the EU member states.

Furthermore, the full implementation of e-procurement, e-invoicing and e-signatures by public administrations is set for 2019 in the eGovernment action plan (European Commission, 2016b). That is that all European public administrations should, for example, allow companies to bid online for contracts or should accept e-invoices.

Other efforts affect the EU wide possibility to use electronic identification services like eID, mobile ID and trust services like eSignature or website authentication especially in online enabled services like finance or eCommerce.

In line with their initiatives, the European Commission itself revises and redesigns their services to get in line with the principles postulated in the action plan. They also examine the integration of the 'no legacy principle', which describes the constant renewal of the internal IT systems (European Commission, 2016b).

Additionally, the EC opens up possible fields of further development that are or will be of a high interest for the digitalization of public administrations, for example the re-use of data and services between administrations, the usage of big data and internet of things services or the expansion of the 'European Cloud Initiative' from the sciences to public administrations and, therefore, the establishment of a shared cloud infrastructure to host eGovernment services.

- **Enabling cross-border mobility with interoperable digital public services**
  This policy field focuses on the possibility for businesses to operate online flawlessly across European borders. Therefore administrations need to "simplify access to information under EU business and company laws and enable businesses to easily start doing business, expand and operate in other Member States through end-to-end public e-services" (European Commission, 2016b, p. 7). Since information, contact points etc. for businesses are highly disperse and hardly traceable, the EC starts to develop a Single Digital Gateway to streamline information, contact points and problem solving mechanisms for businesses within the EU.

  In addition, the EC strengthens the 'European eJustice Portal' to make it the go-to contact and communication point for citizens with European and national courts. Further developments in this area are represented in the 'European e-Justice Action Plan 2014-2018'.

  Other measures include, for example, the interconnection of the business registers of all member states as well as the interconnection of all insolvency registers across the EU (European Commission, 2016b). Also, for cross-border business to consumer online sales of physical goods, the 'Single Electronic Mechanism' for registration and payment of VAT will be revised to lower the burdens for businesses doing business across European borders.

  Regarding the cross-border mobility of citizens the EC proposes the 'Electronic Exchange of Social Security Information (EESSI)', which gives administrations the possibility to exchange relevant personal social security information.

Moreover, the 'European Job Mobility Portal' expands through the integration between Public Employment Services systems and the portal as well as the exchange of CVs. Other initiatives in the eHealth area include the cross-border exchange of e-prescriptions or the advancement of telemedicine (European Commission, 2016b).

- **Facilitating digital interaction between administrations and citizens/ businesses for high-quality public services**
  Throughout the action plan the European Commission constantly mentions this policy field. The involvement of businesses and citizens as well as researchers in the processes of designing, developing and delivering digital public services should improve the quality and performance. In addition, the secure opening of data makes administrations more trustworthy and transparent. To further support these open-data approaches, the EC establishes a central platform for administrations to safely share their data (European Commission, 2016b).

  Especially interesting in this context is the re-use of spatial data for urban and land-use, traffic planning and for scientific purposes. The work with these data has the potential to stimulate new innovations. Because of that the EC promotes the development of end-user applications to harvest data provided through the use of spatial data. This could help in the EU policy making process with regards to efficiency, environment issues or compliance issues (European Commission, 2016b).

  Furthermore, the EC will assess the possibility of integrating the once-only principle not only in each member state but on a EU wide scale.

3.2.4.5   Delivering the Action Plan

The concluding part of the action plan describes how the EC will set up the 'eGovernment Action Plan Steering Board', which consists of representatives of each EU member state and will be in charge of governing the action plan.

Moreover, the Commission states that the plan includes policy measures that are set to be realized by 2017 or 2018. Because of that and because of other developments it might be necessary to adjust, extend or change the 'eGovernment Action Plan 2016-2020' even within its running time (European Commission, 2016b).

These adjusting processes will be presented in the next chapter.

3.2.5   Adjustments and Extensions

Based on the findings and experiences with the former initiatives and action plans the 2016-2020 action plan is designed to be dynamic, flexible and iterative. This approach allows for the EC or stakeholders to propose additions or changes to the plan. One major part of the dynamic approach is the 'eGovernment4EU' platform (European Commission, 2018c). On this platform every citizen of the EU is allowed to propose actions, describe problems with digital public administrations or simply monitor the process of the implementation of the single policies.

Next to the individual feedback and proposals there were two major comments or adjustments of the plan since its presentation in 2016.

3.2.5.1 Digital Single Market – Mid-term Review

In May 2017, due to the second anniversary of the DSM strategy, the mid-term review was published by the Commission (European Commission, 2017a). Based on the findings of this review, the eGovernment action plan was adjusted and five key measures were added to it (European Commission, 2018b).

- the IT platform for exchange of electronic evidence between judicial authorities
- the initiative on Electronic Official Control for food and plant products
- the Enforcement of EU agri-food legislation on internet sales and consumer information
- the Digital Government for Citizens Charter
- the Urban Agenda for Europe

These five actions were integrated into the action plan and became part of the policy actions chapter.

3.2.5.2 The Tallinn Declaration

During the Estonian presidency of the Council in the second half of 2017, the 'Tallinn Digital Summit' took place in September. There, all heads of state and government discussed the digitalization of the EU. In its aftermath, several ministerial meetings took place to finalize detailed discussions. One of these meetings was the ministerial meeting on eGovernment on the 6th of October. The result of this meeting was the so called 'Tallinn Declaration' (European Commission, 2017d). In this declaration the ministers in charge of eGovernment policy and coordination from 32 countries of the European Union and the 'European Free Trade Area (EFTA)' acknowledge their full support of the 'eGovernment Action Plan 2016-2020' by at the same time demanding processes with regards to eGovernment to further speed up. They state that "more needs to be done and faster to ensure its implementation, including to spread digitisation across all policy areas and to put the end-users – citizens, businesses, public sector employees – truly at the center of services (user-centricity)" (European Commission, 2017d, p. 2).

To ensure the full implementation of the action plan and to realize their overall vision "to strive to be open, efficient and inclusive, providing borderless, interoperable, personalised, user-friendly, end-to-end digital public services to all citizens and businesses – at all levels of public administration" (European Commission, 2017d, p. 3), the single member states commit to further actions that should be implemented in the time frame of 2018-2022. These actions are in-line with the underlying principles of the recent action plan.

For example, for the principles of digital-by-default, inclusiveness and accessibility they want European citizens and businesses to interact with administrations in a digital way whenever this is feasible and cost-effective. Also, the best possible user-experience in their services should be ensured and the acceptance and use of digital

public services that are already there should be strengthened. For the once-only principle they commit to implementing it at least for the key public services as a choice for citizens and businesses. For the principle of interoperability by default national frameworks based on the EIF should be developed, while for the principle of openness and transparency they want citizens and businesses to better be able to manage the data they have given to public authorities (European Commission, 2017d).

Therefore the single national states commit with this declaration to tangible policy actions on the national level based on the recent action plan. Furthermore, they are asking the European Commission or other European institutions for every principle to adjust or speed up certain processes on the European level. For the once-only principle, for example, they are calling upon the Commission "to step up the work to define the organisational and technical steps necessary for applying the once only principle to key cross-border digital public services in support of the Single Market, building on the results from pilot projects and programmes" (European Commission, 2017d, p. 5). In summary they are asking the EC to take note of this declaration in case of changes to the 'eGovernment Action Plan 2016-2020'.

The progress of the commitments in the Tallinn Declaration will be annually reported by the 'eGovernment Action Plan Steering Board'.

3.2.6   Support and Criticism

After the publication of the 'eGovernment Action Plan 2016-2020' in April 2016 there was barely any coverage in the media commenting on its release. Nevertheless, some reactions followed.

As part of the DSM strategy every EU member state appointed a so called 'Digital Champion'. These champions function as ambassadors for the DSM and should help every European to embrace the chances of digitalization. They are not politicians but professionals from the digital forefront. The first German champion, for example, was Gesche Joost until she stepped back in summer 2018.

In September 2016, these champions published a joint statement on eGovernment and strongly supported the action plan while stating that it can only be a first step. Furthermore they underlined the openness of the new plan and asked the member states to aspire:

- "To the innovative, efficient and inclusive digital European Union.

- To borderless, personalised and user-friendly electronic public services to all citizens and businesses in the European Union.

- To attractive business environment in the European Union" (European Commission, 2016a).

These aspirations are explained in detail with the focus on the intensive communication with citizens. They should, according to the champions, feel that their lives are becoming easier through digital public services. Therefore, user experience should be a major focal point for new services. Also, the champions call on the member states to actively participate in the 'eGovernment Action Plan Steering Board' since this could become the central catalyst of innovative processes. Based on that they

"emphasize the need to ensure common vision and goals among the national action plans on eGovernment in Member States and ongoing initiatives at EU level" (European Commission, 2016a).

In general, the 'Digital Champions' strongly support the new action plan as long as it acts as a starting point and its various opportunities are used and it is truly applied in the member states.

Other comments on the new plan could be found in thematically fitting blogs. In the 'Open Forum Europe' blog the plan is described as "a realistic but ambitious vision" (De Vriendt, 2016). Nevertheless the principle of openness and transparency is criticized because the terms are, according to De Vriendt, becoming more and more synonyms. He says: "While the concept of opening up government data is well known today, the concept of opening up government services is not. Having participated in some workshops that the Commission organized last year on open eGovernment, I am not sure if the Commission has a clear view on this" (De Vriendt, 2016).

In general, De Vriendt rates the action plan as a good overview of what is happening with some interesting new ideas, especially in the engagement field. On the other hand, though, he states, that particularly the key enablers are part of the eGovernment plans for years and no real progress could be observed.

Both comments, respectively critics, of the plan emphasize the need of a sophisticated application of the action plan on the member state level. How this is done in three EU member states (Germany, the United Kingdom and Estonia) is examined in the next chapter.

Chapter 4

Case Studies

As detected in the previous chapter, the successful realization of the European 'eGovernment Action Plan 2016-2020' strongly depends on its application in the member states of the European Union. This means, on the one hand, the transition of the plan into national, superordinate strategy plans and visions, on the other hand, the tangible realization of measures and digital public services within public administrations.

To examine how different member states of the European Union applied the action plan and to look into the extent of the implementation, three member states are selected: Germany, the United Kingdom and Estonia. The selection of these three countries is based on different factors. Firstly, it was necessary that the national strategies were available in either English or German language. Secondly, the results of the three states in the quantitative studies (Chapter 7) should differ. Thirdly, the governance systems in each of these countries as well as their population should be distinguishable.

This chapter covers a look into the different national eGovernment strategies together with an examination of the emergences.

4.1 National Strategies

To be able to compare the national eGovernment strategies with the 'eGovernment Action Plan 2016-2020' of the EC as well as among themselves, it is necessary to have a closer look at the most recent version of the respective plans and strategies. Therefore, an introduction to these plans and a short historical and political look back are given for each state.

4.1.1 Germany

Germany, as the country with the largest population in the EU and the strongest economy, plays a major role in leading the EU and its policies. It is also a particular case since the 16 states are responsible for the organization of administration. Nevertheless, the federal state and the state governments are legally able to work alongside on the basis of Article 91c of the German constitution in the field of eGovernment (Commission of Experts for Research and Innovation, 2016).

Despite this constitutional particularity the need to bring together the interests of the federal state and the counties acts as an obstacle for the frictionless establishment and implementation of eGovernment strategies.

4.1.1.1 Derivation

Before 2010, the efforts in the eGovernment in Germany were mainly uncoordinated and dispersed on the regional and national level. Due to this, the national government published the 'National eGovernment Strategy' in 2010. Part of this was the foundation of the 'IT Planning Council' which brought together officials from the federal state and the states to control and coordinate the cooperation in the field of information technology. Next to the coordinative function, the planning council had only very limited resources and political power (Commission of Experts for Research and Innovation, 2016).

The general goal of the strategy was to make Germany's eGovernment the international standard for effective and efficient administration by 2015. Thereby, Germany wanted to meet their role of the impeller within the European Union in the field of eGovernment.

In 2013, the federal minister of the interior and the federal government commissioner for IT expanded the eGovernment strategy with the eGovernment act (Bundesministerium des Innern, 2013). The principal aim of the eGovernment act was to provide more administrative services that are independent of time and location. Furthermore, it was intended for federal, state and local authorities to offer more simplified, user-friendly and efficient electronic administrative services. Other topics regulated through the act included for example simplified administrative procedures for electronic evidence and electronic payment or rules on the supply of machine-readable data by the administration (Bundesministerium des Innern, 2013).

The newly elected grand coalition then laid out their vision and plans for eGovernment in Germany until 2020 through the action plan 'Digitale Verwaltung 2020' in 2014 (Bundesministerium des Innern, 2014). In this plan, it was constituted that uncoordinated efforts and inefficient investments of the past should be prevented by creating the legal, organizational and technical requirements for strong eGovernment in Germany. Measures of this action plan included amongst other things:

- a central information and knowledge sharing tool for public administrations
- the integration of relevant stakeholders like research institutions, private businesses and IT experts
- the accessibility of all systems
- the assurance of interoperability through standardization in the responsibility of a federal editorial office
- audit of every legislative regulations that require citizens and businesses to appear in person at public administrations
- implementation of the open data charta that was developed by the G8

The core objective though was the enforcement of the first steps in the direction of offering every public service on every constitutional level digitally. Since most of these

contacts are taking place on the regional level, the inclusion of regional administrations was stated as crucial for a successful establishment of eGovernment systems. To test the best way of integrating local authorities, a pilot project with three local communities (city of Gütersloh, city of Düren, district Cochem-Zell) started in 2014 (Bundesministerium des Innern, 2014).

In 2015, the 'National eGovernment Strategy' was revised and afterwards updated (IT Planungsrat, 2015). It was considered important to interest a larger group of people in eGovernment in Germany. Furthermore, the objectives were updated based on the revision and it was stated that the strategy should be regulated on a more regular basis "to ensure that it remains innovative even in a changing social environment and under new technological framework conditions" (IT Planungsrat, 2015).

In general, it can be said that various strategy papers, international declarations and legislative initiatives influenced Germany's eGovernment in the past, while its federal structures are the biggest obstacle to the development and expansion of eGovernment (Commission of Experts for Research and Innovation, 2016).

4.1.1.2   Current Status

Recent studies show that Germany's plan to become an international frontrunner for eGovernment solutions has not been met: "On the contrary, by international comparison Germany's eGovernment is underdeveloped and by that wasting important public and private innovation and value-creation potential" (Commission of Experts for Research and Innovation, 2016).

Especially the development of digital public services for citizens in Germany is lagging behind, while the digitalization of business services has gone more far. The study by the 'Commission of Experts for Research and Innovation', which was instructed by the federal government, states that "E-government services for citizens in Germany are fragmentary and largely not fully digitized. This is aggravated by the fact that the existing services are not user-friendly. In addition to full digitalization, an e-government service needs to broadly publicise the online services that are available. In order to be user- friendly, it also needs to be clearly structured, easy to operate and transparent. Ideally, the electronic information and services are bundled and offered in one place: in a 'one-stop shop'" (Commission of Experts for Research and Innovation, 2016). Until now, citizens have to gather information on the individual websites of public administrations.

The report further sums up, that the expansion of eGovernment in Germany is lacking legally binding regulations so that the recent status is a confusing and technically heterogeneous ragbag of services. Solely the tax declaration service 'ELSTER' and the cargo traffic management system 'VEMAGS' are centrally controlled services that are frequently used. In particular, digital services on the regional level are mostly "island solutions" lacking interoperability and transparency (Commission of Experts for Research and Innovation, 2016). A comparable situation is analyzed in the fields of open data and transparency of personal data usage by the government.

To work against these shortcomings, the planning council created a joint working group consisting of members of the federal government and representatives of the counties to improve federal IT cooperation. This working group is called 'Federal IT Cooperation' (FITKO). It analyzed the current situation especially with regards

to the organizational obstacles. While recommending a stronger role of the 'IT Planning Council' it also states that a new independent organization by the federal government as well as the county governments should "support the IT Planning Council in exercising its coordination and control function" (Commission of Experts for Research and Innovation, 2016, p. 9).

Because of this situation, the federal government adopted a crucial new legislation in 2017 that is carried out until today. This new 'Onlinezugangsgesetz' (roughly: Online Access Act) changed the German constitution in a way that the federal government gained much more regulative power in the field of technical standardization and eGovernment (Bundesministerium des Innern, 2017). Based on that, it was set that Germany will start to build a 'one-stop-shop' online portal where all public administration services will be centralized. This portal shall be finished by 2022 and give citizens and businesses the possibility to access all services via one account. Furthermore, the federal government can now determine technical standards and security measures to ensure interoperability and maximum security (Bundesministeriums der Justiz und für Verbraucherschutz, 2017).

This development led to a strengthening of the 'IT Planning Council' as well. Since the council is the acting body of the federal government, it already set standards for the development of digital public services in cooperation with county experts and officials. The 'XFall'-standard for example ensures the interoperability of data between different public administrations in Germany and is therefore key for the implementation of the 'once-only' principle (Klein, 2017).

In summary, the recent developments in Germany are drawn with a new dynamic resulting of the new competencies that the central, federal government gained. Due to these powers the counties and the single public administrations are under much more pressure to design, develop and deliver digital public services that are meeting the required standards.

4.1.2 The United Kingdom

The United Kingdom is a rather interesting case since it is in the process of leaving the European Union. Nevertheless the country will remain a member until at least 2020, so that the action plan is applicable. Furthermore, their previous efforts in the field of eGovernment are based on EU policies, too.

4.1.2.1 Derivation

Following rather cluttered efforts beforehand, the structured digitalization of the UK government kick-started in 2010 with the 'Digital by Default' strategy proposed by a report produced for the Cabinet Office in 2010 called 'Directgov 2010 and beyond: revolution not evolution' (Gov.uk, 2010). Shortly after, in April 2011, the 'Government Digital Service' unit in the UK cabinets office was founded.

This unit then developed the 2012 'Government Digital Strategy', "which demonstrated the potential of public service transformation by rebuilding some of the most high volume services to make them 'digital by default'" (Gov.uk, 2017, p. 5).

Also in 2012, the renowned GOV.UK was launched with the vision of becoming the one-stop-shop and single domain for every UK citizen to get in contact with the government. Until 2015 it had replaced the majority of department and agency websites. The single departments developed digital services across several policy fields. For example 'GOV.UK Verify' became a secure way of identifying oneself online. Furthermore, the UK government claims that they are actively sharing code, patterns, platforms and components as well as best practices for approaching technological and service design problems across government institutions (Gov.uk, 2017).

Moreover, the digital transformation impacted the human resources policies of the UK government. It recruited a large number of digital specialists and improved the training available to public servants like the 'Department for Work and Pensions Digital Academy' for instance.

In general the digitalization of the UK government is moving forward rather quickly, especially in the bigger operational departments. Nevertheless, "there are still a significant number of smaller agencies and other public bodies which either do not have citizen-facing online transactions or are too small (either in terms of organisational size or in transaction volume) to have been able to invest heavily in digital tools and techniques" (Gov.uk, 2017, p. 22). This shows that the transformation is still in progress. This is addressed in the most recent action plan.

4.1.2.2 Current Status

The current strategy of the UK regarding eGovernment is the 'Government Transformation Strategy' that sets out how the government will use digital developments to transform the relationship between the citizen and the state (Gov.uk, 2017). It builds on the idea that the UK can do much more to deliver online services, so people prefer to use them, which was the ambition of the previous 2012 'Government Digital Strategy'.

The scope of this strategy is set to cover the full transformation of government departments to improve the service to citizens across all channels. Also departments should change their internal procedures to enable better collaboration and improve the ability to deliver digital services.

The laid out vision is to "transform the relationship between citizens and the state - putting more power in the hands of citizens and being more responsive to their needs" (Gov.uk, 2017). Thereby public services should become truly focused on the citizens needs, become more efficient and improve continuously based on data and evidence. With that and the digitalization of the government itself, it should be achieved that the running cabinet can make impacts as fast as possible as well as at lower cost and shorter time frames. Citizens and businesses should have a coherent experience when they get in contact with the government, which means that the services must be of a comparable experience than those provided by leading private services. Part of this transformation should always be the guarantee of secure systems that are protected against possible attacks and meet data security standards to manifest the trust of citizens and businesses in the government as well (Gov.uk, 2017).

For this process the UK government states five objectives that should be achieved by 2020:

- change all parts of government services as well as the government internally to deliver world-class digital public services

- establish an open and iterative culture among all parts of government staff

- transform the IT infrastructure and the processes within government institutions to keep up with recent developments and enable a high-class working environment

- use data for transparency but also for transformation processes

- establish and use open standards and patterns to make the best possible use of solutions and developed services

The strategy then proceeds with different measures for different policy fields. These are 'Business transformation', 'Grow the right people, skills and culture', 'Build better tools, processes and governance for civil servants', 'Make better use of data' and 'Create shared platforms, components and reusable business capabilities'. It defines the actions that should be realized until 2020 and even includes fixed numbers. For example, the 'GOV.UK Verify'-platform should have 25 million users by then. Another example of a targeted action is the implementation of effective agile services within all parts of the UK government and especially where services span departmental boundaries (Gov.uk, 2017).

All in all, the 'Government Transformation Strategy' is an up-to-date governmental strategy that displays the United Kingdom as a frontrunner in eGovernment services. It lays out objectives and names clear measures and actions that should take place until 2020. Remarkably, there is no mention of the action plan of the European Commission or other European initiatives (EIF, etc.), which can be explained by the 'Brexit' procedures.

4.1.3   Estonia

The Baltic country of Estonia inhabits 1.3 million people and regained independence from the Soviet Union in 1991. It is a parliamentary representative democratic republic, where the Prime Minister is the head of the government and joined the European Union in 2004 (Vassil, 2015).

Since the turn of the millennium, Estonia gained recognition for being a start-up hub and friendly environment for foreign businesses. "Its biggest innovation, however, lies in e-government" (The Economist, 2017).

4.1.3.1   Derivation

The process of becoming one of the leading eGovernment countries in the world began in 1997, when the government began looking into new forms of digital documents as a supplement and started its eGovernment efforts. What followed was a coordinated governmental effort to transform the country from a state into a digital society.

At the start of the 2000s, Estonia was a country with a very broad digital divide. A joint initiative of the government and private sector partners (banks and telecommunication companies) radically promoted ICT knowledge and the necessary infrastructure (Vassil, 2015). In 2000, the implementation of eTaxing took place followed by the start of an open source environment, called X-Road, that allows the nation's various e-service databases, both in the public and private sector, to link up and operate in harmony. This environment is running as a distributed, decentralized system that allows 24/7 access (Enterprise Estonia, 2018).

It was also the partnership between the government and the private sector that pushed the introduction of the digital ID in 2002. This electronic ID-card (see figure 4.1) functions as the identification document of Estonian people in Estonia itself but also in every other EU member state. But most importantly the IDs can be used to securely identify yourself online. Together with a smart card reader and an internet connection every Estonian can identify her- or himself and also digitally sign documents. These two functions are secured by separate individual PIN-codes (Vassil, 2015).

FIGURE 4.1: Estonian electronic ID-card (Vassil, 2015)

Soon after the introduction of the digital ID, it became obvious that the card did not attract as many users as the government had hoped for. The reason for that hesitation was identified to be the lack of appropriate applications and incentives for the use of the ID-card. The application that changed all that was one that is still in use – the Estonian i-voting system (Heller, 2017).

Before the introduction of this system only around 5.000 people had used their digital ID-card. At the first election where i-voting was possible in 2005 already more than 9.000 Estonians casted an i-vote (Heller, 2017). Since then the number of applications, even from the private sector, rises steadily. Simultaneously, the numbers of digital authentications and digital signatures are in a progress of constant growth (see figure 4.2).
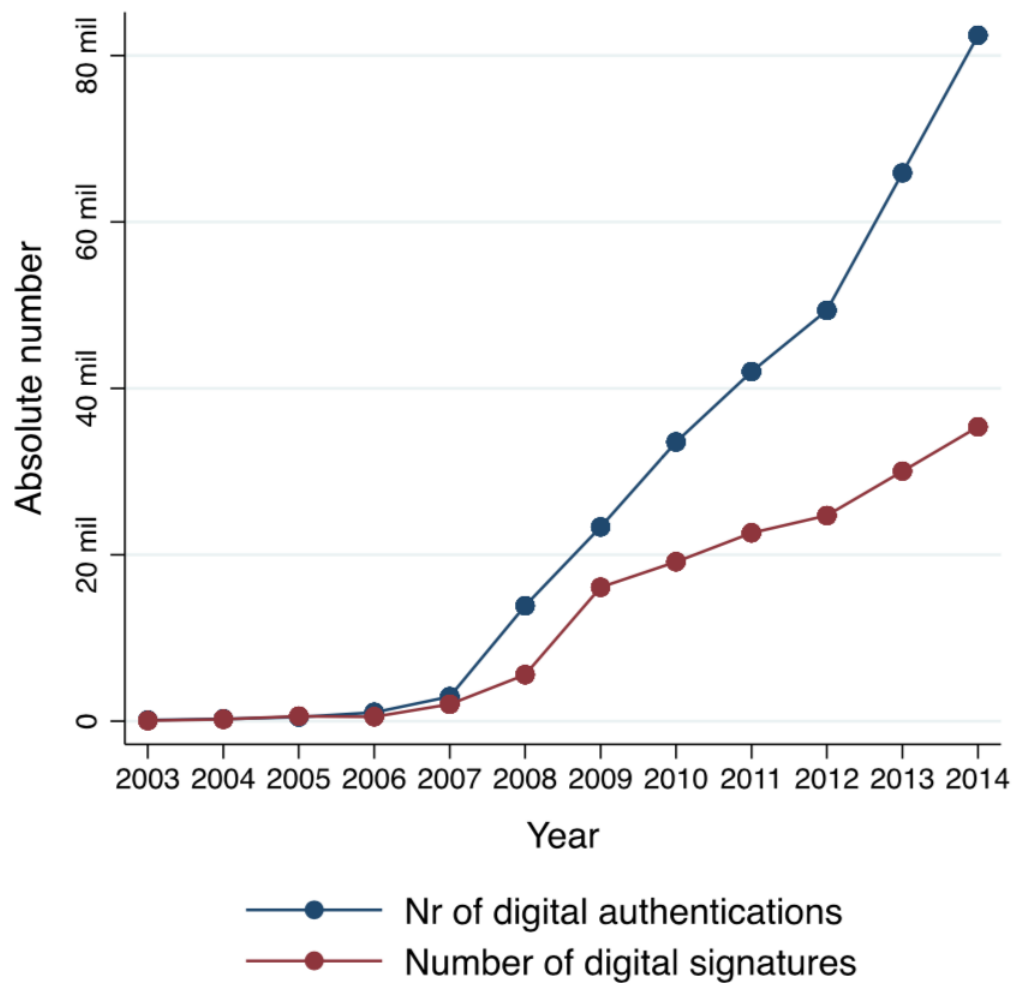
FIGURE 4.2: Growth of digital authentications and signatures over
time (from August 2003 until March 2014) (Vassil, 2015)

After the start of the i-voting system applications for public safety (eg e-Police) and
e-health followed. Starting in 2008, the Estonian government tested the blockchain
technology to secure their decentralized data system. Since 2012 it is in operational
use and functions as the major security feature to prevent cyber crime attacks (En-
terprise Estonia, 2018).

In 2013, the Estonian government published their 'Digital Agenda 2020 for Esto-
nia' (Ministry of Economic Affairs and Communication, 2013). This strategy sets
out the following vision: "Estonia will have a well-functioning environment for the
widespread use and development of smart ICT solutions. This will have resulted in
increased competitiveness of our economy, well-being of people and the efficiency
of public administration" (Ministry of Economic Affairs and Communication, 2013,
p. 17). It also delivers a set of general and specified objectives and measures that
should be achieved respectively applied by 2020.

The latest major addition to the eGovernment system in Estonia was the introduction
of the digital residency program in 2014. This e-residency allows logged-in foreign-
ers to partake of some Estonian services, such as banking, as if they were living in
the country (Heller, 2017). It is therefore a transnational digital identity, that can

provide anyone anywhere with the right to access Estonian public services, start a business in the EU and so forth (Enterprise Estonia, 2018).

Due to all these steps the term 'e-Estonia' has appeared as one of the most popular terms to capture Estonia's achievements in the fields of public administration, digital technology and eGovernment in the last two decades (Mäe, 2017).

4.1.3.2 Current Status

With the current strategy 'Digital Agenda 2020 for Estonia' (Ministry of Economic Affairs and Communication, 2013) the policy guidelines until 2020 in Estonia are set. Due to the developments and achievements of the last two decades, Estonia has established itself "at the forefront of states that are aiming to modernize their public sector and provide transparent governance" (Vassil, 2015, p. 3).

Residents can process close to every interaction with the government online. This includes public services like digital identification, digital signatures, electronic tax filing, online medical prescriptions or internet voting. All can be dealt with within minutes on one single platform. On this 'eesti.ee' platform the once only policy, which states that no piece of information has to be entered twice, is applied to the fullest (Heller, 2017). Additionally the citizens are in full control of their data. They can always comprehend which public institution has used their data for which purpose.

The system architecture behind this platform, X-Road, that holds all data decentrally, is now being implemented by the neighbouring country Finland as well. This results in the possibility for residents of these two countries to use their official data in both countries likewise (Heller, 2017). The connection between Estonia and Finland with regards to the sharing of data is therefore the closest between two independent countries worldwide.

The e-residency program permits citizens of another country to become residents of Estonia without ever visiting the place and puts Estonia in the pole position to attract virtual talent and connect it to the country. Until now, around twenty-eight thousand people have applied for e-residency; the aim for 2025 is to have ten million e-residents registered (The Economist, 2017). But not only foreigners are connecting themselves to Estonia. Also, the native citizens, especially from the start-up scene, strive to work for the state.

In the second half of 2017, Estonia hold the presidency of the European Council. Its major topic was the digitalization, particularly with regards to eGovernment. Sandra Roosna, a member of Estonia's E-Governance Academy, said: "I think we need to give the European Union two years to do cross-border transactions and to recognize each other digitally" (Heller, 2017). This shows that Estonia tries to get the other EU member states to keep on track with their strategies and measures. Furthermore they want to "expand the EU's familiar four freedoms — the unhindered movement of goods, services, capital and people across borders — to include a fifth: data" (The Economist, 2017).

Chapter 5

Analytical Comparison

After analyzing, on the one hand, the 'eGovernment Action Plan 2016-2020' of the European Union and, on the other hand, the eGovernment strategies of Germany, the United Kingdom and Estonia, the next step for answering the research question is to compare the different strategies. To do so, a comparative method approach is used, which will be explained in the first part of this chapter. Afterwards, the analytical comparison will start with the factorization of the European action plan. By comparing the national strategies with these derived factors the degree of consonance of the member state strategies with the action plan will be determined. The results of these comparisons will be summarized in the final part of this chapter.

5.1   Method

The method used for the comparison of the different political strategies is based on the works of John Stuart Mill. The so called 'Comparative Method' is next to the experimental method, the statistical method and the case study approach, one of the four fundamental scientific methods used to test the validity of theoretical propositions. It can be used to detect relationships between concepts where all or most other variables are constant (Lijphart, 1971). It is particularly suitable when there is only a small number of cases to compare and no experimental approach possible.

The basic assumption of Mill was: "If an instance in which the phenomenon under investigation occurs, and an instance in which it does not occur, have every circumstance save one in common, that one occurring only in the former; the circumstance in which alone the two instances differ, is the effect, or cause, or a necessary part of the cause, of the phenomenon" (Mill, 1843, p. 454).

The strategy or design used in this thesis is the 'Most Similar Systems Design' (MSSD). This comparative strategy aims to compare very similar cases that only differ in dependent variables. In a basic sense, MSSD starts out with similar variables between subjects and tries to figure out why the outcome is different between the subjects (Collier, 1993).

Generally speaking, there are two methods of applying this research design. The first is a stricter application and the second is a looser application. While the former implies that various cases are compared that have a number of similar control variables and would only differ from each other by one single independent variable. The

looser application uses the same concept, but the chosen cases have rather similar characteristics that are not strictly matched to a set of control variables (Ragin, 1987).

In this study, the looser application of the MSSD is used. All three political eGovernment strategies of Germany, the UK and Estonia are based on the EU action plan. Therefore, they have similar characteristics while the varying variables are to be figured out to explain different applications and acceptances of eGovernment services in the three countries.

5.1.1   Strength and Weaknesses

The general challenge of the comparative method is that there are only a small number of cases but a large number of variables. That is why the experimental or statistical method should always be preferred, if possible (Lijphart, 1971). Due to the scope of this thesis and the limited amount of resources, the weaker comparative method is chosen for this study. Nevertheless, comparative research often acts as a starting point for research approaches that proved to be very fruitful for specifying and testing scientific hypotheses that can be tested with statistical and experimental studies for larger numbers of cases (Lijphart, 1971). Since this is the aim of this thesis, the MSSD proves to be the method of choice.

5.2   Comparison

The basis of the comparative approach used in this thesis is the analysis of, on the one hand, the 'eGovernment Action Plan 2016-2020' in Section 3.2 and, on the other hand, the analysis of the three case countries in Chapter 4. To be able to compare the different strategies, it is necessary to first factorize the key contents and principles of the EU action plan. This will be done using a detailed point system, where every principle is analyzed in several dimensions. After that the principles as well as the dimensions will be weighted due to their different levels of importance stated by the EC.

Second, this factorization will then be applied to the different national strategies resulting in a score for each content or principle. These scores will, after that, be summarized and thereby constitute an overall rating for each country. This rating will describe the degree to which extent the 'eGovernment Action Plan 2016-2020' is applied into the national eGovernment strategies by Germany, the United Kingdom (UK) and Estonia.

5.2.1   Factorization of the 'eGovernment Action Plan 2016-2020'

The key contents of the 'eGovernment Action Plan 2016-2020' are the seven principles that, by all means, should be followed by every initiative that is launched on every legislative level. These principles are supported by the initiatives and policies of the EC and include every important aspect of eGovernment development. Therefore, these principles will guide as the reference point to compare the national strategies with the European plan. As described in Section 3.2, the seven principles are:

- Digital by Default

- Once-only Principle

- Inclusiveness and Accessibility

- Openness and Transparency

- Cross-border by Default

- Interoperability by Default

- Trustworthiness and Security

They act as a guidance and policy directive for the member states. To analyze how far these principles are integrated into the national strategies of Germany, the UK and Estonia, they are examined in six dimensions:

- **Reference:** Are the single principles mentioned in the national strategies?

- **Scheduling:** Are detailed time frames for the implementation of the single principles defined?

- **Achievements:** Do certain measures lead to the realization of the single principles already completed?

- **Planning:** Are tangible measures planned to achieve the implementation of the single principles?

- **Vision:** Are further plans laid out, that even excel the seven principles?

- **Evaluation:** Are evaluation measures planned to analyze the success of the implementation of the seven single principles?

Each of these six dimensions is applied to every single principle of the EU action plan. Thereby, the extent of implementation in the national strategies can be defined. To quantify this degree, the existence of the dimensions for each single principle will result in a defined point score. The dimensions itself are weighted into three different categories. Since the 'Achievement' of the successful implementation of a principle is the most desirable state, this dimension is valued as category one. The second best possible state is the 'Reference', 'Scheduling' and 'Planning' of the implementation of the principles. Therefore, they are valued as category two dimensions. The dimensions 'Vision' and 'Evaluation' are important as well but chronologically indicate the last steps in the implementation of the principles into national policies. Therefore, they are valued as category three dimensions.

Based on this categorization the point system for the dimensions will be as follows:

Dimension	Points
Achievements	3
Reference	2
Scheduling	2
Planning	2
Vision	1
Evaluation	1
Total	11

TABLE 5.1: Factorization of the seven principles

This means that the three national strategies can receive a total score of eleven points for every one of the seven principles established by the European Commission. Therefore the maximum total score for the implementation of the 'eGovernment Action Plan 2016-2020' is **77**, meaning an implementation rate of 100 %.

Using this model, the national policy plans will be analyzed. This will then lead to a sophisticated comparison regarding the implementation of the EU principles into national policies.

5.2.2   Germany

As derived in Subsection 4.1.1, the current approaches by the German authorities with regards to eGovernment are based on different strategies. Therefore, all of these will be taken into account for the following analysis.

Principle 1: Digital by Default

Alongside the new 'Onlinezugangsgesetz' the development of a 'one-stop-shop' portal until 2022 has recently started. On this portal, German citizens and businesses will be able to access every benefit or service regardless of place or time. Furthermore they will be able to apply for all benefits online (Bundesministerium des Innern, 2017). Therefore, the groundwork of the 'Digital by Default' principle is laid out and the dimensions 'Reference', 'Scheduling' and 'Planning' are given. Nevertheless, the guideline until the end of 2017 was, as stated in the 'Digitale Verwaltung 2020' strategy, that services should only be made accessible online where it seems reasonable (Bundesministerium des Innern, 2014). This led to the patchwork of digital public services in Germany and kept the usage of the already digitalized services comparably low (Commission of Experts for Research and Innovation, 2016). The dimension 'Achievement' is accordingly not met.

Since the realization of the combined portal just started and marks the most recent development in German eGovernment, this process already acts as a vision. That is why no further visions, that excel the principle, are laid out. The 'Vision' dimension is therefore not met. Also, due to the recency of the new plans, no evaluation processes are defined. This dimension is accordingly also not met.

Dimension	Points
Achievement	0
Reference	2
Scheduling	2
Planning	2
Vision	0
Evaluation	0
Total	6

TABLE 5.2: Principle 1: Digital by Default – Germany

Principle 2: Once-only Principle

The same argumentation applies to the next principle. Until now, citizens and businesses have to submit their data every time they get in contact with another public institution. This problem would be solved by the new portal, where, as stated above,

only one account would be necessary for every interaction with the governmental administrations.

Dimension	Points
Achievement	0
Reference	2
Scheduling	2
Planning	2
Vision	0
Evaluation	0
Total	6

TABLE 5.3: Principle 2: Once-only Principle – Germany

Principle 3: Inclusiveness and Accessibility

The principle of inclusiveness and accessibility is one of the main targets proposed in the 'Digitale Verwaltung 2020' strategy. It is stated as the number one vertex and concretized by measures and responsibilities (Bundesministerium des Innern, 2014). In fact, most of the existing digital public services fulfill the requirements for being accessible (Commission of Experts for Research and Innovation, 2016). Therefore, the dimensions of 'Achievement', 'Reference', 'Scheduling' and 'Planning' can all be seen as met. Also, the dimension of 'Vision' is met because it is stated in the strategy that inclusiveness and accessibility are not only to be assured due to the usability for everyone in society but also to make it easier for administrations itself to work with the systems. This includes another perspective on the principle as stated by the EC. Furthermore, the dimension of 'Evaluation' is met, since the regulations are evaluated regularly, for instance by the University of Kassel (Bundesministerium des Innern, 2014).

Dimension	Points
Achievement	3
Reference	2
Scheduling	2
Planning	2
Vision	1
Evaluation	1
Total	11

TABLE 5.4: Principle 3: Inclusiveness and Accessibility – Germany

Principle 4: Openness and Transparency

This principle covers, on the one hand, the transparency of data usage within public administrations and, on the other hand, the integration of research institutes and experts in the process of designing new systems. As stated by the 'Commission of Experts for Research and Innovation', neither of these two aspects are adequately achieved in Germany yet. The usage of personal data is rather intransparent. At least the publicly available information regarding the new combined portal do not clarify if and how this transparency should be achieved in the future. Nevertheless, the buzzword transparency is mentioned without any further specifications for example

at the FITKO (Föderale IT-Kooperation (FITKO), 2018). This leads to the following valuation of the dimensions:

Dimension	Points
Achievement	0
Reference	2
Scheduling	0
Planning	0
Vision	0
Evaluation	0
Total	2

TABLE 5.5: Principle 4: Openness and Transparency – Germany

Principle 5: Cross-border by Default

The policy strategy 'Digitale Verwaltung 2020' mentioned to keep measures and initiatives in line with the DSM strategy of the EU (Bundesministerium des Innern, 2014). This effort is illustrated by several examples of cross-border data usage, such as SPOCS (Simple Procedures Online for Cross-Border Services). The adjustments and additions to this policy as well as the new 'Onlinezugangsgesetz' are not mentioning any further initiatives to assure the availability of services in and for other member states (Bundesministeriums der Justiz und für Verbraucherschutz, 2017). Accordingly, the dimensions of 'Reference' and 'Planning' are met, while the other dimensions can not be approved by the publicly available policies.

Dimension	Points
Achievement	0
Reference	2
Scheduling	0
Planning	2
Vision	0
Evaluation	0
Total	4

TABLE 5.6: Principle 5: Cross-border by Default – Germany

Principle 6: Interoperability by Default

In all relevant recent strategy plans of the German government, the necessity of interoperability, especially between the different administrations in Germany, are mentioned. Especially the new 'Onlinezugangsgesetz' lays the basis for a fundamental data framework (Bundesministeriums der Justiz und für Verbraucherschutz, 2017). This is mostly due to the growth in regulative power of the 'IT planning council', that is now able to determine these frameworks (Bundesministerium des Innern, 2017). This process is at its very beginning though, and a working interoperability has yet to be achieved within Germany. That means that the dimension of 'Achievement' is not met, while 'Reference', 'Scheduling' and 'Planning' can be seen as given. Due to the novelty of the approaches there are no further visions, such as European interoperability, or evaluation initiatives.

Dimension	Points
Achievement	0
Reference	2
Scheduling	2
Planning	2
Vision	0
Evaluation	0
Total	6

TABLE 5.7: Principle 6: Interoperability by Default – Germany

Principle 7: Trustworthiness and Security

The 'Onlinezugangsgesetz' mentions explicitly IT-security standards as well as data protection guidelines for the new central online portal (Bundesministeriums der Justiz und für Verbraucherschutz, 2017). Also, the 'Digitale Verwaltung 2020' strategy mentions security and trustworthiness several times, without describing tangible measures for the achievement. The privacy-by-design principle is not mentioned in the strategies and further measures that go beyond legal compliance, as mentioned by the EU action plan, are not distinctly laid out. This results in the following dimension rating:

Dimension	Points
Achievement	0
Reference	2
Scheduling	2
Planning	2
Vision	0
Evaluation	0
Total	6

TABLE 5.8: Principle 7: Trustworthiness and Security – Germany

Result

All in all, the application of the 'eGovernment Action Plan 2016-2020' by the strategies and policies of Germany is rated with a point score of:

$$6 + 6 + 11 + 2 + 4 + 6 + 6 = 41$$

This results in an implementation rate of **53 %**.

5.2.3 The United Kingdom

The central strategies in the UK, as explained in Subsection 4.1.2, were published in much more stringent succession than in Germany. Certainly though, the 'Brexit' puts the comparison of the national strategies with the EU action plan in a very special light.

Principle 1: Digital by Default

The first hint pointing in the direction of the UK having implemented this principle can be found in the name of the first real eGovernment strategy from the year 2010 – 'Digital by Default' (Gov.uk, 2010). This name being a claim in 2010 quickly became the driving policy factor with regards to eGovernment in the 2012 'Government Digital Strategy'. It resulted in the development of the 'one-stop-shop' platform 'gov.uk' and the redesign and rethinking of the delivery of public services for businesses and citizens (Gov.uk, 2017). The following 'Government Transformation Strategy' aims to continue this process and also includes the transformation of internal structures and procedures while having already established a continuous evaluation system.

Because of this stringent strategy layout all dimensions for fulfilling this principle are met.

Dimension	Points
Achievement	3
Reference	2
Scheduling	2
Planning	2
Vision	1
Evaluation	1
Total	11

TABLE 5.9: Principle 1: Digital by Default – UK

Principle 2: Once-only Principle

Based on its central governmental online portal, the UK advanced in the implementation of this principle. Nevertheless, not all governmental institutions are yet part of the platform and data have to be entered more than once when dealing with different institutions. Therefore, in the most recent strategy the aim is stated to build a national data infrastructure of registers where data is held and used centrally across the whole government until 2020: "This alpha will then be tested with a wider set of departments, seeking an approach to collect data once and reuse it where appropriate elsewhere in government, for the purpose of improving specific services and outcomes for citizens" (Gov.uk, 2017, p. 69). This leads to the rating that the dimensions 'Reference', 'Scheduling' and 'Planning' are met. The dimension of 'Evaluation' is met based in the iterative development process that is established and consists of an evaluation phase. The groundwork for the dimension 'Achievement' are laid out but not yet put into effect and no vision beyond the fulfillment of the principle are stated.

Dimension	Points
Achievement	0
Reference	2
Scheduling	2
Planning	2
Vision	0
Evaluation	1
Total	7

TABLE 5.10: Principle 2: Once-only Principle – UK

Principle 3: Inclusiveness and Accessibility

In the 'Government Transformation Strategy' the objective to deliver services that are accessible to all users, regardless of ability, is stated (Gov.uk, 2017). But there are no measures defined how this would be achieved. Furthermore, on the existing central governmental platform there are no direct offerings to access the contents in easy speech or other languages. The principle of inclusiveness and accessibility is not considered enough in the realized services neither the most recent action plan. This results in the following rating:

Dimension	Points
Achievement	0
Reference	2
Scheduling	0
Planning	0
Vision	0
Evaluation	0
Total	2

TABLE 5.11: Principle 3: Inclusiveness and Accessibility – UK

Principle 4: Openness and Transparency

Until 2020, the governmental institutions in the UK want to "make it easier for citizens to view and, if necessary, correct data about them when using transactional public services" (Gov.uk, 2017, p. 50), which is an important factor of this principle as stated by the EU. Furthermore the objective is to "provide radical transparency to citizens about: how money is being spent; who is responsible for services, components and management of data; and how they can participate in democratic processes around those services" (Gov.uk, 2017, p. 44). Additionally, the promotion of open government solutions within the UK and worldwide builds a relevant part of the national strategies, while the inclusion of relevant stakeholders in the design process of new systems remains unclear.

Since the achievements are only visible in the open-data field, this dimension is not yet met. Nevertheless, the goals to provide "radical transparency" are very clear in the UK's eGovernment strategy. Therefore, the other dimensions are met.

Dimension	Points
Achievement	0
Reference	2
Scheduling	2
Planning	2
Vision	1
Evaluation	1
Total	8

TABLE 5.12: Principle 4: Openness and Transparency – UK

Principle 5: Cross-border by Default

This principle is by far the most problematic one to be measured for the case of the UK. Due to the 'Brexit' procedure the EU and its other member states are only mentioned with regards to the 'General Data Protection Regulation' in the 'Government Transformation Strategy'. This means that the availability of public services for citizens of other member states is no longer a goal of the United Kingdom. Nevertheless, the code of the central governmental platform is made available for other governments worldwide (Gov.uk, 2017).

For the rating of the dimensions it can be said that the dimensions of 'Achievement', 'Reference', 'Scheduling' and 'Planning' are, with regards to the EU's principle, not met. But the dimensions of 'Vision' and 'Evaluation', are met, because the UK states a vision of worldwide cross-border usage which it evaluates constantly.

Dimension	Points
Achievement	0
Reference	0
Scheduling	0
Planning	0
Vision	1
Evaluation	1
Total	2

TABLE 5.13: Principle 5: Cross-border by Default – UK

Principle 6: Interoperability by Default

Due to the objective to develop a national data infrastructure of registers where data is held and used centrally across the whole government, the interoperability within the UK and its national administrations is clearly part of the national eGovernment strategy. The interoperability between member states of the EU though is not mentioned (Gov.uk, 2017). This means that the major point of the principle is referenced, scheduled and planned. Even though there are major achievements in the field of interoperability, the dimension of 'Achievement' is not met since it is not fully laid out in the UK. Also, there is no vision stated, that goes beyond the securing of interoperability within the UK. Nevertheless, the dimension of 'Evaluation' is, again due to the iterative, agile processes, secured.

Dimension	Points
Achievement	0
Reference	2
Scheduling	2
Planning	2
Vision	0
Evaluation	1
Total	7

TABLE 5.14: Principle 6: Interoperability by Default – UK

Principle 7: Trustworthiness and Security

The implementation of this principle is summarized in this quote from the 'Government Transformation Strategy': "As the National Cyber Security Strategy notes, cyber attacks are growing more frequent, sophisticated and damaging when they succeed. We must therefore ensure that we move forward in a way that is secure, deters criminal behaviour and which maintains our commitment to individuals' privacy" (Gov.uk, 2017, p. 5). Furthermore, the objectives go beyond the scope of the principle by stating that emerging technologies are examined before implementation for potential ethical and privacy implications. Since, also due to its open-source like approach, the UK's eGovernment systems already belong to the safest in the world, this leads to the highest rating regarding the implementation of this principle (Harrison et al., 2016).

Dimension	Points
Achievement	3
Reference	2
Scheduling	2
Planning	2
Vision	1
Evaluation	1
Total	11

TABLE 5.15: Principle 7: Trustworthiness and Security – UK

Result

To sum up the application of the 'eGovernment Action Plan 2016-2020' by the United Kingdom is rated with the following point score:

$$11 + 7 + 2 + 8 + 2 + 7 + 11 = 48$$

This results in an implementation rate of **62 %**. It can be assumed that the result would have been better without the political development of the 'Brexit' and the resulting renunciation of EU policies.

5.2.4 Estonia

The key political strategy in Estonia is the 'Digital Agenda 2020 for Estonia', as described in Subsection 4.1.3. The strategy is implemented through action plans, which specify measures and initiatives in short iterations. The evaluation of the strategy is mostly done through annual reports, which feature progress made in executing the action plans and thereby the strategy (Ministry of Economic Affairs and Communication, 2013).

Principle 1: Digital by Default

Being called "The Digital Republic" by the New Yorker, Estonia has already achieved the digitalization of nearly every bureaucratic process and service in the country

(Heller, 2017). Apart from transfers of physical property and the registration of marriage or divorce, everything can be done digitally by citizens and businesses. Furthermore, all services are centralized in the 'one-stop-shop' system 'eesti.ee'. With its e-residency program as the outstanding visionary initiative and the already described evaluation process, all dimensions of this principle are met. This is also underpinned by the statement in the strategy, that the "aspiration for Estonia is to become as re-known for its e-services as Switzerland is in the field of banking" (Ministry of Economic Affairs and Communication, 2013, p. 17).

Dimension	Points
Achievement	3
Reference	2
Scheduling	2
Planning	2
Vision	1
Evaluation	1
Total	11

TABLE 5.16: Principle 1: Digital by Default – Estonia

Principle 2: Once-only Principle

This principle has been one of the major guidelines in the development of Estonia's central online portal and remains that status since: "The public sector will organise its processes so as to ensure that citizens, entrepreneurs and public bodies will have to provide any information only once" (Ministry of Economic Affairs and Communication, 2013, p. 19). Even nowadays data only have to be entered once in the 'eesti.ee' portal and can be reused by authorized administrative bodies. Furthermore, this principle is extended to the neighboring country of Finland providing the possibility to reuse already entered information across borders. Thereby, the 'Once-only Principle' is implemented extensively and beyond the conditions in the 'eGovernment Action Plan 2016-2020'. This leads to the following rating:

Dimension	Points
Achievement	3
Reference	2
Scheduling	2
Planning	2
Vision	1
Evaluation	1
Total	11

TABLE 5.17: Principle 2: Once-only Principle – Estonia

Principle 3: Inclusiveness and Accessibility

The principle of 'Inclusiveness and Accessibility' is promoted throughout the eGovernment strategies of Estonia. For example, it is stated that, "user-friendliness and accessibility of user interfaces of public sector ICT-solutions and service channels

will be improved, including by the uptake of Estonian language applications to provide services based on voice-recognition" (Ministry of Economic Affairs and Communication, 2013, p. 33). Additionally, all services should be made usable for citizens of other EU member states by developing multilingual e-services.

Also, defined measures like the further development of platforms for inclusion and participation or the standardization of data searches are mentioned (Vassil, 2015). Nevertheless, these plans are not yet completed. For instance, the 'eesti.ee' portal is until today available in Estonian, English and Russian, but no further languages. Also, no easy speech version is accessible (Enterprise Estonia, 2018). Therefore, the dimension of 'Achievement' is not met, while all other dimensions are rated as met.

Dimension	Points
Achievement	0
Reference	2
Scheduling	2
Planning	2
Vision	1
Evaluation	1
Total	8

TABLE 5.18: Principle 3: Inclusiveness and Accessibility – Estonia

Principle 4: Openness and Transparency

The strategies of the development of its eGovernment services are created with the integration of stakeholders and the integration of results of public consultations. The results of these discussions and consultations can be monitored by citizens and other stakeholders at all times (Ministry of Economic Affairs and Communication, 2013).

Also, citizens and businesses can monitor the usage of their data by administrative bodies using the central portal. All usage of their data is documented using the 'Non-Repudiation' design principle (Heller, 2017). In addition to that, Estonia openly invites other countries and governments, especially within the EU, to reuse their systems or learn form their development. Thereby, they try to push their vision of expanding "the EU's familiar four freedoms — the unhindered movement of goods, services, capital and people across borders — to include a fifth: data" (The Economist, 2017).

Dimension	Points
Achievement	3
Reference	2
Scheduling	2
Planning	2
Vision	1
Evaluation	1
Total	11

TABLE 5.19: Principle 4: Openness and Transparency – Estonia

Principle 5: Cross-border by Default

As mentioned above, the aim to make Estonian services available to citizens of other
EU member states is described in Estonia's strategy (Ministry of Economic Affairs
and Communication, 2013). This is also illustrated by the ongoing cooperation with
Finland. Furthermore, with its e-residency program everyone has the opportunity to
become a digital resident of Estonia and access major public services, even without
ever being in Estonia (Heller, 2017). Therefore, all dimensions of this principle are
met.

Dimension	Points
Achievement	3
Reference	2
Scheduling	2
Planning	2
Vision	1
Evaluation	1
Total	11

TABLE 5.20: Principle 5: Cross-border by Default – Estonia

Principle 6: Interoperability by Default

The governmental digital services in Estonia have been developed based on the Es-
tonian interoperability framework, which is continuously updated and evaluated
(Ministry of Economic Affairs and Communication, 2013). Furthermore, different
co-operation models and methods are developed, that support the common service
space: "For example, legal and organisational problems related to the common use
of the service space will be analysed, and relevant (pilot) projects will be initiated"
(Ministry of Economic Affairs and Communication, 2013, p. 26). Further initiatives
include the inclusion of private businesses, so that they become aware of the state in-
formation system and thereby strengthen their skills to use it. This led to businesses
using the Estonian interoperability framework as well as central functions of public
online services for their own products or services (Vassil, 2015).

Together with the already explained interoperability approaches on the international
level this leads to the following rating:

Dimension	Points
Achievement	3
Reference	2
Scheduling	2
Planning	2
Vision	1
Evaluation	1
Total	11

TABLE 5.21: Principle 6: Interoperability by Default – Estonia

Principle 7: Trustworthiness and Security

In its strategy Estonia claims to have cultivated a "widely shared appreciation of the
importance of security" (Ministry of Economic Affairs and Communication, 2013, p.

16). This claim is undermined by the architecture of the central state portal, which is a decentralized, distributed system. Since 2012, the backbone of Estonia's digital security is a blockchain technology, called K.S.I., which builds the foundation of the connecting basic system 'X-Road' as illustrated in Figure 5.1 (Vassil, 2015).

This security system is not only used by the public sector, but, similar to the interoperability framework, also by banks, telecommunication providers and other private sector institutions. In addition to that, the central identification system uses two-factor authentication to avoid misuses. In general, the Estonian security systems use up-to-date measures and architectures to offer highest security standards while also claiming: "The mitigation of non-acceptable risks in information and communication systems will be guaranteed and security requirements will be taken into account when designing the systems and throughout their life cycle" (Ministry of Economic Affairs and Communication, 2013, p. 19).
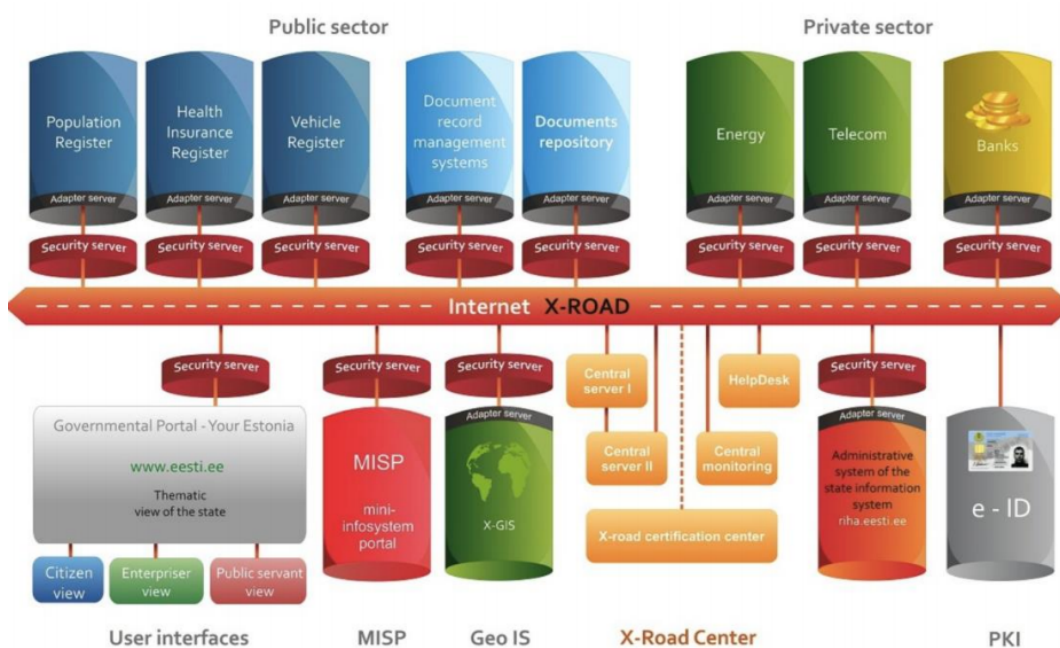
FIGURE 5.1: A schematic of Estonia's X-Road data exchange. (Vassil, 2015)

Based on these findings, this principle will also be rated with the highest score.

Dimension	Points
Achievement	3
Reference	2
Scheduling	2
Planning	2
Vision	1
Evaluation	1
Total	11

TABLE 5.22: Principle 7: Trustworthiness and Security – Estonia

Result

To sum up, the application of the 'eGovernment Action Plan 2016-2020' by Estonia is rated with the following point score:

$$11 + 11 + 8 + 11 + 11 + 11 + 11 = 74$$

This results in an implementation rate of **96 %** with points only missed in the 'Achievement' dimension of the 'Inclusiveness and Accessibility' principle.

5.3   Outcomes

In summary, the analysis of the implementation of the EU 'eGovernment Action Plan 2016-2020' into national strategies by Germany, the United Kingdom and Estonia delivered the result that Germany implemented 53 % of the plan, the UK 62 % and Estonia 96 % (see Figure 5.23).

Principle	GER	UK	EE
Digital by Default	6	11	11
Once-only Principle	6	7	11
Inclusiveness and Accessibility	11	2	8
Openness and Transparency	2	8	11
Cross-border by Default	4	2	11
Interoperability by Default	6	7	11
Trustworthiness and Security	6	11	11
Overall Points	**41**	**48**	**74**
Overall Degree	**53 %**	**62 %**	**96 %**

TABLE 5.23: Results

In general, it can be said that the efforts of a coordinated eGovernment approach in Germany just recently kick-started due to new legislation. Before that, the polity of the federal state lead to cluttered island-solutions lacking a comprehensive approach.

The UK, though, is a completely different case. While they follow a clear strategy and got the full score for the 'Digital by Default' principle, they particularly missed points at the cross-border interoperability, which can at least partially be explained by the 'Brexit' process and the resulting procedures of cutting ties with other EU member states. Additionally, the efforts for inclusiveness and accessibility are far behind the European standard.

Estonia's reputation of being one of the digital model states worldwide was confirmed once more. Except for the 'Inclusiveness and Accessibility' principle, they are ahead of the conditions proclaimed by the EU and substantiate their leading role in digitalization in the EU. This is in line with their main emphasis during their presidency of the council last year, where Estonia made the impetus of digitalization in the EU their main task.

Chapter 6

Validating the Research Method

The previous analysis of the different implementation by the EU policy regarding eGovernment into national strategies was done using a comparative method approach based on a MSSD design, as explained in Section 5.1. Since the rating method and hence the factorization of the different strategies was developed for this thesis, it would be desirable to further test this system. Some approaches to deliver this test are described in the first part of this chapter.

Additionally, there are several ways to validate the results of the analysis through other research methods. Possible approaches to deliver this validation are explained in the second part of this chapter.

6.1 Testing the Rating Method

The method of rating the implementation of the seven principles of the 'eGovernment Action Plan 2016-2020' by the European Union into national strategies by applying six dimensions to each principle was developed exclusively for this master thesis. Hence, this rating method has not been used before.

To test the validity and reliability of the method several possibilities can be applied.

A first step would be to carry out the analysis for all other member states of the EU to test if possible obstacles appear during the examination of other strategies.

Since the policies regarding eGovernment are not yet examined in recent research, it is unfortunately not possible to compare the rating method to other methods in the field of eGovernment. Nevertheless, it would be possible to apply the rating method to other political strategies, preferably in a field where similar ratings have been used. Thereby, the congruence of the results of different rating methods could be defined and possible strengths and weaknesses explored.

6.2 Validating Results through Other Research Methods

Next to the used rating method the validity and reliability of results of the analysis could be tested by applying other research methods. This is particularly interesting since the comparative method used in this thesis can only, as described in Section 5.1, be seen as a starting point for further research.

One option would be to use methods previously used in eGovernment related research. The empirical approach used by Lindgren and Melin seems to be especially useful since it gathers its results from the policy makers itself (Lindgren and Melin, 2017). This qualitative approach could be done by interviewing the responsible parts of administrations as well as policy makers to examine the grade of implementation.

Another approach would be to quantitatively research these parts of administrations and policy makers by using questionnaires to gather data, that determines in how far the EU strategy affected the policy-making on the national level.

Staying in the field of comparative methods, it would be fruitful to compare the cases used in this thesis from the perspective of other research fields. For example, a comparison based on linguistics could validate the results. Due to its nature, political strategies are always written documents that largely rely on the use of speech and formulation.

All of these possible validation methods require notably higher efforts in resources, but would nevertheless deliver valuable insights not only in the implementation of eGovernment principles but also the impact of EU policies on the national level in general.

Chapter 7

Connection to Quantitative Data

This study of the different national eGovernment strategies and the 'eGovernment Action Plan 2016-2020' by the European Union and the rating of its implementation is not the first scientific approach to rate eGovernment in the EU: "As public e-services initiatives continue to gain global momentum, diffusion indexes, measures and benchmark studies are rapidly expanding" (Seri, Bianchi, and Matteucci, 2014, p. 496). This is also valid for the EU. Admittedly the "evidence about their availability, usage and broad consequences is still quite scattered and often contrasting" (Seri, Bianchi, and Matteucci, 2014, p. 496). Therefore, the connection and comparison of different approaches and findings proves to be a crucial element in the ever evolving field of eGovernment research.

But, most importantly, the connection of the results of this thesis with outcomes of quantitative studies is vital to answering the postulated research question: Are there differences in the application of the eGovernment Action Plan 2016-2020 by the European Commission into national strategies and can they function as an explanation of differences in the use of digital services in EU member states by the public?

Two studies are used to do this. Firstly the 'eGovernment Benchmark 2017 – Taking stock of user-centric design and delivery of digital public services in Europe' (European Commission, 2017c) by the European Commission delivers detailed figures about the eGovernment approaches of every single member state of the Union as well as results about the penetration of the services within the public.

Secondly the 'Digital Government Barometer: The Digitalisation of the public services in four European Countries' (Ipsos, 2017), carried out by the private market research institute IPSOS, reveals valuable figures about the public perception of eGovernment services and its usage within four European countries.

By comparing the results of this thesis with these two studies, the aim of defining the meaningfulness of the policy comparison will be carried out.

7.1   eGovernment Benchmark 2017

The 'eGovernment Benchmark 2017 – Taking stock of user-centric design and delivery of digital public services in Europe' (European Commission, 2017c) is carried out every year by private market research institutes on behalf of the EC. The goal is to identify the realization of eGovernment measures and the usage within the publics of the EU's member states. The benchmark thereby "sheds light onto the state-of-

play of the digital transformation of European public administrations and the extent to which they are 'on track'" (European Commission, 2017c, p. 11).

The method mostly used in this benchmarking is 'Mystery Shopping'. As explained in the benchmark report, a "Mystery Shopper is trained and briefed to observe, experience, and measure a given public service process. Mystery Shoppers act as prospective users and follow a detailed, objective evaluation checklist. Mystery Shopping was the method of choice for the assessment of all top-level benchmarks under review this year" (European Commission, 2017c, p. 23).

Using this method, the report focused on four central top-level benchmarks. These are 'User-Centricity', 'Transparency', 'Cross-border Mobility' and 'Key Enablers'. These are then applied to certain defined life events like business operations, moving or owning and driving a car.

The key findings of the benchmark process are, among others, that 82 % of public services are provided by European public administrations while the delivery for businesses is overall more advanced than the delivery for private services. Also, advancements in the fields of transparency and cross-border mobility are not as fast as it would be desirable (European Commission, 2017c).

Next to the detailed report of the benchmark, the insights are additionally summed up in factsheets for each EU member state (European Commission, 2017b). These factsheets are of special importance to this thesis since they provide the necessary data for the comparison with the here present results. One of the key figures of these sheets is the indicator 'Penetration', which is described as the "extent to which use of the online channel is widespread among users of government services" (European Commission, 2017c, p. 109). This is especially important since the offering of public online services is only reasonable if they are needed and used by citizens. The other highly relevant indicator is the 'Digitisation' index. This is a "proxy for the Digitisation level of the back- and front- office" (European Commission, 2017c, p. 110). Since this indicator is based on the four top-level benchmarks, it describes the general advancements in the digitalization of public administrations.

With regards to the countries that were examined in this study, the results in the eGovernment Benchmark 2017 are as follows:

Performance		
	Penetration	Digitisation
EU 28	52%	65%
DE	33%	75%

FIGURE 7.1: Performance Germany (European Commission, 2017b)

Performance		
	Penetration	Digitisation
EU 28	52%	65%
UK	70%	56%

FIGURE 7.2: Performance UK (European Commission, 2017b)

Performance		
	Penetration	**Digitisation**
EU 28	52%	65%
EE	84%	83%

FIGURE 7.3: Performance Estonia (European Commission, 2017b)

It can be seen that the citizens of the UK and Estonia, with penetration rates of 70 % and 84 %, are using public online services to a much larger extent than the German public (33 %). The EU average rate is given by 52 %. With regards to the 'Digitisation' indicator Germany got rated with 75 %, the UK with 56 % and Estonia with 83 % while the EU average lays at 65 % (see Figures 7.1, 7.2 and 7.3).

These results were then put in context with the other EU member states (see Figure 7.4). Furthermore, the countries are classified. Germany situates in the class of 'Expendable eGovernment'. This means that digital innovations are being carried out while the usage of services remains rather low. The United Kingdom is placed in the class of 'Unexploited eGovernment'. In this case the government is still in an ongoing digitisation process, while a comparably high number of citizens is using eGovernment services. Estonia, however, is situated in the class of 'fruitful eGovernment', which indicates a very successful innovation and digitalization process. In fact, Estonia is described as "the only country outperforming in both Digitisation and Penetration" (European Commission, 2017c).
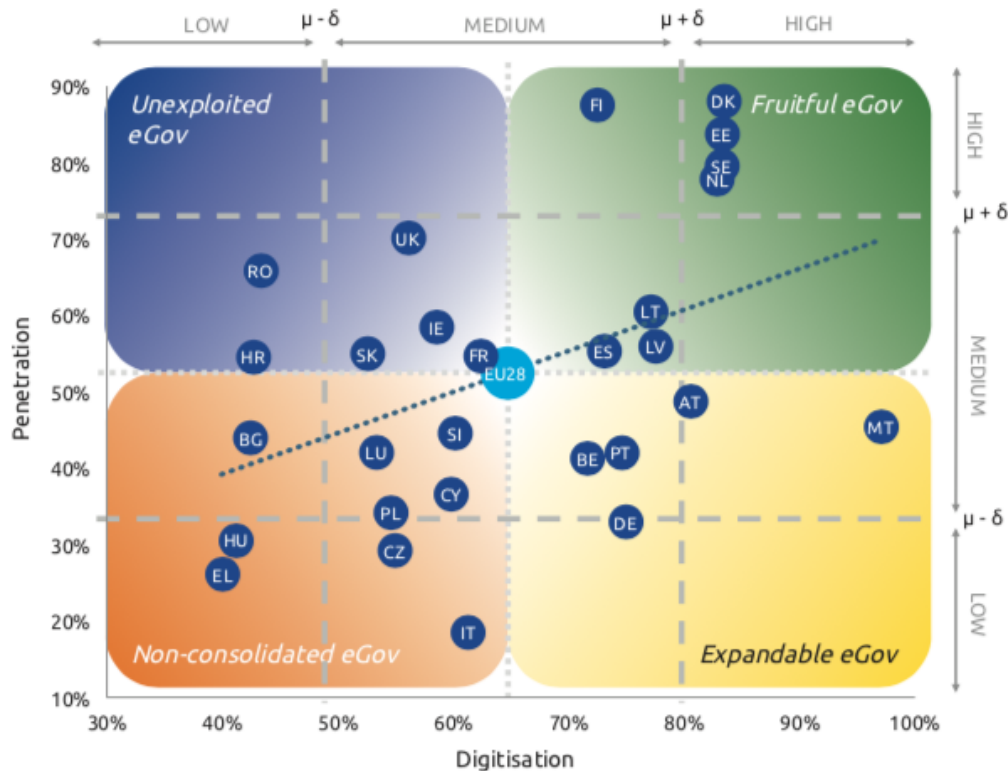
FIGURE 7.4: Digitisation vs. Penetration (European Commission, 2017c)

In relation to the findings of this study, it can be stated that Estonia is standing out in its eGovernment related policy-making as demonstrated in this analysis (96 %). Germany (53 %) and the UK (62 %) got lower results in this thesis and also were not ranked in the best class in the benchmark. Nevertheless, they got situated in different classes and received results that are not completely in line with the policy analysis. For example, the digitalization rate of Germany is comparably high in the benchmark study, while the policy analysis here would have defined that differently.

To further examine this difference the next study will be compared with these results.

7.2   Digital Government Barometer

The 'Digital Government Barometer: The Digitalisation of the public services in four European Countries' (Ipsos, 2017) is carried out annually by the market research institute IPSOS on behalf of Sopra Steria, a digital transformation consulting firm from Germany. The latest report was published in December 2017 and included the countries Germany, the United Kingdom, France and Norway.

For the study, 4001 respondents in the four countries were interviewed via the IPSOS online access panel. Since the report was prepared in compliance with the international standard ISO 20252 'Market, opinion and social research', it can be classified as a representative, quantitative study. With regards to the methodology the quota sampling included: gender, age, profession of the respondent, region and market-size (Ipsos, 2017).

The focus of this study is to identify the attitudes of the public towards the efforts of the four governments to develop eGovernment services. Furthermore, the usage of these public online services and the wishes of the public regarding the design and usability of the services are explored.

Notably Estonia, as one of the cases in this master thesis, is not part of this public survey. Because the results for Estonia in the here presented policy analysis and the benchmarking in the chapter before are very congruent, the barometer study was nonetheless chosen for this thesis. This is because of the relevance of the findings for the other two cases, Germany and the UK. The results for these two EU member states in the policy analysis and the benchmarking were not as congruent as the results for Estonia. Therefore more data for these two cases is needed to sufficiently answer the research question of this thesis.

The first highly relevant insight of the barometer is determining the frequency of use of online public services (see Figure 7.5). Here, it can be seen that the use of these services in Germany has dropped since 2016. Only 31 % of the surveyed are using online public services several times a year. In the UK, this figure increased hugely to a subtotal of 52 %, which means a rise of 22 %. It can be stated accordingly that the use of eGovernment services in the UK is notably larger than in Germany (21 % difference).
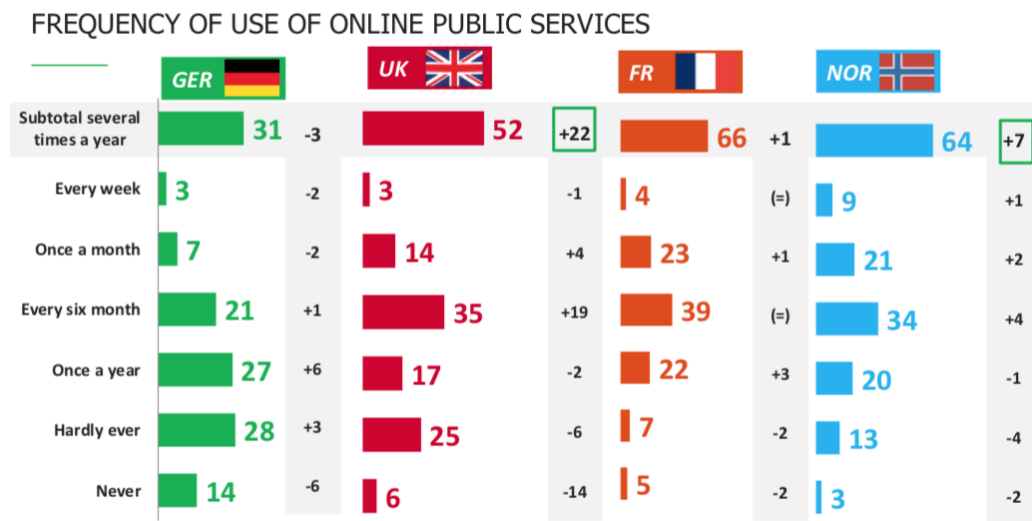
FREQUENCY OF USE OF ONLINE PUBLIC SERVICES

	GER		UK		FR		NOR	
Subtotal several times a year	31	-3	52	+22	66	+1	64	+7
Every week	3	-2	3	-1	4	(=)	9	+1
Once a month	7	-2	14	+4	23	+1	21	+2
Every six month	21	+1	35	+19	39	(=)	34	+4
Once a year	27	+6	17	-2	22	+3	20	-1
Hardly ever	28	+3	25	-6	7	-2	13	-4
Never	14	-6	6	-14	5	-2	3	-2

FIGURE 7.5: Frequency of Use of Online Public Services (Ipsos, 2017)

Another insight that proves to be valuable for the connection of the datasets is the examination of the public opinion on the development of eGovernment services in the respective countries (see Figure 7.6). In Germany, 56 % of the surveyed have the impression that the amount of digital public services provided by public administrations has increased. In the UK 83 % have that feeling. Moreover, 43 % of the Germans are thinking that these services are increasingly easy to use, while 66 % of the citizens of the UK have this impression. This means that the satisfaction with the development of digital services by the public sector is perceptibly higher in the UK compared to Germany.

GER

56%
public sector has increased the number of digital public services

43%
the digital tools and services are increasingly easy to use

UK

83%
public sector has increased the number of digital public services

66%
the digital tools and services are increasingly easy to use
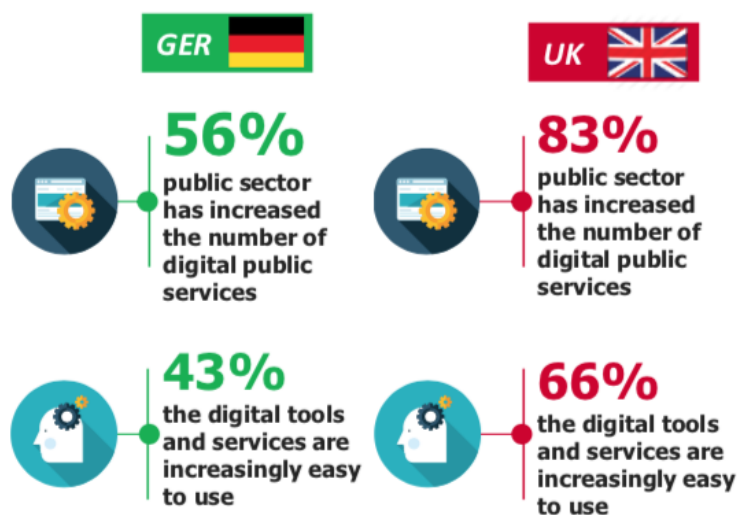
FIGURE 7.6: Public Opinion on eGovernment Development (Ipsos, 2017)

The satisfaction rates with the online services that are already available are another relevant insight of the barometer study. The question, if the available services meet the needs of the users, is generally confirmed by 43 % of the surveyed Germans and

79 % of the public in the UK (see Figure 7.7). This reveals that the public in the UK is nearly twice as satisfied with the public online services that are available up to date compared to the citizens of Germany.
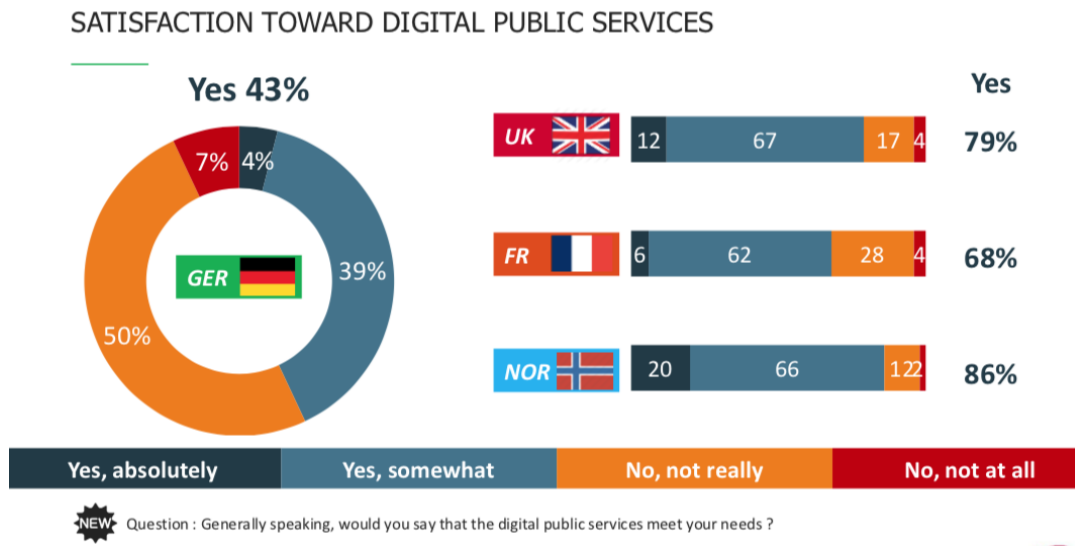
FIGURE 7.7: Satisfaction toward Digital Public Services (Ipsos, 2017)

In general, it can be said that the citizens of the UK and Germany rate the available services and the development of eGovernment services in their respective countries differently with the UK performing relevantly better than Germany. In accordance with these results, the usage of online public services is noticeably lower in Germany.

These results of the barometer study are mostly in line with the findings of the policy analysis. The differences in the usage and impression of eGovernment service between Germany and the UK are bigger than the difference of the implication rates of the EU eGovernment plan (53 % vs. 62 %). This my be explained by the fact that the barometer study examined the current status of eGovernment solutions while the policy analysis examined the current status of policy plans for the near future. Therefore, the lower difference between the two countries in the policy analysis might indicate a convergence of user perception in the future.

7.3 Derivations for the Research Question

With regard to the research question of this thesis, the connection of the results of the policy analysis with the two studies proved to be highly fruitful. It can be stated that the general tendencies are the same for all three studies. The research question can accordingly be answered by the following statement:

> *There are differences in the application of the 'eGovernment Action Plan 2016-2020' by the European Commission into national strategies and they can at least partially and especially predictively function as an explanation of differences in the use of digital services in EU member states by the public.*

The role of Estonia as a frontrunner in eGovernment development got cemented both for its policies as well as through the benchmarking of the current status. The

impression of the Estonian citizens was not put into account, nevertheless the usage rates explained in Subsection 4.1.3 hint to a wide acceptance of the online public services.

For Germany, the usage and perception of its services by the public are in line with its implications of the EU plan. Nevertheless the high 'Digitisation' rate in the benchmark and the current new legislation processes show that the high potential could possibly be unveiled in the near future and subsequently lead to higher usage rates.

The UK impresses with high usage rates and reviews by its citizens. The rating of the implementation of the EU plan into its national eGovernment policies as well as the EU benchmarking show slightly lower ratings. The obvious reason for this would be that especially the cross-border principles, which were part of both of these analyzes, got low ratings due to the 'Brexit' procedures. The detailed reason could be part of further research.

A detailed discussion of all these findings as well as the final conclusion are part of the next and final chapter of this thesis.

Chapter 8

Discussion, Outlook and Conclusion

This chapter provides the discussion of the findings of this thesis. Furthermore an outlook on possible future research as well as future eGovernment developments in the EU is given. Finally, a conclusion summarizes this master thesis.

8.1   Discussion

The 'eGovernment Action Plan 2016-2020' is generally seen as a step in the right direction for the development of eGovernment within the European Union. Nevertheless, relevant stakeholders, like the 'Digital Champions', keep on pointing out that the implementation of the plan by the member states is key to the success of the action plan (European Commission, 2016a). It gets obvious that the adaption of the plan is a necessary step for achieving the goals of unifying the eGovernment systems and provide every citizen in the EU with flawless and borderless digital services.

If the member states implement the seven principles of the action plan by the EC into its national policies, the first step of developing a congruent, usable and interoperable eGovernment system is reached. This is supported by the findings of this thesis. The implementation rates of Germany (53 %), the UK (62 %) and Estonia (96 %) are showing results that are mainly in line with the EU benchmarking of the existing systems and the Digital Barometer.

In terms of a development process, the examination of political strategies is located at the first stage of this process. The EU benchmarking can be seen as a second stage evaluation and the Digital Barometer as the third and last stage:

1. Policies, strategies and action plans.

2. Systems in development and existing systems.

3. Evaluation and user feedback of existing systems.

Therefore, the implementation rates of the 'eGovernment Action Plan 2016-2020' into national strategies can be seen as an indicator for the future development of eGovernment systems. This explains why the UK ranks very good in the barometer study, but only got a medium-high rating in the benchmarking and the policy implementation rate. Since the existing system is accepted by the users and far progressed, the political plans for the future development are not meeting the principles of 'Cross-border by Default' and 'Interoperability by Default'. Presumably, this has

to be explained with the 'Brexit' process leading to a shift in priorities in the UK. The creation of a union-wide, borderless system is no longer a relevant objective.

The public satisfaction with the current eGovernment systems in Germany is rather problematic. This is in line with the political situation until the end of the year 2017. Cluttered policies and plans, mostly on the county-level, led to an equivalent eGovernment system. But there is good reason for the expectation of improvement. Both the EU benchmarking and the implementation rate of the EU action plan are showing that Germany is slowly but surely going in the right direction. With the new 'Onlinezugangsgesetz' the groundwork for a successful eGovernment development is now given. It can be expected, that the indicators, including the usage rates, for Germany will keep on rising.

Estonia can be seen as one of the frontrunners of eGovernment in Europe and worldwide. Its solutions can act as a best practice example and guideline for other EU member states. It has to be seen, though, how willing Estonia is to support slower developing states in the EU, which could mean to wait with certain developments or change already existing systems due to new interoperability guidelines.

In general, it can be said, that the implementation rate can be used as a key indicator of eGovernment development. It describes the very first step of the realization of eGovernment developments and can, thereby, act as a prognosis of the near future. Because of this, the implementation rate might be a valid score for benchmarking with regards to policy and, thereby, enhance the benchmarking reports of the EU. With this indicator officials would have a holistic view on the development of these systems and would be able to monitor and adjust them earlier in the process.

8.2   Outlook

Due to the characteristic of this thesis as a comparative digital policy study and the limited resources available, it can only function as a first step with much room for further research. A necessary next step would be the analysis of the implementation rates of the 'eGovernment Action Plan 2016-2020' by all other member states. Additionally, these rates must constantly be adjusted to keep up with the political development in the EU and the member states and especially new eGovernment policies.

Furthermore, the validation of the implementation rate indicator by other, preferably experimental or statistical, research methods is a necessary next step. This would further validate the implementation rate indicator and also prove its reliability. A comparison with other policy analyzes would be useful as well.

It can be expected, that the amount of research in the field of eGovernment will keep growing. In the EU and worldwide more and more effort and resources are spent in this area, which increases the need for valid evaluation and benchmarking methods: "A specific focus on Europe is still in urgent need, in the face of the extensive efforts paid by EU institutions to promote e-services development and their benchmarking" (Seri, Bianchi, and Matteucci, 2014, p. 496).

Due to the importance of eGovernment systems, not only for citizens but also for (potential) businesses, it can also be expected that the efforts by the Union will keep

expanding. To reach the long-term goal of a 'Digital Single Market', it seems possible that Estonia's proposal to "expand the EU's familiar four freedoms — the unhindered movement of goods, services, capital and people across borders — to include a fifth: data (The Economist, 2017), could become part of the EU wide political agenda soon.

All in all, it can be stated that eGovernment will influence the lives of every citizen in the EU and worldwide more and more in the future. Therefore, the need for sophisticated research of the political plans, the developed systems and its usage will continue to thrive.

8.3 Conclusion

This master thesis analyzed if there are differences in the implementation of the 'eGovernment Action Plan 2016-2020' by the European Union into national strategies and if these differences can be used to explain different usage rate of public online services in the member states. To answer this, the three national strategies of Germany, the United Kingdom and Estonia were analyzed. To do so, an implementation rate indicator containing of six dimensions (Reference, Scheduling, Achievements, Planning, Vision, Evaluation) was developed. This indicator was then applied to the seven key principles of the action plan by the EU. These principles are:

- Digital by Default

- Once-only Principle

- Inclusiveness and Accessibility

- Openness and Transparency

- Cross-border by Default

- Interoperability by Default

- Trustworthiness and Security

The analyzes resulted in the following scores: Germany (53 %), the UK (62 %) and Estonia (96 %).

These implementation rates were then compared to the results of the 'eGovernment Benchmark 2017 – Taking stock of user-centric design and delivery of digital public services in Europe' (European Commission, 2017c), which evaluates the current state of eGovernment development in the EU member states and the 'Digital Government Barometer: The Digitalisation of the public services in four European Countries' (Ipsos, 2017), which examines the public reception of eGovernment services by the citizens.

This resulted in the recognition that the results of the presented analysis are mainly in line with the findings of the two mentioned studies. But, while these aim at later stages of the development process of eGovernment solutions, the implementation rate allows the rating of the political application of the EU policy and, thereby, the first step in the process. Thus, the implementation rates of the 'eGovernment Action Plan 2016-2020' into national strategies can be seen as an indicator for the future development of eGovernment systems. The method can, hence, prove to be a highly valuable further asset in the benchmarking and monitoring procedures of the EU.

This could be especially valuable for the future since the development of eGovernment systems will most likely gain more and more momentum. "We're about to go into a very interesting time where a lot of governments can become virtual" (Heller, 2017) says Tim Draper, a venture capitalist at the Silicon Valley firm 'Draper Fisher Jurvetson' and one of Estonia's leading tech boosters. This shows that eGovernment, as we understand it today, is only an intermediate step towards a possible future where "it is possible to imagine a future in which nationality is determined not so much by where you live as by what you log on to" (Heller, 2017). Estonia's eCitizenship program indicates how this future could look like.

With these future developments in mind, it gets clear why eGovernment is, not only, a nice-to-have service for the 'Generation Y'. The EU has to constantly rethink and reframe their eGovernment policies and push their member states to implement them. Without ambitious policies the status of the EU as one of the best places to live and invest worldwide will fissurize.

Also, it will not be enough just to provide political guidelines. Marten Kaevats, Estonia's national digital adviser, states that "there also needs to be a vision from the political side. It needs to be there always – a policy, not politics. But the politicians need to live it, because, in today's world, everything will be public at some point" (Heller, 2017).

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List of Abbreviations

COREPER	Committee of Permanent Representatives in the European Union
EC	**E**uropean **C**ommission
EIF	**E**uropean **I**nteroperability **F**ramework
EU	**E**uropean **U**nion
FITKO	**F**ederal **IT CO**operation
DSM	**D**igital **S**ingle **M**arket
MSSD	**M**ost **S**imilar **S**ystems **D**esign
UK	**U**nited **K**ingdom

Bibliography

Arduini, Davide and Antonello Zanfei (2014). "An overview of scholarly research on public e-services? A meta-analysis of the literature." In: *Telecommunications Policy* 38, pp. 476–495. URL: `https://doi.org/10.1016/j.telpol.2013.10.007`.

Arzheimer, Kai (2014). *Decision/Policy Making in the European Union*. Last accessed 9 June 2018. URL: `http://www.kai-arzheimer.com/Political-Integration-EU/eu-6.pdf`.

Bundesministerium des Innern (2013). *Act to promote electronic government*. Last accessed 21 May 2018. URL: `https://www.bmi.bund.de/SharedDocs/downloads/EN/news/egovernment.pdf?__blob=publicationFile&v=1`.

– (2014). *Digitale Verwaltung 2020*. Last accessed 1 April 2018. URL: `https://www.verwaltung-innovativ.de/SharedDocs/Publikationen/Pressemitteilungen/programmdokument_div.pdf;jsessionid=65559924F108068AF25BD83A80D988CA.1_cid340?__blob=publicationFile&v=5`.

– (2017). *Portalverbund digitaler Verwaltungsdienstleistungen: einfach, schnell und sicher*. Last accessed 20 May 2018. URL: `https://www.bmi.bund.de/DE/themen/moderne-verwaltung/verwaltungsmodernisierung/portalverbund/portalverbund-node.html`.

Bundesministeriums der Justiz und für Verbraucherschutz (2017). *Gesetz zur Verbesserung des Onlinezugangs zu Verwaltungsleistungen (Onlinezugangsgesetz - OZG)*. Last accessed 16 July 2018. URL: `https://www.gesetze-im-internet.de/ozg/OZG.pdf`.

Cano Carrillo, Jesus, Carlos E. Jimenez-Gomez, and Francisco Falcone (2017). "Investigating a two headed monster: e-government: crossing over from electronic era to digital revolution". In: *SIGCAS Comput. Soc.* 46, pp. 12–17. URL: `https://doi.org/10.1145/3040489.3040492`.

Collier, David (1993). "The Comparative Method". In: *Political Science: The State of the Discipline II*, pp. 105–119.

Commission of Experts for Research and Innovation (2016). *E-government in Germany: much room for improvement*. Last accessed 20 May 2018. URL: `https://www.e-fi.de/fileadmin/Chapter_2016/2016_B4_EN.pdf`.

Council of Europe (2017). *The European Union - Facts and Figures*. 5th edition.

De Vriendt, Karel (2016). *Some thoughts about the Commission's eGovernment Action Plan 2016-2020*. Last accessed 8 May 2018. URL: `http://www.openforumeurope.org/thoughts-commissions-egovernment-action-plan-2016-2020/`.

Enterprise Estonia (2018). *e-estonia*. Last accessed 15 May 2018. URL: `https://e-estonia.com/solutions/e-governance/`.

EU2017.EE (2017). *Conclusions of the Prime Minister of Estonia Jüri Ratas after the Tallinn Digital Summit*. Last accessed 28 July 2018. URL: `https://www.eu2017.ee/sites/default/files/inline-files/TallinnDigitalSummit_Conclusions_0.pdf`.

European Commission (2000). *eEurope 2002*. Last accessed 26 April 2018. URL: `https://eur-lex.europa.eu/legal-content/DE/TXT/?uri=LEGISSUM%3Al24226a`.

– (2002). *eEurope 2005*. Last accessed 26 April 2018. URL: `https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=LEGISSUM%3Al24226`.

European Commission (2006). *i2010 eGovernment Action Plan: Accelerating eGovernment in Europe for the Benefit of All*. Last accessed 26 April 2018. URL: `http://eur-lex.europa.eu/legal-content/LVN/TXT/?uri=celex:52006DC0173`.

– (2009). *Ministerial Declaration on eGovernment - the Malmö Declaration*. Last accessed 26 April 2018. URL: `https://ec.europa.eu/digital-single-market/sites/digital-agenda/files/ministerial-declaration-on-egovernment-malmo.pdf`.

– (2010). *The European eGovernment Action Plan 2011-2015*. Last accessed 26 April 2018. URL: `http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2010:0743:FIN:EN:PDF`.

– (2014a). *Digital Agenda for Europe*. Last accessed 1 April 2018. URL: `http://eige.europa.eu/resources/digital_agenda_en.pdf`.

– (2014b). *Mid-term evaluation of the eGovernment action plan*. Last accessed 30 April 2018. URL: `https://ec.europa.eu/futurium/en/system/files/ged/studyforthemid-termevaluationoftheegovernmentactionplan2011-2015implementation.pdf`.

– (2015a). *Public consultation: eGovernment Action Plan 2016-2020*. Last accessed 27 April 2018. URL: `https://ec.europa.eu/eusurvey/runner/eGovernmentSurvey2015`.

– (2015b). *Roadmap: eGovernment Action Plan 2016-2020*. Last accessed 27 April 2018. URL: `http://ec.europa.eu/smart-regulation/roadmaps/docs/2016_cnect_006_e_government_action_plan_en.pdf`.

– (2016a). *Digital Champions Bratislava statement on eGovernment*. Last accessed 8 May 2018. URL: `https://ec.europa.eu/digital-single-market/en/news/digital-champions-bratislava-statement-egovernment`.

– (2016b). *EU eGovernment Action Plan 2016-2020 - Accelerating the digital transformation of government*. Last accessed 1 April 2018. URL: `https://ec.europa.eu/digital-single-market/en/news/communication-eu-egovernment-action-plan-2016-2020-accelerating-digital-transformation`.

– (2016c). *Press Release: Commission sets out path to digitise European industry*. Last accessed 27 April 2018. URL: `http://europa.eu/rapid/press-release_IP-16-1407_en.pdf`.

– (2016d). *Report on the public consultation and other consultation activities of the European Commission for the preparation of the EU eGovernment Action Plan 2016-2020*. Last accessed 27 April 2018. URL: `http://ec.europa.eu/newsroom/dae/document.cfm?doc_id=15190`.

– (2017a). *Digital Single Market – Mid-term Review*. Last accessed 8 May 2018. URL: `http://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1496330315823&uri=CELEX:52017DC0228`.

– (2017b). *eGovernment Benchmark 2017 - Country Factsheets*. Last accessed 25 April 2018. URL: `http://ec.europa.eu/newsroom/dae/document.cfm?doc_id=48586`.

– (2017c). *eGovernment Benchmark 2017 – Taking stock of user-centric design and delivery of digital public services in Europe*. Last accessed 25 April 2018. URL: `http://ec.europa.eu/newsroom/dae/document.cfm?doc_id=48587`.

– (2017d). *Ministerial Declaration on eGovernment - the Tallinn Declaration*. Last accessed 1 April 2018. URL: `https://ec.europa.eu/digital-single-market/en/news/ministerial-declaration-egovernment-tallinn-declaration`.

– (2017e). *New European Interoperability Framework*. Last accessed 25 April 2018. URL: `https://ec.europa.eu/isa2/sites/isa/files/eif_brochure_final.pdf`.

– (2018a). *Digital Single Market*. Last accessed 4 May 2018. URL: `https://ec.europa.eu/digital-single-market/`.

– (2018b). *eGovernment Action Plan: two years on*. Last accessed 8 May 2018. URL: `https://ec.europa.eu/futurium/en/blog/egovernment-action-plan-two-years`.

– (2018c). *eGovernment4EU*. Last accessed 8 May 2018. URL: `https://ec.europa.eu/futurium/en/egovernment4eu`.

Föderale IT-Kooperation (FITKO) (2018). *Fit für die digitale Verwaltung. Fit für die Zukunft.* Last accessed 20 May 2018. URL: `http://www.fitko.de/`.

Gov.uk (2010). *Directgov 2010 and beyond: revolution not evolution*. Last accessed 14 May 2018. URL: `https://www.gov.uk/government/publications/directgov-2010-and-beyond-revolution-not-evolution-a-report-by-martha-lane-fox`.

– (2017). *Government Transformation Strategy*. Last accessed 1 April 2018. URL: `https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/590199/Government_Transformation_Strategy.pdf`.

Harrison, Steve, Antonis Tzounis, Leandros A. Maglaras, François Siewe, Richard Smith, and Helge Janicke (2016). "A Security Evaluation Framework for U.K. E-Goverment Services Agile Software Development". In: *CoRR* abs/1604.02368. arXiv: `1604.02368`. URL: `http://arxiv.org/abs/1604.02368`.

Heller, Nathan (2017). "Estonia, the Digital Republic". In: *The New Yorker*. URL: `https://www.newyorker.com/magazine/2017/12/18/estonia-the-digital-republic`.

Ipsos, Sopra Steria (2017). *Digital Government Barometer: The Digitalisation of the public services in four European Countries*. Last accessed 1 April 2018. URL: `https://www.soprasteria.de/newsroom/publikationen/studie/digital-government-barometer-2017`.

IT Planungsrat (2015). *National E-Government Strategy Update, 2015*. Last accessed 20 May 2018. URL: `https://www.it-planungsrat.de/SharedDocs/Downloads/EN/Entscheidungen/18Sitzung_27_NEGS-Fortschreibung_2015.pdf?__blob=publicationFile&v=2`.

Jenkins, W. I. (1978). *Policy Analysis: A Political and Organizational Perspective*. St. Martin's Press, New York.

Klein, Manfred (2017). "eGovernment-Standards und FITKO gehen an den Start". In: *eGovernment Computing*. URL: `https://www.egovernment-computing.de/egovernment-standards-und-fitko-gehen-an-den-start-a-650554/`.

Lijphart, Arend (1971). "Comparative Politics and the Comparative Method". In: *The American Political Science Review* 65.3, pp. 682–693. ISSN: 00030554, 15375943. URL: `http://www.jstor.org/stable/1955513`.

Lindgren, I. and U. Melin (2017). "Time to Refuel the Conceptual Discussion on Public e-Services: Revisiting How e-Services Are Manifested in Practice". In: *16th IFIP WG 8.5 International Conference, EGOV 2017, St. Petersburg, Russia, September 4-7, 2017, Proceedings*, pp. 92–101. URL: `https://doi.org/10.1007/978-3-319-64677-0_8`.

Mill, John Stuart (1843). *A system of logic, ratiocinative and inductive : being a connected view of the principles of evidence, and methods of scientific investigation*. Vol. 1. London: J. W. Parker. URL: `https://www.biodiversitylibrary.org/item/66635`.

Ministry of Economic Affairs and Communication (2013). *Digital Agenda 2020 for Estonia*. Last accessed 1 April 2018. URL: `https://www.mkm.ee/sites/default/files/digital_agenda_2020_estonia_engf.pdf`.

Muñoz, Laura, Manuel Pedroand Rodríguez Bolívar, Manuel Cobo, and Enrique Herrera-Viedma (2017). "Analysing the scientific evolution of e-Government using a science mapping approach". In: *Government Information Quarterly*. URL: `https://doi.org/10.1016/j.giq.2017.05.002`.

Mäe, Rene (2017). "The Story of e-Estonia – A Discourse Theoretical Approach". In: *Baltic Worlds*. URL: http://balticworlds.com/the-story-of-e-estonia/.

Novaretti, Serge (2015). *Towards the launch of the eGovernment Action Plan 2016-2020*. Last accessed 27 April 2018. URL: https://www.slideshare.net/27eregion/egovernment-action-plan-20162020-uc?from_action=save.

Nugent, Neill (2017). *The Government and Politics of the European Union*. 8th edition. Palgrave.

Pollak, Johannes and Peter Slominski (2012). *Das politische System der EU*. 2nd edition. facultas wuv.

Ragin, Charles C. (1987). *Case-Oriented Comparative Methods*. University of California Press. Chap. The Comparative Method: Moving Beyond Qualitative and Quantitative Strategies, pp. 34–52. ISBN: 9780520066182. URL: http://www.jstor.org/stable/10.1525/j.ctt1pnx57.7.

Seri, Paolo, Annaflavia Bianchi, and Nicola Matteucci (2014). "Diffusion and usage of public e-services in Europe: An assessment of country level indicators and drivers". In: *Telecommunications Policy* 38, pp. 496–513. URL: https://doi.org/10.1016/j.telpol.2014.03.004.

Soledad Janita, M. (2018). "Quality in e-Government services: A proposal of dimensions from the perspective of public sector employees". In: *Telematics and Informatics*. URL: https://doi.org/10.1016/j.tele.2018.01.004.

The Economist (2017). "Estonia is trying to convert the EU to its digital creed". In: *The Economist*. URL: https://www.economist.com/news/europe/21724831-country-e-residency-wonders-why-others-are-more-sceptical-estonia-trying-convert.

Think Tank for Action on Social Change (2018). *How EU bodies work together*. Last accessed 9 June 2018. URL: hhttps://www.tasc.ie/opengovtoolkit/public-decision-making/european-union/.

Vassil, Kristjan (2015). *Estonian e-Government Ecosystem: Foundation, Applications, Outcomes*. Last accessed 15 May 2018. URL: http://pubdocs.worldbank.org/en/165711456838073531/WDR16-BP-Estonian-eGov-ecosystem-Vassil.pdf.

Wallace, Helen, Mark A. Pollack, and Alasdair R. Young (2014). *Policy-Making in the European Union*. 7th edition. Oxford University Press.

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Declaration of Authorship

I hereby declare that this master thesis was independently composed and authored by myself.

All content and ideas drawn directly or indirectly from external sources are indicated as such. All sources and materials that have been used are referred to in this thesis.

The thesis has not been submitted to any other examining body and has not been published.

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