



Towards more “E-volved” Democracy: An exploration of digital governance in Estonia and the lesson it holds for strengthening democracy in the United States

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Abstract

Democratic governance in the developed world has declined over the past fifteen years, and the United States has been no exception. While globally, some countries have moved to increase effectiveness and efficiency of governance through the use of digital technologies over this time period, the US has fallen short in this regard. One country in particular, Estonia, has received acclaim for its pioneering use of ICTs, and is regarded as a global leader in digital governance. The aim of this study is to review the essential characteristics of Estonian governance and consider how they could be applied in the US for the betterment of its democracy. In this dissertation, we will first examine Estonia's road to digitalization, construct the "Estonian Model" of digital governance, and show how pillars of the Estonian Model can reinforce modern democracy. Lastly, we will consider the case of the US and examine if, and how, the US can apply key lessons from the Estonian Model.

Contents

1. Introduction	4
2. Constructing the Estonian Model of digital governance.....	6
2.1 The creation of a digital republic	6
2.2 What is the “Estonian Model”?	8
2.2a Connectivity (Internet access & internet freedom)	9
2.2b Cybersecurity (Strong, secure digital infrastructure and protection of privacy)	10
2.2c Transparency 2.0 (Open and accessible government)	11
2.2d E-Governance (Digitization of public services)	13
2.3 Chapter Summary.....	14
3. Applying the Estonian Model.....	15
3.1 Why the US?	15
3.2 Testing the applicability of the Estonian Model to the US: Three precondition.16	
3.2a Vision and commitment	17
3.2b Public trust in government institutions.....	19
3.2c Centralization and reconfiguration of sub-national institutions	20
3.3 Chapter Summary.....	22
4. Conclusion.....	23
Bibliography.....	25

Introduction

Since the mid-2000's, there has been a trending global decline in democracy. According to NGO and good governance watchdog, Freedom House, 2019 was the fourteenth consecutive year of world democratic backsliding, with “25 of the world’s 41 established democracies experiencing net losses” in its annual index (Freedom House, 2020a: 10). Paradoxically, this decline has coincided with a global digital revolution - an explosion of internet usage and participation, and a shift to online services. Global internet usage has skyrocketed: in 2005, 15.7% of the world population were internet users; by 2017, it was 49.7% (World Bank, 2020a).

Despite being in the wake of a digital revolution, evidently, most of the world’s established democracies have not effectively harnessed information and communication technologies (ICTs) for the advancement of democracy. Perhaps the most surprising example of this is the United States (US) - which is both the world’s largest liberal democracy¹, as well as the home to the five wealthiest tech companies in the world with a collective market capitalization of \$4.3 trillion (Dowdeswell and Goltz, 2020: 199). While there were flirtations with e-governance during the early Obama administration, digitization efforts have remained stagnant.

Where the US has lagged, one country has come to the fore as an innovator of democratic governance. The small, Baltic, former Soviet state of Estonia has over the last thirty years become recognised as both an exemplary liberal democracy and an innovator in the use of ICTs for democratic governance.² By contrast, global assessments have raised growing concerns over the state of democracy in the US, where public administration in general has been barely disrupted by the digital revolution.

Today, the COVID-19 pandemic has starkly highlighted the importance of digital connectivity to our modern lives. Yet when it comes to governance in the US, much of popular discourse remains focused on the threats that digital technology poses to democracy. In contrast, this paper will argue that for the US to redress its growing democratic deficit, it will have to “e-volve” to harness the potential of ICTs to strengthen democracy. To do this, the US should look to Estonia.

¹ Although India is commonly cited as the “world’s largest democracy”, the Varieties of Democracy (V-Dem) Institute - an independent research institute focused on classifying and measuring democracy - does not classify India as a “liberal democracy” (Lührmann, Tannenberg and Lindberg, 2018).

² According to the EU’s Digital Economy and Society Index (DESI) for 2020, Estonia is the leading member state in digital public services (European Commission, 2020: 3).

This dissertation will review the digital character of public service provision in Estonia and its impact on democratic well-being (notably with regard to democratic governance), and outline four key pillars of what we will call the “Estonian Model” of democratic governance: Connectivity, Cybersecurity, Transparency 2.0, and e-Governance. We will then assess the extent to which this model could be applicable to the US.

2. Constructing the Estonian Model of digital governance

2.1 The creation of a digital republic

Anatol Lieven in *The Baltic Revolution*, describes how the former Estonian Soviet Socialist Republic (ESSR) emerged from its “Year Zero.” In the wake of the collapse of the Soviet Union, the newly-independent Republic of Estonia was left without any sort of governance apparatuses. Unlike the USSR-aligned satellite states of East Germany and Poland, Estonia had no semblance of an independent government, as the ESSR’s national institutions and personnel were all housed in Moscow. In 1991, Estonia “lacked their own currencies, armed forces, border guards, diplomatic services, central or even local banks, railways, airlines, and even tourist offices” (Lieven, 1993: 316). In the immediate aftermath of independence, Estonia had no choice but to build itself up from scratch.

Despite these difficulties, one strength that Estonia had was a highly educated (Brown, 1993: 498), and relatively computer-literate labour force. As early as the 1960s, Estonia was “used as a testing ground for many high-technology enterprises and projects” by the Soviet Union (Savchenko, 2019: 216). During the late Soviet era, Western computer companies invested in Estonia and its Baltic neighbors to assemble, program, and sell computers to the Soviet market (Lieven, 1993: 369). This familiarity with computing helped lay the foundation for Estonia’s digital society.

In addition to its familiarity with emerging technologies, much of the country’s early leadership was remarkably young. Estonia’s first elected prime minister following independence was Mart Laar, a 32-year-old former history teacher (Feldmann, 2001: 551), and the average age of his government was 35 (Kumar, 2013). “For other countries, the internet is just another service, like tap water, or clean streets... But for young Estonians, the internet is a manifestation of something more than a service – it’s a symbol of democracy and freedom,” said Linnar Viik, a former advisor of the prime minister (Kamińska-Korolczuk and Kijewska, 2017: 139).

However, Estonia’s digital success did not happen overnight. It took several years of planning and phasing in its implementation (Björklund, 2016: 919). One of the first early initiatives was the “Tiger Leap” project in 1997, which promoted computer literacy amongst children and provided computers and internet access to every school in Estonia (Runnel, Pruulmann-Vengerfeldt and Reinsalu, 2009: 29). This was followed by the parliamentary approval of the “Principles of Estonian Information Policy” in 1998, which outlined the nation’s IT policy (Reinsalu, 2005: 67). By 2000, internet access was declared a human right,

as the government launched a program vastly expanding internet access into the countryside (Gat, 2018: 110). The following year, in 2001, the “Public Information Act” was introduced, requiring government agencies and public institutions at all levels to disclose and disseminate information with the public via the internet (Björklund, 2016: 919). Two years later, in 2002, Estonia introduced and distributed new digital national identification smartcards, secured with end-to-end encryption and two-factor authentication - an IT security marvel for its time (Martens, 2010: 216). As former President of Estonia, Toomas Hendrik Ilves explains, “identity is the fundamental issue... Once you have a secured identity, you can start doing interesting things” (Mishra, 2014). Later that year, Estonia passed the Digital Signature Act (Martens, 2010: 220), allowing its citizens to sign state documents online, essentially making almost all government transactions available online and making in-person trips to government agencies obsolete³. By slotting the ID card into a computer, providing a personal pin code, and logging onto the state’s data-exchange platform, Estonians can perform a myriad of state services such as paying their taxes, registering a car, and since 2005, even voting in elections online (Martens, 2010: 216).

Table 1: *Timeline of Estonia’s digital evolution since independence (1991-2005)*

Year	Event
1991	Independence from the Soviet Union
1997	Launch of the Tiger Leap initiative
1998	Enactment of "Principles of Estonian Information Policy"
2000	The internet is declared a human right
2001	Enactment of the “Public Information Act”
2001	Creation of the state's data-exchange platform
2002	Creation and issuing of digital ID card
2002	Enactment of the “Digital Signature Act”
2005	Launch of i-Voting

Source: (Runnel, Pruulmann-Vengerfeldt and Reinsalu, 2009: 29) (Reinsalu, 2005: 67) (Gat, 2018: 110) (Björklund, 2016: 919) (Martens, 2010: 216-220)

While Estonia’s digitization efforts have been hailed as forward-thinking, they were first and foremost out of necessity. Estonia was left very poor in the early 1990s⁴ and saw digitalization as a cost-saving measure (Wilkowske, 2015). Today, Estonia is regarded as a global leader in e-governance (Nyman-Metcalf and Repytskyi, 2016: 81), as well as “the world’s most advanced digital society” (Kerikmäe and Pärn-Lee, 2020: 1).

³ There are three things that you cannot do in Estonia with your digital identity: get married, get divorced, and transfer property (Goede, 2019: 218).

⁴ Estonia’s GDP per capita in 1993 was \$2,681.82; Finland, its neighbor across the Baltic Sea, had a GDP per capita of \$17,608.81 (World Bank, 2020b).

2.2 What is the “Estonian Model”?

The gradual advancements in state digitization outlined in the prior section fall into four categories that each play a key part in Estonia’s approach to democracy: broadening/strengthening internet access for all (Connectivity), building secure digital infrastructure (Cybersecurity), increasing government transparency through ICTs (Transparency 2.0), and providing government services online (e-Governance). Together, they form the four pillars of what we define in this paper as the “Estonian Model.”

Over the years, a number of indices that measure internationally comparative levels of democracy and good governance have been produced by academic institutions and NGOs. Indices include: “Freedom in the World” from the US-based NGO Freedom House, Varieties of Democracy (V-Dem) project from the University of Gothenburg in Sweden, and the Sustainable Governance Indicators (SGI) project from Bertelsmann Stiftung in Germany. These indices measure the quality of democracy and governance around the world, providing each country with a score and ranking based on an array of qualitative variables such as freedom of expression, accountability, government transparency, and access to government information. For example, several indices and variables of democracy measurement are demonstrated below in table 2, juxtaposing the cases of Estonia, the US and the G7 countries.

Table 2: *World rankings of selected democratic indices and variables*⁵

Country	Liberal Democracy Index (V-Dem)	Accountability Index (V-Dem)	Freedom of Expression Index (V-Dem)	Access to Government Information (SGI Project)	Internet Freedom (Freedom House)
Estonia	2	7	7	1	2
United States	36	38	36	30	6
Canada	21	22	13	19	3
France	17	25	10	19	8
Germany	20	8	4	10	4
Italy	22	9	15	19	10
Japan	26	23	51	37	12
United Kingdom	13	16	6	10	6

Source: (Coppedge et al., 2020b) (Bertelsmann Stiftung, 2020: 66) (Freedom House, 2020b).

As we will explore throughout this chapter, in the Estonian Model, these qualitative variables of democracy and good governance are reinforced by a digital approach built around the four aforementioned pillars. Table 3 outlines how each of these pillars and their

⁵ In addition to Estonia and the US, the US’s G7 contemporaries have been included for added reference. Note: There are several ties in these rankings, for example, the US and the UK are tied for 6th in Freedom House’s Internet Freedom index.

respective components positively correlates to key variables in measuring democratic governance, with each grouping of components serving to strengthen and reinforce its corresponding grouping of variables.

Table 3: Pillars of the Estonian Model, their components, and how they interact to variables of democratic governance.

Pillar	Components	Democratic governance variables enhanced ⁶
Connectivity	<ul style="list-style-type: none"> - Internet as a human right - Limited digital divide - Internet freedom - Net neutrality 	<ul style="list-style-type: none"> - Social class equality (<i>v2clacjust</i>) - Urban-rural location equality (<i>v2clgeocl</i>) - Freedom of expression (<i>v2x_freexp</i>) - Engaged society (<i>v2dlengage</i>)
Cybersecurity	<ul style="list-style-type: none"> - Digital identity - Data-exchange platform - Cyber defence 	<ul style="list-style-type: none"> - Protection of privacy and data (<i>v2smprivcon</i>) - Cyber security capacity (<i>v2smgovcapsec</i>)
Transparency 2.0	<ul style="list-style-type: none"> - Open government data - Right to information - Government responsiveness 	<ul style="list-style-type: none"> - Law transparency (<i>v2cltrnslw</i>) - Government accountability (<i>v2x_accountability</i>) - Citizen engagement (<i>v2zzprt-dem</i>)
e-Governance	<ul style="list-style-type: none"> - Online government services - i-Voting 	<ul style="list-style-type: none"> - Access to public services (<i>v2peapsecon</i>) - Expansion of voting (<i>v2asuffrage</i>)

The Estonian Model is not a model of democracy *per se*, but rather can be seen as a 21st-century model of good governance - a key and essential component of democracy. According to former UN Secretary-General Kofi Annan, "good governance is ensuring respect for human rights and the rule of law; strengthening democracy; promoting transparency and capacity in public administration" (Weiss, 2000: 797). As we will show in the succeeding sections of this chapter, the Estonian Model, through its four pillars, can reinforce democratic principles, promote good governance, and ultimately strengthen democracy itself.

2.2a Connectivity (Internet access & internet freedom)

The most fundamental pillar of the Estonian Model is connectivity. For a digital society to work, the vast majority of its citizens need to be connected to it. Estonia, for the past two decades, has been trailblazing this concept. In 2000, the parliament of Estonia took the then unprecedented move of declaring internet access as a fundamental human right, arguing that the internet is "essential for life in the 21st century" (Woodard, 2003). Today, Estonia has an extraordinarily high rate of internet users. According to World Bank data, in 2015, 88.4% of Estonians were broadband internet users, compared to 75.7% in the EU, and

⁶ These variables and their corresponding variable tags are derived from variables with the same name or similar description in the V-Dem Institute's "V-Dem v10 codebook" (Coppedge et al., 2020a).

74.6% in the US (World Bank, 2020c). Additionally, Internet use is high among all ages, ethnicities, genders, and social classes.

On the contrary, in the US, particularly owing to its high levels of income inequality, a stark digital divide persists. Internet service plans in the US can be expensive, making cost a hindrance for low-income Americans. According to data from the Pew Research Center, 44% of low-income families do not have home broadband service (Anderson and Kumar, 2019). The US government, since the Clinton administration, has tried to address this problem by granting \$9.25 per month subsidies to qualifying low-income families to spend on voice and/or broadband services, as part of the Lifeline government program. However, because the amount of the subsidy is so low, most recipient families can only use it for voice services. Furthermore, under the current Trump administration, funding for the program was cut by 40%, and today only a fifth of eligible low-income families participate in the program (Sohn, 2020).

In addition to internet access, Estonia is also a leader in internet freedom. Since 2009, Freedom House has ranked Estonia either first or second on its annual study of internet freedom around the world (Freedom on the Net), citing very few obstacles when it comes to accessing the internet and no government-imposed restrictions (Freedom House, 2018b).

Additionally, in line with the European Union, Estonia has strict net neutrality laws, whereas the US has no regulations preventing internet service providers from slowing down, restricting or charging more for certain sites or content. As of 2018, the European Commission reported that it had found no cases of net neutrality violations in Estonia, and internet service providers found to be in violation can be subjected to fines (European Commission, 2018: 72).

2.2b Cybersecurity (Strong, secure digital infrastructure and protection of privacy)

The next pillar is cybersecurity, in which Estonia has also become a global leader. Estonia's public-facing digital infrastructure revolves around two central components: i) e-identification and ii) a data-exchange platform through which data travels and is stored (Kerikmäe, Ramiro Troitiño and Shumilo, 2019: 74).

In Estonia, all citizens are issued a digital national identification card containing a chip that uses 2048-bit public key encryption (Rafaeli, 2019). This mandatory e-ID smartcard functions both as a form of personal identification, and an authentication key to access a data-exchange platform. In 2007, e-ID authentication was expanded beyond a mandatory physical ID card, and now includes an optional secure in-phone sim card as an added method for authentication (Martens, 2010: 216). However, solely having access to e-ID (whether by smartcard or by mobile) is not enough to gain access to Estonia's data platform. As an added safeguard to prevent unauthorized access in cases of loss or theft of ID, Estonians must also enter a personal 4-8 digit pin code (PIN1) to log into the data-exchange platform. Completing a transaction requires an additional separate pin code (PIN2) which serves as a personal e-signature (Martens, 2010: 216).

These multi-layered safeguards are a stark contrast to personal authentication in the US. In American society, a person's 10-digit social security number (the de facto national identification number in the US) is regarded as a closely guarded secret, and one that can have serious identity theft consequences if leaked. Estonians, meanwhile, can misplace their ID or have their ID number leaked with no consequences, as cybercriminals would still need to know their personalized pin codes to access their data.

In addition to providing better authentication solutions, in 2001 Estonia built what is known as the X-Road data-exchange platform “for secure data sharing runs on an Estonian blockchain technology called KSI (Keyless Signature Infrastructure), through which all incoming and outgoing transactions are authenticated and encrypted” (Freedom House, 2018a: 19). In Estonia, personal data is not centrally held in one server; it is spread out over various servers, connected by X-Road - dubbed the “busiest road of Estonia” (Kerikmäe, Ramiro Troitiño and Shumilo, 2019: 74). This lack of centralized data is designed to make malicious data breach attempts futile (Heller, 2017). According to Freedom House, “given Estonia's strong legal framework for privacy rights, the system provides greater protections than in countries where citizens' data is stored unencrypted on disparate servers, with no mechanism for informing them about who possesses the information or how it is being used” (Freedom House, 2018a: 19).

Estonia has not been completely immune to cyberattacks, however. In 2007, amidst controversy surrounding the relocation of a monument to Soviet soldiers of World War II, Russian state-sponsored hackers launched a coordinated series of cyberattacks on the Estonian institutions, banks, news organizations, and other entities (Pernik, 2018: 55). While the negative impact of the attacks were ultimately marginal, “mainly because Estonian first responders were able to mitigate the attacks, increase network and server capacity, and take other response measures swiftly and effectively” (Pernik, 2018: 56), it was at the time the largest and most sophisticated instance of state-sanctioned cyber-warfare, and a watershed moment for the country. In its aftermath, Estonia became one of the first countries to adapt a cybersecurity strategy (Herzog, 2017: 70). It also spearheaded an initiative to establish the NATO Cooperative Cyber Defence Centre of Excellence, also known as the NATO Cyber Defence Centre, which is headquartered in Tallinn. The centre “serves as NATO's focal point for cooperation, data exchange, and research on cybersecurity” (Herzog, 2017: 73).

2.2c Transparency 2.0 (Open and accessible government)

In Estonia, the principles of open government and government transparency are embedded in its constitution (Palidauskaite, Pevkur and Reinholde, 2010: 52). Article 44 of the Estonian Constitution declares that “everyone has the right to freely obtain information disseminated for public use. All state agencies, local governments, and their officials have a duty to provide information about their activities, pursuant to procedure provided by law, to an Estonian citizen at his or her request” (Constitute Project, 2015: 11). The Public Information Act of 2001 expanded on this, making every law, even drafts of laws, available online for the public (Hoe, 2017). Additionally, “any citizen or resident can submit an oral or written information request to the government and officials must provide a response within

five working days” (Toots, Sikk and Jahn, 2015: 21). As a result, Estonia has been ranked first in the world in Access to Government Information by the Sustainable Governance Indicators (SGI) project (Bertelsmann Stiftung, 2020: 66).

Unlike its Estonian equivalent, the constitution of the US, perhaps owing to the fact that it is the oldest written national constitution in the world that is still in force (Liptak, 2012), makes no direct mention of the right to information, government responsiveness or government transparency. At only around 4,000 words long (about half the size of this dissertation), it is also one of the shortest constitutions in the world (Lieberman, 1967: 9). Because of its age and lack of depth, it has been argued that the US constitution no longer presents an adequate legal framework for 21st century governance. In 2012, United States Supreme Court Justice Ruth Bader Ginsburg sparked controversy when she remarked that if a new nation was looking to establish a constitution, she would not recommend looking towards the US as a model (LeRoux, 2019: 519).

Despite its lack of constitutionally-embedded government transparency laws, the US passed the Freedom of Information Act (FOIA) in 1967, which in theory provides the public with the right to request access to records from any federal agency. Under the act, federal agencies must respond to information requests within 20 working days (Relyea, 2009: 315). However, in practice this is rarely the case. According to the Center for Effective Government, a think tank and advocacy group focused on government transparency, “agencies label the requests they receive as ‘simple’ or ‘complex’ and work to process the simple requests first” (Baker and Moulton, 2015: 27). As a result, as of 2019, there are 2,061 pending backlogged FOIA requests from the National Archives and Records Administration, which has an average processing time of 882 business days for “complex requests.” The Department of State, meanwhile, has 13,021 pending backlogged FOIA requests, and has an average processing time of 650 business days (Harper, Jones, Blanton, and Reid, 2020). This public administrative failure of openness and transparency undoubtedly presents an obstruction to democracy.

In “E-government and Moral Citizenship: The Case of Estonia”, Fredrika Björklund (2016: 923) notes that Estonia’s “quest for openness was a consequence of democratization after [the fall of the Soviet Union],” as openness and transparency are essential components for democracy. Estonia’s 2001 Public Information Act goes beyond traditional notions of transparency which, like the FOIA, guarantee the *right* to access information, but not the ease of access to it. By this measure, Estonia’s approach can be seen as “transparency 2.0” because it ensures that information is not only available in theory but in practice, through open online access.

Transparency 2.0 directly enhances democracy as it increases “societal checks on government, which can reduce corruption and enhance impartial administration” (International IDEA, 2019: 56). Furthermore, perhaps most importantly, the openness of our government institutions enhances the public’s trust in them - which, as explained later, is a key precondition for the application of the Estonian Model.

2.2d E-Governance (Digitization of public services)

E-governance in Estonia (colloquially known as “e-Estonia”) encompasses a multitude of government services (Kelli and Mets, 2015: 52), including e-school (parents can monitor their children's grades and communicate with teachers), e-prescription (requesting a medical prescription), and e-taxation (filing and paying for taxes). In Estonia, 99% of the public services are available online 24/7 (Paide, Pappel, Vainsalu and Draheim, 2018: 36). The Estonian government estimates that providing services online has saved 844 years of working time (Seo and Myeong, 2020: 10). Perhaps the e-service that most exemplifies Estonian e-governance is i-Voting. While other countries may offer a suite of public services online for their citizens, Estonia is unique in offering all citizens the ability to vote in local and national elections online (Alvarez, Hall and Trechsel, 2009: 497). During the designated i-Voting period⁷, a citizen simply logs in with their e-ID and pin code, and casts a vote. Estonians can change their vote as many times as they want until the voting period ends, with only the final vote being the one that is ultimately cast.

I-Voting, however, does not replace in-person voting. Despite its increasing popularity⁸, the majority of Estonians still continue to vote in-person on election day. Thus, i-Voting can be viewed as a supplementary alternative method of voting, and one that benefits Estonians with disabilities, or those abroad or living in remote areas⁹ (Hall, 2012: 157). According to data from the International Institute for Democracy and Electoral Assistance (International IDEA), between 2003 and 2007, when i-Voting was implemented, voter turnout in Estonia increased by nearly 4%, and continued to increase in subsequent years before reaching a plateau of around 64% (International IDEA, 2020). Although the private in-home nature of the service naturally draws concerns about possible voting manipulation or coercion, 15 years after its inception, there has been “no known evidence of electoral foul play” (Budnitsky, 2020).

In the US, with the ongoing COVID-19 pandemic, there have been public health concerns about the safety of in-person voting, pointing to the need for alternative methods. Additionally, in-person voting has been subject to targeted voter suppression. In recent years, there have been a number of high-profile instances of state governments providing a limited number of in-person polling places, poll workers, and resources to urban communities (Pettigrew, 2020: 9), resulting in long lines at the polls, and disproportionately affecting minority voters (Famighetti, 2016).

One solution championed by US think tanks and advocacy groups has been an expansion of postal voting, commonly known as “vote by mail” in the US (Belin and De Maio, 2020: 6). Voting by mail from the comfort of one’s home, advocates argue, is a safer alternative during the pandemic, and alleviates voter suppression. However, postal mail has become increasingly obsolete in an ever-more digital world. After reaching a peak of around 103.7

⁷ I-Voting is only possible from the 10th day to the 4th day prior to election day - this is a precautionary measure taken to review any possible electoral errors (Sál, 2015: 21).

⁸ In the 2019 parliamentary elections, 43.8% of voters cast ballots online (Taylor, 2020), up from 30.5% in the 2015 parliamentary elections (De Castella, 2015).

⁹ In the 2015 elections, Estonian expats from 116 different countries voted online (De Castella, 2015).

billion units in 2001, the US Postal Service (USPS) has experienced a year-on-year decline in first-class mail volume every year since. By 2017, this number had dropped by 43 percent to just 58.7 billion units (Sarmiento and Brandão, 2020: 377). As a result, today, the US Postal Service is heavily indebted and on the brink of bankruptcy¹⁰ - which raised questions over the ability to vote by mail in the November 2020 election.

The current ineffective state of voting in the US presents a serious challenge to its most fundamental of democratic processes. If it is any indication that the US should consider looking for new and innovative ways to enhance its democracy, a survey from April 2020 showed that a majority of Americans (55%) support online voting as an alternative to voting at a polling booth (American Bar Association, 2020: 2).

2.3 Chapter Summary

In this chapter, we have examined the transformation of the Estonian state since its independence from the Soviet Union. We have defined the Estonian Model and explained how it relates to the advancement of democracy and democratic variables. Lastly, in defining the Estonian Model, we have identified and described its four pillars, and compared and contrasted them in the context of Estonia and the US.

¹⁰ According to the U.S. Treasury, the USPS reported \$69 billion in net losses between the 2007 and 2018 fiscal years (U.S. Treasury, 2018: 2).

3. Applying the Estonian Model

Now that we have established the Estonian Model, outlined the four pillars that typify its “evolved” approach to democratic governance (Connectivity, Cybersecurity, Transparency 2.0 and E-governance), and examined how each pillar underpins democracy and good governance, let’s examine why the US is important as a case study and how we plan to test the Estonian Model’s applicability to the US.

3.1 Why the US?

Since the onset of the 21st century, the US has been experiencing a downward trend in various measurements of democracy. In the latest edition of the Economist Intelligence Unit’s Democracy Index, the US was ranked 25th in the world (Economist Intelligence Unit, 2020: 10). In the V-Dem Institute’s Liberal Democracy Index (Lührmann et al., 2020: 30), it was ranked 36th in the world. Lastly, in Freedom House’s Freedom in the World survey, it was ranked 52nd, tied with Belize (Freedom House, 2020a: 8).

However, for much of the 20th century, the US was heralded by many - both domestically and abroad - as the ideal model of democracy. According to researchers from New York University Law School, between 1946 and 1987, the majority of the world’s democracies had constitutions that were directly inspired by the US Constitution (Law and Versteeg, 2012: 762). Meanwhile, within the US, there has long been a prevailing mythological notion that the US is a “shining city on a hill”, and that the US should never aim to emulate or model itself after other countries - a concept known as “American Exceptionalism” (Gardbaum, 2008: 392).

Yet, the idea that the US is the ideal model of democratic governance appears to have lost its appeal in the recent decades. Since the end of the 20th century, the number of states that had constitutions that were directly inspired by the US Constitution has experienced a sharp drop (Law and Versteeg, 2012: 781) as newly-formed nations have adopted constitutions more similar to Canada, Germany, and South Africa (Law and Versteeg, 2012: 823). As noted in the previous chapter, in 2012, Supreme Court Justice Ruth Bader Ginsburg remarked that she would not recommend new nations modelling themselves after the US. Furthermore, a recent report from the University of Cambridge’s Centre for the Future of Democracy showed that for the first time ever, the majority of Americans (55 percent) are dissatisfied with their current system of government; this is a sharp increase from 2008 when only 25% of Americans said they were dissatisfied (Foa et al., 2020: 20).

Surely, the US’s decline in qualitative democratic indices and variables (shown earlier in table 2), coupled with American dissatisfaction for their current system of governance, indicates the need to seriously rethink the US democratic system. Perhaps it is time that the

US does away with American Exceptionalism, and begins to take lessons from other countries. And perhaps no country would be more appropriate to learn from in the digital age than Estonia.

3.2 Testing the applicability of the Estonian Model to the US: Three preconditions

Applying the Estonian Model in the US may seem, at the outset, like a mismatched choice. After all, the US is a country with a population of over 250 times that of Estonia.¹¹ Would it even be possible to replicate the Estonian Model in a country of that size? Theoretically, yes. For instance, India's biometric-based digital ID system, Aadhaar, which was introduced in 2009, has been able to serve over 1.2 billion registered residents (Dattani, 2019: 411). While the implementation of Aadhaar has been widely controversial since its inception, owing to privacy concerns, it has nonetheless been called "the most sophisticated ID programme in the world" (Shahin and Zheng, 2018: 25).

According to Estonia's Chief Information Officer, Siim Sikkut, "Variables like population, are just another line of code, it's really easy to scale. Population is only a challenge when it comes to the number of people to convince" (Robbins, 2018: 8). Moreover, the US, as the home of Silicon Valley, has long been heralded as the home of innovation. Given its vast access to human and financial resources, there is little reason to believe that the US - especially with the world's largest government spending budget - cannot reproduce similar ICT systems that other countries have pioneered over a decade earlier.

While scale and technical capacity are not obstacles, there are several complex challenges that would need to be addressed. In 2003, the OECD produced its first publication on the implementation of e-government, outlining the experiences and challenges of its member countries. It notes that "implementation of e-government requires action and change at many levels if it is to succeed in maximising potential benefits. A government-wide vision is required, leadership and commitment are needed to translate this vision into reality, and existing barriers in the way public administration operates will need to be overcome" (OECD, 2003: 152). On the basis of these lessons learned and intergovernmental recommendations, we can identify three preconditions that would be necessary for the application of the Estonian Model to the US:

The first is vision and commitment. As mentioned earlier, the Estonian Model took shape after years of careful planning and gradual implementation. For the Estonian Model to work in the US, it will need long-term government vision and commitment, possibly spanning more than one presidential administration.

Next, it would require public trust in governmental institutions. The Estonian Model relies on citizens trusting their government institutions. While Estonians have high trust in their government, Americans do not. Public pushback against the reforms could side-line the project.

¹¹ The population of the US is 328.2 million, while the population of Estonia is 1.3 million (United Nations, Department of Economic and Social Affairs, Population Division, 2019: 30-32).

Finally, the third precondition is centralization and reconfiguration of sub-national institutions. For the Estonian Model to thrive, there must be a cohesive unitary national system. The US, however, is a federalized country made up of 50 states, many with vastly different agendas.

3.2a Vision and commitment

There's an old adage in American politics that infrastructure is not "sexy" (Santini, 2018: 1033). Compared to its European counterparts, who invest on average 5% of their GDP on infrastructure, the US allocates just 2.4% (McBride and Moss, 2020). In the rare examples where there has been a vision for infrastructure reform, commitment often lags. Perhaps the best example of this is the notorious roll-out of HealthCare.gov. The launch of the website - an initiative of the Obama Administration and a crucial component to Barack Obama's signature project the Patient Protection and Affordable Care Act, colloquially known as "Obamacare" - in 2013 was heavily criticized as being plagued with technical issues, despite three years in development and its reported \$840 million price tag (Baker, 2014). The failure of the launch has been referred to as one of the biggest embarrassments of the Obama administration, and damaged the public perception of the Affordable Care Act (Anthopoulos, Reddick, Giannakidou and Mavridis, 2015: 133). In September 2014, in a joint press conference in Tallinn with the then President of Estonia, Toomas Henrik Ilves, Obama quipped, "I should have called the Estonians when we were setting up our health care website" (The White House, 2014).

In response to the failure of HealthCare.gov, President Obama established the United States Digital Service (USDS), a new government unit within the Executive Office of the President of the United States, designed to improve digital services across federal government agencies (Clarke, 2019: 365). However, six years after its establishment, the results of the unit have been lackluster. The transition of presidential administrations in 2017, following the election of President Donald Trump, has side-lined the unit, casting doubt on its long-term sustainability (Clarke, 2019: 372). While the departing Obama Administration's federal government budget proposal for 2017 called for the USDS to expand from a team of 200 to 500 (Clarke, 2019: 366), as of May 2018 the unit consisted of a mere 175 staff members (Simonite, 2018).

Confusingly, along with the USDS, the White House also has a separate Office of Science and Technology Policy (OSTP), which has been around since 1976. However, like the USDS, it has been essentially dormant since President Trump assumed office. Staff members have dropped from 130 to 35 (Reardon, 2017: 145), and the Director position was vacant for over two years (Mervis, 2019: 800). Additionally, the position of Chief Technology Officer of the United States - a new position created during the Obama Administration - was vacant for the first two and a half years of the Trump Administration. Eventually, in August 2019, Michael Kratsios, a venture capitalist and Chief of Staff to a major Trump donor was appointed - despite not having a background in technology (Chafkin, 2019).

For the Estonian Model to be applied in the US, there needs to be both a renewed vision as well as a long-term commitment from the federal government towards digitalization. Like

Estonia, where digitalization efforts were gradual and evolved in the course of over a decade, the US needs long-term commitment towards a digital transformational period that will likely span multiple presidential administrations.

At its most fundamental level, this commitment must include a revitalization of the USDS and the OSTP, as well as the appointment of appropriate leadership in charge of digitization and its implementation. However, the commitment should also go beyond strategic planning and recruiting. The federal government will also need to pass an expansive budget that allocates billions of dollars in funds specifically towards implementing crucial components of the Estonian Model. This funding should include money earmarked towards financial assistance for low-income families lacking broadband internet service (Lifetime program), the manufacturing and issuing of digital ID cards, the adoption of the X-Road platform, and a nationwide campaign educating Americans on the benefits of the digitalization reforms. Taking this into account, I've constructed a prospective budget (table 4) with my methodology below:

- An expansion of the Lifeline program to cover all 38 million low-income households, at a more reasonable rate of \$12.50 per month (instead of the current \$9.25/month)¹², would cost the federal government \$6.84 billion annually.
- Based on a 1999 analysis from the Social Security Administration (Donnelly, 1999), after adjusting for 2020 USD figures and population growth, the cost of creating and distributing national digital ID cards would cost approximately \$28.4 billion.
- Owing to its decentralized nature, the adoption of the X-Road platform does not require the building of new servers, or connecting them to a centralized one. All data remains in its agencies' respective servers. Therefore, its adoption is relatively cheap. It has an estimated cost of around "\$450,000 to build, and \$250,000 to \$500,000 a year to maintain" (Rees, 2020: 38).
- As advertising and marketing costs for future projects are difficult to estimate, we will use the nationwide advertising and marketing campaign of ObamaCare as a basis, which cost an estimated \$648 million in 2013 alone (Harrison, 2013), with \$100 million in following years (Goodnough and Pear, 2017).

¹² Although it is difficult to pinpoint when exactly the amount of the monthly subsidy was last modified, an FCC report from April 2004 indicates that the amount was \$9.25 even then (Federal Communications Commission, 2004: 5). Thus, the amount of the monthly subsidy has not increased in at least 16 years. Adjusting for 2020 USD figures, \$9.25 in 2004 USD would be \$12.88 today.

Table 4: Prospective budget for implementation of Estonian Model over 10 years

	Initial Investment	Annual Investment	Cost after 10 years
Lifeline program	\$0	\$5,700,000,000	\$57,000,000,000
Digital ID	\$28,400,000,000	\$0	\$28,400,000,000
X-Road	\$450,000	\$500,000	\$5,450,000
Marketing	\$648,000,000	\$100,000,000	\$1,648,000,000
Total			\$87,053,450,000

Based on these calculations, there would need to be a financial commitment from the federal government of roughly \$87 billion over the course of ten years to implement the Estonian Model at its most basic form - or an average of \$8.7 billion per year. While this may appear to be expensive, it's also worth noting that the federal budget of the US was \$4.4 trillion in 2019, making \$10 billion an expenditure of 0.197%. Moreover, there would be a significant return on investment from the creation of the skilled tech jobs that would be required to maintain the system, as well as savings yielded from the reduction of costs attributed to digitizing public services.

3.2b Public trust in government institutions

As noted in the previous chapter, the Estonian state has cultivated a high level of trust from its citizens through its extensive cybersecurity measures, protection of privacy, and an “unprecedented level of transparency and accessibility in government” (Savchenko, 2019: 214). According to a recent OECD survey on e-government, while 26% of EU residents have online security or privacy concerns, only 6% of Estonians do (OECD, 2019a: 124).

Paradoxically, while multiple pillars of the Estonian Model help build trust, trust is also a precondition for transitioning towards the Estonian Model. This poses a problem for the US, as the vast majority of US citizens do not trust its federal government. In 2001, around the same time that Estonia was getting ready to issue its first digital ID cards, Oracle CEO and billionaire Larry Ellison proposed a similar concept for the US, even going as far as providing free software from Oracle to the federal government for the creation of a national ID (Lyon, 2007: 114). However, the proposal was strongly denounced by civil libertarians concerned about the prospects of the creation of a national database containing personal information such as names, home addresses, and phone numbers - which by today's standards seems innocuous (Southwick, 2003: 46). That was almost two decades ago, and today, not much has changed in American public opinion. According to a Pew Research poll from 2019, only 17% of Americans say they can trust the federal government to do what is right either “just about always” (3%) or “most of the time” (14%) (Pew Research Center, 2019).

The US government's recent history in regard to cybersecurity and data management also plays a large role in this deep-seated distrust. While many Americans have come to accept

significant unknown violations of their privacy from private corporations¹³, there is a persisting fear of a “big brother” government. The exposure of the secret Prism NSA surveillance program by whistle-blower Edward Snowden in 2013 damaged the public’s trust in government, and sparked a national debate on the protection of privacy and the proper limits of the federal government. In a poll taken one year after the Snowden affair, just 6% of Americans said they were “very confident” that government agencies would keep their records private and secure (Madden and Rainie, 2015).

As explained by Florian Marcus, a digital transformation advisor for the e-Estonia Briefing Centre, “Trust is absolutely crucial... Most governments have completely lost the trust of their societies because they’re not transparent about how they use their data. That being said, I think digitalization is always a tool. You can do it right; you can do it wrong. And it depends on the population how they perceive what is right and what is wrong” (O’Brien, 2020).

Currently, there is not a sufficient level of public trust in the US federal government to apply the Estonian Model. However, there are several precursory steps that the US government can take towards increasing transparency and accessibility. Building on OECD recommendations for enhancing openness, transparency, and inclusion in early stage development of digital government, the US could implement the following measures:

- Fortify the legal and regulatory frameworks to bolster transparency of government processes, operations, information and data supported by digital technologies. (OECD, 2016: 1). This includes a re-examination of the FOIA, and a commitment to curtailing excessive request delays by allocating more workers and resources to FOIA units in federal agencies.
- Expanding on the OECD recommendation of sensitizing “different stakeholders on the importance of open, transparent and inclusive government processes and operations” (OECD, 2016: 1), the federal government must develop a fifty-state outreach campaign educating the public on the benefits of a more digital government.
- Publish data about government deliberations, management, and results, make detailed government spending reports more accessible, mandate online disclosure of interest groups' independent expenditures, and “establish an ‘open by default’ standard regarding government data with necessary legal exceptions to protect privacy and other types of sensitive information” (OECD, 2016: 1).

3.2c Centralization and reconfiguration of sub-national institutions

The United States of America was founded in 1776 as a confederation of 13 autonomous independent states. However, five years later, the nation’s founders moved towards

¹³ A 2016 poll found that Americans trust private credit card companies and cell phone carriers more than the federal government with the protection of their personal data (Smith, 2017).

centralization, substantially expanding the powers of the federal government, while still maintaining specific institutional powers to state governments. Today, as a result, there are fifty different departments of motor vehicles, fifty different boards of elections, and fifty different unique state governments with numerous autonomous agencies, all of which have varying policies and agendas. Two centuries later, this lack of institutional cohesiveness presents constraints to American governance in the 21st century and complicates the application of the Estonian Model - a fundamentally national model - in the US.

An indispensable component of the Estonian Model is its national digital ID card, which is mandatory and required for access to government services. Although common around the world, the concept of a national ID card is foreign in the US, where there are essentially three separate forms of “national identification.” In the US, a citizen’s *de facto* identification card is their driver’s license, however it is provided at the state-level, not at the national-level. Additionally, for employment and taxation purposes, US residents are given a Social Security Card with a 9-digit number, which is provided by the (national) Social Security Administration, and over the past century has become the *de facto* national identification number. Lastly, there is the United States Passport Card, which is provided by the (national) Department of State, used for domestic travel within the US, and is similar to national identity cards in the European Economic Area. The issue of national ID is just one example of a sticking point; for the US to implement the Estonian Model, it would need to rework and consolidate a number of existing institutions.

Furthermore, while the USDS was established by the Obama Administration to address tech limitations in federal government agencies, it does nothing to address tech limitations in state government agencies - the places where most Americans will go to for assistance in their day-to-day lives, such as the DMV (renewing a driver’s license), the state board of elections (registering to vote), or state department of labor (filing for unemployment) - and certainly does not connect them to a national system. This technological distancing between federal and state cyberspace would need to be addressed for the implementation of a national model.

Lastly, American society is highly polarized today, and for a national system to function it would need cooperation from all fifty states. Political partisanship is likely to be a hindrance for any national initiative. There are however a number of potential policy reforms that would mitigate the divide between federal and state governments:

- Implement national laws that make services universal across all states. For example, online voter registration is currently available to residents of New York, but not to residents of Texas.
- Instead of having American citizens and residents navigate separate agency websites to complete their respective service, the federal government can create a one-stop national portal for American citizens and residents, streamlining their e-

government services. In Estonia, all government services have been consolidated and are available on the state online portal: eesti.ee.¹⁴

- In implementing a national ID, the Social Security Card - which all adult US residents already have - can be upgraded to include a picture, basic identity information, and a microchip, similar to the Estonian National ID card. Furthermore, like the Estonian national ID, the card can serve as a replacement for a physical driver's license, as it can include an external denomination or internal data designating the person's driving eligibility (Martens, 2010: 218).

3.3 Chapter Summary

In this chapter, we have made the case for why the US should look towards applying the Estonian Model, and identified and addressed three preconditions for its application (vision and commitment, public trust in governmental institutions, and centralization and reconfiguration of sub-national institutions). We examined each precondition in the context of the US, and in doing so identified its difficulties, as well as offered solutions.

¹⁴ "Eesti" means Estonia in Estonian.

4. Conclusion

The United States, now nearing its 245th year, has been facing a growing democratic crisis, and is no longer looked to as the model of democracy it once was. In contrast, through embracing innovation, Estonia has not only emerged from poverty but made a place for itself on the world stage as a role model for modern democratic governance. In declaring internet access as a fundamental human right, and arguing that the internet is “essential for life in the 21st century,” Estonia has in many ways also set the bar for a new standard whereby the internet is essential for *democracy* in the 21st century (Woodard, 2003).

As we have explored in this paper, it appears unlikely that the US will be able to meet this new standard of 21st century democracy in the near future. While the applicability of the Estonian Model to the US would be technically feasible, the lack of vision and commitment, public trust in government, and centralized institutions would be barriers to its success. Nevertheless, incremental adoption is an attractive option, and a number of precursory measures could help pave the way for this democratic “e-evolution.”

In the meantime, the Estonian Model is already being applied in a number of other countries, and Estonia actively promotes its model of governance. In its capital city of Tallinn, it has established the e-Estonia Briefing Centre adjacent to the international airport, designed as a showroom of Estonian e-governance for visiting dignitaries, journalists, and academics. Additionally, Estonia has partnered with the United Nations Development Programme (UNDP) and the Open Societies Institute to found the e-Governance Academy, a non-profit think tank “founded for the creation of and distribution of knowledge concerning e-governance, e-democracy and the development of civil society” (Laanes, 2012: 1163).

Estonia now offers its X-Road technology to other countries for free - which former President of Estonia Toomas Hendrik Ilves has described as Estonia’s “foreign aid on a thumb drive” (Boston Global Forum, 2018, 35:19). As of 2019, Finland, Iceland, Faroe Islands, Japan and Kyrgyzstan, have all adopted Estonia’s X-Road platform (OECD, 2019b: 48). During a public lecture at Tallinn University in 2013, then UN Secretary-General Ban Ki-Moon remarked, “Wherever I look, I see how technology is transforming our world for the better. Here in Estonia, your Tiger Leap policy has brought computers into schools. Your broadband is among the fastest in the world. You have practiced e-government for more than a decade. You vote and pay taxes online. Advances such as these are spreading rapidly in all regions. Estonia is contributing to this progress by sharing its experience with countries in this region and beyond” (Ki-Moon, 2013).

Will the Estonian Model become the new “Westminster model” of its day, inspiring emerging democracies just as the UK parliament did in the 19th and early 20th centuries? It

remains too early to say, but what is certain is that the United States and other more established democracies have a great deal to learn from the tiny state of Estonia about how to build democracy in a digital age.

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