

The How and Why to Internet Voting an Attempt to Explain E-Stonia

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Abstract. The introduction of remote electoral methods (also, e.g., postal voting) serves the citizen in providing an easily accessible and comfortable means of voting. In addition, remote voting is also considered a viable alternative for disenfranchised voters whose participation in elections has always been dependent on the methods they are offered – voters living or residing permanently abroad, voters who are living in conditions which make it difficult for them to attend elections for geographical reasons and voters with disabilities. All these voters need to make extra efforts in participating in the democratic process, and in all these cases, the principle of universality (or general elections) prevails over the possible concerns connected with the way of voting.

Still, Estonia is the only country in the world providing remote electronic means to its citizens in all elections countrywide. In this article we try to explain the reasons and modalities how Estonia could retain this service where other countries failed.

1 Introduction

We live in a time where information and the development of information and communication technologies (ICT) – most importantly the Internet – have shaped the understanding of communication. As Manuel Castells has put it “The diffusion of Internet, mobile communication, digital media, and a variety of tools of social software have prompted the development of horizontal networks of interactive communication that connect local and global in chosen time.” [1] These networks build connections among persons and enhance the communication with the public as Internet-based transactions have grown to be a part of both private and public conduct. We see this tendency in commerce, where online business is growing stronger [2]; likewise in online banking where the usage numbers in Europe reach up to 91% [3], and in the public sector where ICT-enabled services have also found growing acceptance [4].

The nature of one country’s democratic processes takes many influences from the development of the country and its democratic and legal culture [5]. Therefore, the conduct of elections has many unique features in every country – e.g. the choice of voting channels or the time of voting. However, democratic elections have to adhere to a set of core principles – universality, freedom, equality (uniformity) and secrecy

[6, Art 25b]. Guaranteeing these principles in all different electoral procedures (including electronic ones) is the challenge that is important to uphold the legitimacy of elections.

The transformation of electoral procedures has been seen as a part of the development of e-democracy, which has gained considerable interest since the dawn of the 21st century. According to Krimmer circumstances like decreasing voter turnout, continuing disconnection of the citizen and the representative and general implications of globalization have driven the process [7].

Introducing remote electoral methods (also, e.g., postal voting) serves the citizen in providing an easily accessible and comfortable means of voting. In addition, remote voting is also considered a viable alternative for disenfranchised voters whose participation in elections has always been dependent on the methods they are offered – voters living or residing permanently abroad, voters who are living in conditions which make it difficult for them to attend elections for geographical reasons and voters with disabilities. All these voters need to make extra efforts in participating in the democratic process, and in all these cases, the principle of universality (or general elections) prevails over the possible concerns connected with the way of voting [8].

The core assumption of this paper is that in order to establish the principle of universal elections (ultimately freedom of vote), additional complementary methods of voting should be offered for the citizens in addition to Election Day voting. Therefore, an experience-based approach on Internet Voting has been presented. Moreover, especially in a small country like Estonia, it is commonly understood that as many voters as possible (and feasible) are to be engaged in voting. Therefore, innovative, comfortable and attractive ways of voting are created. However, the catch for the lawmaker is to find a suitable balance between the principle of universal elections and the rest of the core principles.

The main question this paper aims to answer is how has Estonia managed to implement remote electronic voting as an established and credible voting channel? In order to answer the main question it is necessary to further look at how has the Estonian Internet Voting system developed over the course of its implementation and what impact did it have?

2 Theoretical Background

Remote state-citizen communication has been implemented in many communities, but Estonia has been one of the most eager countries to actively pursue electronic services and procedures [9, 10]. Estonia has featured a remote online voting method since 2005, and has been the only country in Europe (not to say the world) to have it without limitations in all types of elections. However, despite the widespread acceptance of ICT in the Estonian society, the constant development of the system has to guarantee the accordance with up-to-date security and usability recommendations.

Researchers all over the world have early on tried to find suitable solutions to fit the criteria set by universal electoral principles and tackle the questions posed by different fields of interest. The research fields could be divided into four categories – computer science, legal science, social science and political science [11].

Theoretical literature in the computer science is often related to voting from an uncontrolled environment and connected technical risks (e.g. security of the voting device and voting channel). Most of the papers and new scientific thought are being channeled to the vision of finding the safest, tamper-proof, mathematically sound system currently possible [e.g. 12, 13]. This field of study looks for the ideal solution to answer all possible theoretical risks and practical acceptance. The theoretical literature, however, is by and large explored and tested in laboratory conditions and unfortunately is not often viable or feasible in practical implementations. Nevertheless, all these studies also help the operational researchers (including those in Estonia) to further improve systems that are used in practice [e.g. 14, 15]. Additionally, many articles are devoted to a topic that has been seen as the number one confidence builder in remote Internet Voting systems – verification. In theory, verification can be seen in several categories – individual verification, where only the voter is able to verify the trail of the vote, and universal verification, where any person or institution is able to verify the overall results of the I-voting – and in multiple stages – cast as intended (ballots are well-formed), recorded as cast and tallied as recorded– depending on the level of assurance [16]. Estonia has implemented the recorded as cast level in 2013 [17]; however, discussions about possible additional steps in this field are ongoing. The verification scene is very rich and filled with different ideas to offer credible ways towards higher verifiability [18]. Historically, in the early 2000s, the domain of trust building in (remote) electronic voting solutions was dominated by the concept of certification [19]. Over the years, and with the growing possibilities of different solutions, verifiability has grown to be the main factor in guaranteeing the theoretical trustworthiness of an electronic voting solution.

Legal science discussions form the basis for the implementation of a remote electronic voting system, as the question of constitutionality is the first issue to be answered [20, 21]. Additionally, legal scientists are worried about judicial review of the election results and the legitimization of election outcomes [22, 23].

In social and political sciences, Internet Voting has been researched in wide variety. The main interests are summarized by the effect of Internet Voting on effective turnout [24–26], experiences of various implementations, as in Switzerland or Norway [27, 28], or more general discussions on the democratic implications of novel ideas in the electoral field [29, 30]. However, since most of the papers are bound to the context of the appropriate countries, the field lacks social-science papers about the possible introduction of remote electronic voting in other countries and the implications of their use on a more theoretical level.

Moreover, the international community is looking for the best practices in different countries. The most prominent process being the work of the Organization of Security and Co-operation in Europe (OSCE) and its institution in charge of the human dimension, the Office for Democratic Institutions and Human Rights (ODIHR). The organization has intensified its observation of countries that are using alternative remote-voting methods (see www.osce.org/odihr/elections/). Recently it has published a handbook on observing elections using new voting technologies [31].

Literature about the Estonian Internet Voting experience was more concentrated in the early years, right after its adoption [9, 32–34], with some more specialized articles in the last years [7, 10, 17, 29, 35, 36].

Consequently, a gap in the scientific literature concerning a holistic interdisciplinary approach of a remote electronic-voting experience over a longer period could be seen. This paper aims to address the issue by offering an evidence-based approach with insight from electoral practice into the experience of the Estonian Internet Voting program and explaining how Estonia has managed to implement remote electronic voting as an established and credible voting channel.

The theoretical framework of this paper is built on studies of election and constitutional law, the existing literature on the Estonian implementation and applicable studies in other countries.

3 The Development

3.1 Setup Phase of Estonian I-Voting 2002–2005

The year 2002 marked the start of the setup phase, when a very general principle of remote electronic voting was stipulated in the electoral law, allowing the election authorities to start with the project preparations, find a vendor and prepare for the 2005 local elections. Legal debates on the topic were restarted in 2005 to broaden the regulations in the law. This period also holds the discussions about the constitutionality of the system in the Constitutional Chamber of the Estonian Supreme Court.

The 2005 constitutional debate has maintained its position throughout the years of Internet Voting implementation in Estonia. The principle of the “virtual voting booth” as a guarantee for freedom and the understanding of teleological secrecy of voting have become the cornerstones of the Estonian system and are also adopted in other Internet Voting systems. The electoral complaints hold an important role in surfacing possible challenges with the use of Internet Voting. During the first ten years, complaints on equality, secrecy, technical uniformity, procedural soundness and security of the system have been raised. However, no violations have been found.

The constitutionality of an Internet Voting system can be assessed on levels of the general compliance with the electoral principles and the soundness of the implementation of the system in actual elections. The first-level question in the Estonian case could be answered positively, the system is in general compliance with the constitutional provisions. The answer to the second-level question in Estonia could also be seen in a positive light, but it depends heavily on the processes of verification and auditing. In addition, the appropriate measures need constant upgrading and development.

To test the features of the system a limited pilot was held in Tallinn in January 2005 [34]. The first e-enabled elections (for the local government councils) were held in October 2005.

3.2 Pivotal Discussions in the Parliament and Amendments in Electoral Law 2005–2013

The second phase entails a steady rise in user numbers and diffusion of the solution in elections. The legal stipulations had not been changed between the years 2005 and 2011. However, the technical solution was constantly updated for every implementation; the Mobile-ID support and a new voter-application interface were developed for

the 2011 general elections [37]. The end of this phase is marked by a report by OSCE/ODIHR [38], where several key features of the Estonian Internet Voting system and the regulation were revised and recommendations were made. This process was the main engine to launch renewed discussions in the parliament to look over the Internet Voting regulations and amend the procedures to bring more transparency and introduce additional steps on verifiability [39].

After the 2011 general elections, where almost a quarter of all votes were given electronically, the parliament decided to specify the norms of I-voting in electoral law in order to improve the legitimacy and transparency of I-voting. Until 2011, the I-voting procedures had only very brief legislative regulations (despite the discussions in 2005). The parliament established a special working group that, in addition to detailed procedures, had to propose a solution for raising transparency and accountability in the I-voting system [40].

At the same time the technical community, which had been involved by the EMB in discussions about the security and transparency of I-voting, came to the conclusion that a new mechanism for some level of verification was needed in Estonia. The perceived aim was to detect possible malicious attacks on the I-voting system. The EMB has a better chance to discover attacks and react to those if I-voters, even a relatively small amount of them, verify their vote. If somebody finds out and reports that his/her vote is not stored correctly, measures can be taken immediately [37]. In addition, a second channel for executing the verification had to be found, because if voters use the same personal computers for voting and verification, it will only add a limited amount of additional information regarding the voting computers. Therefore, an independent channel, like a mobile phone or a mobile device, was introduced for verification [17].

In 2012, the parliament adopted several amendments to the electoral law, stating that a new electoral committee – the electronic voting committee – was to be created for the technical organization of I-voting.

The first elections where the committee was in charge were the 2013 local elections. The law also regulates that before every implementation the I-voting system must be tested and audited. The most significant change of the law was the statement that, from 2015 on, voters have to have the possibility to verify that their vote has reached and is stored at the central server of the elections and reflects the choice of the voter correctly [39].

The main lesson that can be learnt from this period is that together with the development of the technical environment, also the legal regulation has to be kept up. As Drechsler and Kostakis [41] argue, technology is constantly evolving, but the law is not updated immediately. This allows for a process of consideration where only sustainable and desirable technologies are implemented. Verifiability was not implemented when it was available (years before the actual introduction) but when there was a concrete need due to the recent discussions in the country. Moreover, only the quiet period between elections allowed these discussions to take place where a reasonable system was selected and implemented. Additionally, widely accepted reports and input from the specialists' community have shown to be strong initiators in the 2011–2012 legal processes. Moreover, the timing of possible reforms has to be taken into account, as the election-free period from 2011 to 2013 came after a long period of back-to-back elections and was the only time where EMB and the parliament could take up a larger reform of the system.

3.3 Recent Years 2013–2015

The third phase of development could be defined in the last three elections, where the share of I-voters among all voters has stayed high and additional steps of individual verification – recorded as cast – were implemented [39]. The number of I-voters who verified their vote has grown through the years, reaching 4.3% in the 2015 elections (Table 1). Despite the relatively small number of verifiers, mathematically the absence of any large-scale attacks or manipulations is notable [17].

Table 1. Detailed data on Internet voting in Estonia 2005–2015 (Data: National Electoral Committee)

	2005 Local Elections	2007 Parlia- mentary Elections	2009 European Parliament Elections	2009 Local Elections	2011 Parlia- mentary Elections	2013 Local Elections	2014 European Parliament Elections	2015 Parliamentary Elections
<i>Eligible voters</i>	1,059,292	897,243	909,628	1,094,317	913,346	1,086,935	902,873	899,793
<i>Participating voters (voter turnout)</i>	502,504	555,463	399,181	662,813	580,264	630,050	329,766	577,910
<i>General voter turnout</i>	47.4%	61.9%	43.9%	60.6%	63.5%	58.0%	36.5%	64.2%
<i>I-voters</i>	9,317	30,275	58,669	104,413	140,846	133,808	103,151	176,491
<i>I-votes counted</i>	9,287	30,243	58,614	104,313	140,764	133,662	103,105	176,329
<i>I-votes cancelled (replaced with paper ballot)</i>	30	32	55	100	82	146	46	162
<i>I-votes invalid (not valid due to a nonstandard of vote)</i>	n/a	n/a	n/a	n/a	n/a	1	n/a	1
<i>Multiple I-votes (replaced with I-vote)</i>	364	789	910	2,373	4,384	3,045	2,019	4,593
<i>I-voters among eligible voters</i>	0.9%	3.4%	6.5%	9.5%	15.4%	12.3%	11.4%	19.6%
<i>I-voters among participating voters</i>	1.9%	5.5%	14.7%	15.8%	24.3%	21.2%	31.3%	30.5%
<i>I-votes among advance votes</i>	7.2%	17.6%	45.4%	44%	56.4%	50.5%	59.2%	59.6%
<i>I-votes cast abroad among I-votes</i>	n/a	2% 51 countries	3% 66 countries	2.8% 82 countries	3.9% 105 countries	4.2% 105 countries	4.69% 98 countries	5.71% 116 countries
<i>I-voting period</i>	3 days	3 days	7 days	7 days	7 days	7 days	7 days	7 days
<i>Share of I-votes that were verified by the voter</i>	n/a	n/a	n/a	n/a	n/a	3.4%	4.0%	4.3%

The discussion about transparency and verifiability in a remote electronic voting system has clearly defined the general Internet Voting discussion in the past [7, 15, 42] and will define it in the nearer future. The same is true for Estonia, despite introducing the first stages of verification [14, 43].

The OSCE/ODIHR election specialists’ report [44] emphasizes the need for added verifiability and transparency in the conduct of electronic elections, and according developments have also been evident in the preparation for the 2017 local municipal elections. According to the plans of the organizers is the voting solution thought to be fitted with added features like universal verifiability or wider auditability. All changes serve the underlying purpose of building the trust into fair and sound conduct of elections.

4 The Impact of Internet Voting

Estonia has implemented Internet Voting in eight consecutive elections. It was the first country, in 2005, to introduce remote electronic voting in pan-national binding elections and was leading a kind of “race” at the beginning of the 2000s for introducing remote electronic methods in elections [34, 45]. The number of Internet Voters has been rising from the beginning, reaching more than 176,000 voters and comprising more than 30% of all given votes in the 2015 parliamentary elections.

Internet Voting started low, with only 9,317 I-voters, but began to grow in the following implementations. The low start and the following step-by-step rise in numbers could be explained by Rodgers’ theory on the diffusion of innovation [46]. The number of eligible voters and turnout numbers are distinctively different per election type. For example, European Parliament election turnout is also by general measures [47] lower than in other election types, like local or national elections. Therefore, the absolute numbers as seen in Fig. 1 have fluctuated per election type after reaching the highest level in the 2015 parliamentary elections.

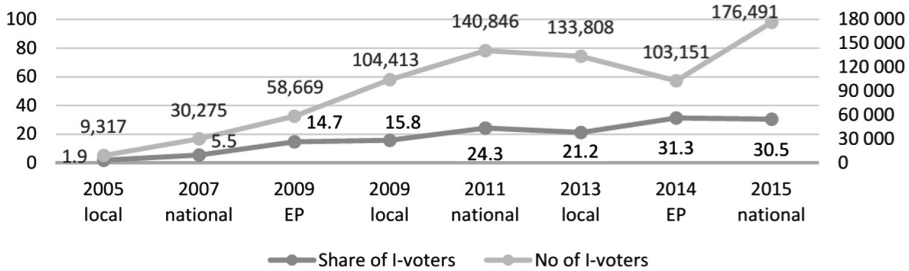


Fig. 1. Number of I-voters and share of I-voters from all voters in 2005–2015

However, the share of Internet Voters among all voters has shown a steady rise despite the absolute number fluctuations, having risen to over 30% in the last two elections. Moreover, Internet Voting is offered for a seven-day period during advance

voting, and since 2011, there have been more electronic advance voters compared to paper advance voters [48]. This process has had an impact on the paper-voting organization by putting the local governments under pressure to reduce the number of polling stations, as the attendance numbers have decreased, especially in rural areas. The effect is emphasized by the finding that the relative distance from the polling station has a clear correlation to the use of Internet Voting [49, 50].

When looking at the impact of the Internet Voting results, at least three categories could be distinguished: firstly the impact on the election turnout, whether adding a new voting method raises the turnout; secondly the effect of socio-demographic factors on the use of Internet Voting; and thirdly the relation of Internet Voting and the election results. Scientific reports on Estonian Internet Voting have been compiled after all eight elections [50], and the results have been publicly discussed and are available on the EMB webpage.

One of the most frequent questions with any novelty electoral solution is the impact on turnout. Without a doubt, the hope to have a positive influence on the general turnout was one of the claimed aims in the early discussions of I-voting in Estonia [34]. Nevertheless, it is difficult to assess the actual impact of Internet Voting on turnout because a direct comparison of the same election with and without I-voting is not possible. Perhaps a better question to be asked is what share of the electorate would not have participated in the voting, if the Internet Voting opportunity had not been provided. Unfortunately, only voter survey results can be used here. One exception is the case when Internet Voting is the only possibility for the voter and he/she uses this possibility. In the local elections, Estonia does not provide for voting from abroad by postal ballot or at a diplomatic representation, therefore voting over the Internet is the only voting method abroad [39]. The number of I-voters from abroad has grown after every election (Table 1).

The relation of the absolute number of I-voters and the general turnout has not been a linear one. Scientific surveys [e.g. 49] have shown that most Internet Voters are actually paper voters who decide to switch the voting method; only a relatively small number of voters have started voting because of such a possibility. In 2005, I-voting seems to have had a slight effect on the increase in the turnout of voters who sometimes vote and sometimes do not. In 2007, already approximately ten percent of the questioned I-voters said that they certainly or probably would not have voted without having had the possibility to vote via the Internet [51]. Trechsel and Vassil show [52] (in 2011) that the percentage of the I-voters questioned who certainly or probably would not have voted without having had the possibility to vote via the Internet has risen to 16.3%, which allows for the conclusion that the overall turnout might have been as much as 2.6% lower in the absence of such a method of voting. That is already a significant marker when one looks at the impact of Internet Voting on the overall turnout [39].

Another interesting question is whether Internet-based voting shows any difference of representation within social groups. Remote electronic voting removes physical barriers hindering participation in elections of the aged, disabled or other groups with restricted mobility or ones that have difficulty in attending polling stations (e.g. persons having tight work schedules or working, studying or travelling abroad, parents of small children and persons living in regions with poor infrastructure), assuming, of course, that these people have access to the Internet.

Trechsel et al. and later Vassil and Solvak have concluded in their reports following the experience of Internet Voting from 2005 to 2015 that education and income, as well as type of settlement have been insignificant factors when choosing the Internet instead of other voting channels [50, 52]. One of the most important findings of the studies researching I-voting predictors until the 2009 elections has been that it is not so much the cleavage between the Internet access haves and have-nots, but clearly computing skills and frequency of Internet use. However, since the 2009 local elections, where more than 100,000 voters used Internet Voting, those factors have become non-detectable [52]. Confidence (trust) in the I-voting system and procedure has been the most significant factor throughout the years that directs the voters' choice in using a remote electronic voting method [15, 42]. Vassil et al. [46] have also claimed that based on empirical analysis at least a three-election period has to be studied to have adequate results for assessing the impact of different features on Internet Voting.

The question for political parties is whether the use of I-voting has an influence on the overall election results. Estonian parties that have favored I-voting in their campaigns and supported this voting method, have received more I-votes compared to those parties not supporting the use of I-voting. However, studies have shown that political left-right auto-positioning does not play an important role when choosing a voting channel [52]. In a separate study on the possible bias of I-voting on election results a similar conclusion was drawn – I-voting is politically neutral and does not have a direct impact on the election results [50].

In conclusion, a steady rise in the use of Internet Voting in Estonia was seen until the 2011 general elections; after that, the absolute number of voters has been fluctuating because of the nature of the elections it is used in, but the share of I-voters has kept on rising. Additionally, in advance voting, since 2011 I-voting has been more popular than traditional paper voting. When looking at the impact factors it can be seen that only a small amount of I-voters are completely new voters, the majority of I-voters are converted paper voters. A stronger impact could be made out in local elections, where I-voting is the only voting method from abroad. Additionally, socio-demographic features in determining the use of I-voting have been fading since the 100,000-voter hurdle was broken in 2009. Nevertheless, the factor of confidence (trust) in the system and procedures has stayed the most important determinant of I-voting use. Finally, several studies have looked into the political influence of I-voting and have found that I-voting is politically neutral and does not bring about biased results in elections. However, one should refrain from drawing conclusions on the impact of Internet Voting based solely on one execution of the method. At least three elections have to be analyzed to see the effects unfolding [50].

5 Comparison with Experience from Switzerland and Norway

The Internet Voting landscape has been quite active [53–55]. Remote electronic voting has been utilized on some level in more than twenty countries, and several countries analyze possible implementation. The largest steps in Europe and maybe even worldwide have been made (beside Estonia) in Switzerland and Norway. Therefore, the experience of these two countries is analyzed next.

Switzerland, as a confederation, hosts its online elections in the cantons. With postal voting being a long-time favorite in a country where elections and referendums are held often, the step to online solutions was not far-fetched. Different cantons have had pilots and try-outs since the early 2000s. Currently two different technical voting systems are in use, and less than ten Swiss cantons use Internet Voting on some level of their electoral activity (until 2015 there used to be three different solutions with more than half of the cantons participating in Internet Voting). Identification is based on unique passwords, and individual verification is offered. Since 2008, voting is also offered for Swiss expatriates. Similar to Estonia, the Swiss reached a stable user experience at the beginning of the 2010s and are today looking for possibilities to enhance their (different) systems by making them more transparent, observable and verifiable. The Swiss experience has also been studied by Schweizer Bundesrat [27, 56–61].

Norway started its Internet Voting project with two pilots, the first in the 2011 local elections and the second in the 2013 general elections. Both pilots were held in a small number of local-government units. Norway implemented the system after rigorous constitutional analysis and an international public tender [62]. From the beginning, recorded as cast verifiability was implemented, and a large effort was deployed to ensure public trust with the latest security solutions for the system. Technically and from the public perspective, both pilots were perceived as successful. However, after some evaluation, the Norwegian government decided to discontinue Internet Voting pilots due to possible risks in the system's security with the underlying reasons being the change in political leadership and the lack of trust the politicians held for the system. The Norwegian pilots are discussed in detail by OSCE/ODIHR [28, 63–65].

As seen in Table 2, there is no single working solution for introducing Internet Voting. The compared countries show differences across the board and are/were nevertheless able to implement Internet Voting in their respective countries.

Table 2. Comparison of main features in the Estonian, Swiss and Norwegian I-voting experience.

	Estonia	Switzerland	Norway
Authentication method	eID	Passwords through postal system	Unique ID tied with mobile phones
Implementation style	Snap implementation, nationally	Step-by-step, canton-based	Step-by-step, only limited pilots
Verifiability	Individual	Individual	Individual and universal
Multiple vote casting	Yes	No	Yes

6 Conclusion

In conclusion, what the Estonian experience, so far, has shown is that it has been implemented as a solid voting method. The channel has also become an integral part of the Estonian so-called “e-stonia” narrative. Many news articles about Estonia in the

international media define the country by its e-capability in the electoral field. Nevertheless, in order to see beyond the shiny surface presented in the newscasts, questions that are more detailed need to be asked.

The Estonian experience in implementing Internet Voting could be seen in three stages, where firstly constitutional debate and introduction of the novelty system took place, after five elections a refreshment of the legal stipulations was in order and additional measures for more transparency and accountability in the system were debated about, and lastly a three-election period could be distinguished where a new level of verifiability was applied and a gap between elections ushered in a new discussion about additional measures of confidence.

What can be learnt from the Estonian experience to date is that the build-up of Internet Voting turnout takes time, as does looking at the diffusion of any innovative solution. Additionally, the effects and impact of the added voting method will not appear after the first application; it has been claimed that at least three elections have to be taken into account. As for the impact of the Estonian system, it has been found that introducing Internet Voting has had a slightly positive influence on the general turnout, but most Internet Voters are former paper voters who started using a different method of voting. However, in specific groups (like abroad voters) the effect on turnout is present. Different socio-demographic values, like type of settlement or rate of computer use, were important determinants of I-voting before the 2009 elections, but they have become irrelevant since. The principal important factors for voters to choose I-voting through all elections have been trust and confidence in the solution.

When comparing the Estonian experience and solution to Switzerland and Norway, it can be seen that no single characteristic makes up a working system, and verifiability and trustworthiness are features other implementers are investing in as well. Each Internet Voting system has been developed in line with the needs of the actual context it was implemented in. Therefore, this does not allow for generalizing based on individual features; it is the complete solution that needs to be looked at. Additionally, the factor of political will and support in explaining the rise or demise of such a novelty idea should not be easily discarded. What can be learnt from Norway is that the ways of implementation are irrelevant if the politicians are not convinced that the election results would remain the same regardless of the new voting channels.

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