

Chapter 11

Binding Decision-Making



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Abstract Goos and Korthagen present a detailed analysis of the three case studies “Green Primary”, “Voting in Estonia” and “Voting in Switzerland”, which all describe different practices of online ballots. Relevant contextual factors of the digital tools with regard to the key dimensions input legitimacy, throughput legitimacy and output legitimacy are assessed in order to better understand the role these digital tools can play in the political decision-making process. The case studies are based on desk research and interviews with organizers and researchers of the e-participation processes and analyse the digital tool, the participants, participatory process and the results of the digital tool. The analysis shows that online voting tends to be more inclusive and that the process as such requires different steps to strengthen security and privacy of the online ballot. Furthermore, no clear indicators for an often-claimed increase of turnout exist, and, in general, scaling up online elections to a larger framework than the rather restricted ones analysed in this chapter requires major efforts with regard to legal, technical and social aspects.

11.1 Green Primary

11.1.1 Introduction

In 2014, the online Green Primary was organized: An online election to choose the two lead candidates (*Spitzenkandidaten*) for the European Green Party (EGP). During the elections for the European Parliament in 2014, the aim was to reinforce the link between the European Parliament and the European Commission via the election of leaders of political parties who could become the President of the Commission (see Hobolt 2014). Before the Lisbon Treaty, the President of the Commission was appointed on the basis of a consensus decision of European leaders

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in the European Council. In the Lisbon Treaty, this procedure for choosing the President was modified. Five European political parties nominated their lead candidate for the position of the Commission President. For the internal election of the *Spitzenkandidaten*, the political parties followed different procedures. The European Green Party chose to organize an online election.

More specifically, the selection procedure determined that “*any European Green politician with the ambition to run as the leading EGP candidate needs to be nominated by his/her national party and receive the support from at least four to a maximum of eight of the 33 EGP member parties. Moreover, all EU member parties have the right to exclusively support one candidate*” (Put et al. 2016: 16). In the process of determining the lead candidates for the EGP, two other procedures are of importance:

- In the voting process, every vote counts as one: No weights for member parties or countries were applied in assessing the total amount of votes for a candidate.
- Two winning candidates are to be elected, who cannot be of same sex or Member State (Put et al. 2016: 17).

Four nominees had been endorsed by the EGP member parties to be the contenders in the open online election: José Bové, Ska Keller, Rebecca Harms and Monica Frassoni. The organization of this online election by the EGP was called the online “Green Primary”. Green Party leader Natalie Bennett argued: “*This primary is an experiment in extending European democracy well beyond its former limits. [...] It will be the first-ever pan-European primary election, a chance for 16 and 17-year-olds to influence a vote from which they are otherwise excluded, and we hope will provoke a wide debate not just about the contenders but about the possibility of giving citizens a much broader say in European decision-making.*”¹ The purpose of this online procedure was to make a visual appeal for European Union (EU) decision-making that actively involves European citizens. Moreover, the Committee of the European Green Party (2014: 3) also mentioned boosting the—future—campaigns of member parties by creating publicity and increasing capacities through the collection of email addresses of Green-minded voters as a goal. The interviewed academic researcher also described an increase of “*the commitment of the electors to the actual voting as they have their say about the candidates*” as a possible effect of the e-voting procedure (interview with a researcher).

The EGP has spent about 200,000 € on the Green Primary (including online voting implementation costs, security and legal advice) and about 250,000 € for the campaign (for staff, meetings, design of campaign material, publicity and translation; Committee of the European Green Party 2014: 6).

The online voting took place at the website www.greenprimary.eu between 10 November 2013 and 28 January 2014. This procedure was more inclusive than the selection procedure of other European parties. As the scholars Put et al. (2016:

¹<https://www.greenparty.org.uk/news/2013/11/10/bringing-democracy-to-europe—the-european-green-primary-kicks-off-todayhas-begun>, accessed 15 October 2018.

17) conclude: “*Self-evidently, this primary election is located at the extreme inclusive end of the inclusiveness–exclusiveness continuum. The other four Europarties each organized party conferences to select the final candidate for EC presidency. These party agencies were composed of party delegates in the cases of PES, ALDE and EL, and additionally high-level intra-party officeholders in the case of EPP. In other words, selectorates of these four parties are situated towards the more exclusive end of the continuum when compared to the EGP procedure.*”

11.1.2 Participants

The voting was not only accessible for Green Party members, but to every EU resident of 16 years or older. Participants thus did not have to be a member of the Green Party, but only had to tick a box that they shared green values. A total of 22,676 persons voted and they originated from all EU Member States (Put et al. 2016: 16). The Committee of the European Green Party (2014) reports that after an initial peek at launch, participation decreased until the last 14 days. The Committee of the EGP also concluded that the accessibility could be improved. The necessity of certain digital skills and usage of a mobile phone appeared to be causing problems for some people, especially for older generations (Committee of the European Green Party 2014: 5).

This final number of voters is evaluated as disappointing by different media: “*With a total of 375 million voters across the EU, the paltry participation numbers were a flop. The Greens had originally set to mobilize 100,000 participants—a far cry from actual turnout.*”² But even within the Green Party the goal of 100,000 participants might have been utopian, the National Democratic Institute (2015: 73) argues: “*With EU-wide party membership totalling around 150,000 voters, the EGP’s goal for participation was ambitious.*”

Because only name, country, postal code, phone number, email address and a confirmation of the voter that he or she is above 16 were requested in the online voting, the representativeness of voters cannot be determined on the basis of those data (interview with a campaign manager). The only criteria the party had for representation was national participation. “*So the only assessment we did, was if we had a good representation of countries and yes, we had participants from all over Europe, so this gave us the confidence that this was a pan-European vote*”, the campaign manager argued in the interview, but “*there are differences of course between the number of participants between countries and [...] the number of participants were not proportional to the number of citizens from the country and the European Union. And so it was not a perfect representation of course and also*

²<https://www.dw.com/en/online-voting-flops-for-european-green-party/a-17395839>, accessed 15 October 2018.

the number of participants was not very high in total" (interview with a campaign manager).

To engage people for the open online primary, offline debates were held around Europe to give voters the chance to see the candidates in action. These meetings were open to anyone and not just aimed at members of the Green Party. Moreover, the meetings were also broadcasted online. The engagement strategy also informed voters with press releases, news reports on the website and an online blog on the different steps before and during the online election process and other information on the online voting process on the primary website as well as on the website of the European Greens. Interaction was promoted and channelled on social media (interview with a campaign manager). Through Twitter and the EGP Facebook page, people were also invited to ask questions to the contenders. A video about the primary was made and viewed 2746 times on YouTube.

The Committee of the EGP reported a high amount of mostly positive media coverage for the Green Primary. In contrast, political scientist Arzheimer strikes a more negative tone claiming that those who were not frequent visitors to the Green Party websites, probably did not know about the e-voting opportunity. *"The Greens need to market it more aggressively, and the media need to report on it more. That would increase participation."* [...] *"The purpose of this measure was to generate attention. That just didn't work."*³ Both interviewees—the academic researcher and the campaign manager—assessed the effectiveness negatively. The online campaign manager argued: *"the most important factor that led to low participation was that we didn't make enough promotional mobilisation in the national countries on the ground. [...] It's very hard to run a campaign on a European level only from Brussels"*.

Insiders of the European Parliament Beck et al. (2014: 93–94) evaluated the engagement strategy in Germany, France and Spain in the Green Primary. For Germany, they concluded: *"There was a lack of communication following the Council of the European Green Party of April 2013, when the idea of a Green Primary was first decided, between the delegates who attended and the general party membership. Although this was a useful first experience, it is clear that the procedures for campaigning and voting will have to be started earlier and made technically easier to persuade more people to participate next time."* For France, they evaluated: *"The media coverage was modest but rather positive in France, probably due to the popularity of candidate and green MEP José Bové. The main difficulty for the Green European Primary was that it took place during the campaigns for local elections which ultimately drew away attention leading to a disappointing turnout."* In Spain, primaries are popular in the political debate. The relatively high number of Spanish voters in the Green Primary is quite a low number in comparison to the total number of votes Podemos had reached in his primary. The overall judgement about the engagement in Spain is therefore also quite negative.

³<https://www.dw.com/en/online-voting-flops-for-european-green-party/a-17395839>, accessed 15 October 2018.

Also, a broader public debate about the European elections or Spitzenkandidaten failed to materialize (Committee of the European Green Party 2014: 5).

11.1.3 Participatory Process

Out of the four contenders, two final figureheads needed to be selected to lead the EGP campaign. To vote in the online Green Primary, people had to register on the Green Primary website and provide an email address and a mobile number. After registration, the participant received an email with an activation link and was able to vote by selecting the two Green leading candidates of their choice.

The campaign manager we interviewed rated the voting system as quite user-friendly, but he admitted: *“sometimes we had to prioritise security over user friendliness or, let’s say, easiness. So, sending an email and an SMS and basically sending people two passwords, or two ways of identification, or logged in data, let’s call it like this, is already. . . you can say not as user friendly as possible. But we had to compromise with security and anonymity”*. The system counted more registrations than votes, but the number of people they “lost” on the way is not that high according to the campaign manager: *“It’s not that high. [. . .] you could say we lost twenty percent on the way.”* As the campaign manager rightly argues, casting a regular vote via a paper ballot also involves several barriers for voters along the way. The loss of voters might be partly explained by one minor technological issue regarding SMS across the different countries in the EU, the campaign manager stated: *“We were sending out SMS and that means that there was an interaction between our platform and the national phone provider. And with some very small number of national phone providers, this interaction didn’t work properly. Because we don’t have a European phone provider and it was not that much the fault of our platform or technology, but more of the other end. But this was a minor problem that we observed.”*

Although the main participation consisted of voting for the two Spitzenkandidaten, the process around the Green Primary also included other forms of participation, such as via the debates in nine countries or Facebook chats with the contenders. On the website of the Green Party, updates with the highlights in this campaigning process are provided that give a glance of the public interest in these events. The Facebook chat with one of the contenders, Ska Keller, was summarized as follows: *“The chat, which took place on the EGP Facebook page, was a truly European affair. Questions came from Belgium, Bulgaria, Finland, France, Ireland, Spain and the UK. Ska faced difficult questions about not only her qualifications, but also her views on crucial issues facing Europe today—massive youth unemployment, access to affordable third-level education, migration and refugee rights, the transatlantic trade agreement (TTIP) that’s currently being discussed by the EU and US, and the transition to sustainable energy.”*

Also the chat with another contender, José Bové, was framed as a European one, with questions from Belgium, Croatia, Hungary, Ireland, the Netherlands, Portugal

and Spain. The blog sketched a conversation about issues on which Bové has been active before—GMO food, agriculture, shale gas—as well as other areas like EU foreign policy and immigration. The Committee of the EGP reported that the chats reached an audience of between 4000 and 10,000 per chat. Daily messages with the hashtag #GreenPrimary were reported on the EGP website during the process. The hashtag has been used almost 15,000 times (Committee of the European Green Party 2014). The EGP’s Facebook page was liked 30,000 times during the online campaign (from 10,000 to 40,000).

11.1.4 Results

The 22,676 participants voted as follows: 11,791 votes for Ska Keller; 11,726 for José Bové; 8170 for Rebecca Harms and 5851 for Monica Frassoni (Committee of the European Green Party 2014). This made Keller and Bové the winning duo, who became the leaders of the Green Party in the European Parliament election and the Green candidates for the President of the European Commission.

The turnout in the online elections was disappointing. In relation to the membership, turnout was around 22%. But in relation to all European citizens who share Green values, this turnout is of course a much smaller proportion. At the same time, the participation rate for a Green congress is normally “*between two hundred and three hundred*” (interview with a campaign manager). With that in mind, the participation in the online voting process is much higher. Nonetheless, the campaign manager is not satisfied with the final number of voters: “*the number of participants, 22,000, a little bit more, was not too satisfied for us. It was ok but we hoped for more.*” About the expected 100,000 voters, he replied: “*It was not an official number [...] But in terms of participation, we were not totally happy*” (interview with a campaign manager).

It is hard to evaluate the cost-effectiveness of the online Green Primary. Some argue this is certainly too much for a “flop”: “*If you have 200,000 divided by 20,000 participants, that makes it 10 euro per vote. That feels to me as a bit too much, right? [...] The problem is of course that the fixed costs are enormous*” (interview with a researcher). Deutsche Welle reflects: “*How were these relatively unknown politicians supposed to lure European voters to the computer? Their strategies for the European elections hardly differed.*”⁴ Others underline positive achievements in the Green Primary. The National Democratic Institute (2015: 73) for instance: “*Functionally, the Green Primary was successful. The EGP empowered national parties to nominate candidates, constructive debates were held across Europe, citizens could engage the candidates and the online voting period lasted nearly 80 days.*”

⁴<https://www.dw.com/en/online-voting-flops-for-european-green-party/a-17395839>, accessed 15 October 2018.

In addition, as one of the goals was to boost the campaign of the EGP and its member parties, it can be seen as a positive result that 39.75% of the participants (9014 voters) subscribed to newsletters. And the Green Primary has attracted public attention (Committee of the European Green Party 2014, Cremers in Put et al. 2016). The Committee of the EGP counted 4000 media reports about the two leading candidates from across Europe. The researcher we interviewed, concluded: “*in terms of awareness and exposure it has of course been an ideal instrument, because it generates much attention and the party mobilizes its own members and militants.*” But, on the other side, the researcher worried that the openness of the election online made the Green Party vulnerable for opponents who can misuse the opportunity to vote, to manipulate the election in their own interest. This not only leads to failed elections, but also to bad press.

The conclusion of Beck et al. (2014: 95) might summarize these remarks in an overall judgement: “*The careful framing of the Green Primary as an experiment in European inner-party democracy turned out to be a wise choice. Attempting to involve people in choosing top candidates who were unfamiliar to them proved to be an uphill battle.*”

In the end, with regard to the presidency of the European Commission, the final result was that Jean-Claude Juncker got the position, since the People’s Party won a plurality (29%) in the 2014 elections.

11.2 Voting in Elections in Estonia

11.2.1 Introduction

Several objectives propelled the introduction of Internet voting in Estonia: one was to increase the efficiency of the public sector using digital information and communication technologies, another was to enhance user friendliness and effectiveness (Maaten 2004). Others were to increase or at least halt the decrease in electoral participation rates, to make elections more attractive to young people, and to improve accessibility for people with disabilities and for Estonians living abroad (Maaten 2004; OSCE/ODIHR 2007; Pammatt and Goodman 2013). According to Solvak and Vassil (2016: 10), Internet voting “*was seen as an additional means to increase the convenience by which citizens can participate in political life and therefore constituted an extension of an already started motion to develop modern e-governance*”.

Before Internet voting or i-voting was introduced on the national level, several tests were carried out at lower levels. The first trials had already been conducted in 2004 and, as no problems were identified, the way was clear for the first binding use of Internet voting at the local level in 2005. After these elections were considered successful and secure, there were no more barriers to Internet voting at the national level for the parliamentary elections in 2007 (Trechsel 2007). In 2009, the Internet option was offered for the European elections in June, and again for local elections in

October. In March 2011, it was possible to cast a vote via the Internet for the second time for the national parliamentary elections; another online election took place in October 2013 on the local level, and another in spring 2014 for the European elections. Online voting was also offered for the parliamentary elections in March 2015, and the most recent i-voting took place in October 2017 at the local elections.

The kind of Internet voting discussed in this case study is remote voting via the Internet without any kind of supervision by official authorities. The use of voting machines, either at polling stations or public places such as libraries, kiosks or shopping malls, is excluded because these forms of voting focus on increasing the efficiency of the voting process, while remote Internet voting mainly aims at improving the convenience for voters. Internet voting in Estonia is one channel of many and follows the “double envelope voting method” of offline voting. The following steps illustrate the i-voting process⁵:

- Voter inserts ID card into the card reader.
- Opens the i-voting website (www.valimised.ee).
- Downloads and runs voter application.
- Identifies himself/herself by entering PIN1 code.
- Views the displayed list of candidates in the voter’s electoral district.
- Makes his/her choice.
- Confirms his/her choice by digital signature (by entering PIN2 code).
- Receives a notice that the vote has been accepted.

The general principles of Internet voting in Estonia are: i-votes can be cast from the tenth day until the fourth day before the Election Day; i-votes can be recast as often as a voter wants because only the last vote counts; an i-vote can always be overwritten by a vote cast at the polling station; and the same rules and election principles apply to Internet voting as to regular offline voting.⁶

The usual election procedures also apply to the outcome of the Internet channel; there is no difference to the presentation of the results from other voting channels. Detailed information about Internet voting, including election results, is provided online on the website www.valimised.ee.

In Estonia, the general responsibility for conducting elections lies with different electoral committees, that is, the National Electoral Committee (NEC), county electoral committees and voting district committees. Until 2012, the National Electoral Committee (NEC) was in charge of overseeing Internet voting and ensuring its smooth operation. As a reaction to complaints about the capability of the NEC to deal with Internet voting issues appropriately (OSCE/ODIHR 2011), a separate Electronic Voting Committee was established in 2012 and has since been responsible for conducting Internet voting. The technical requirements are still established by the NEC, but the system itself is administered by the Electronic Voting Committee.

⁵<https://www.valimised.ee/en/internet-voting/internet-voting-estonia>, accessed on 2 January 2019.

⁶Ibid.

When the Internet option was offered for the first time in 2005, the legislative regulations for e-voting were very brief. In 2012, a large part of the electoral law was revised as the share of e-voters had been steadily increasing, and the authorities wanted to improve the legitimacy and transparency of e-voting (Solvak and Vassil 2016). In general, the regulatory framework consists of several statutes at different political levels, the Local Government Election Act, the Referendum Act, the European Parliament Election Act, the President of the Republic Election Act and the Riigikogu Election Act. Another central legal building block of Internet voting is the law regulating the use of digital signatures, the Digital Signature Act (DSA) of 2002. All Estonians have an identification card, which includes a digital certificate (signature).

However, all these regulations have not been adopted without contestation: Concerns about secrecy were raised, but overcome by reference to the possibility of overwriting the vote and casting a ballot as often as the voter wants (Drechsler and Madise 2004). In 2005, the Estonian Supreme Court decided that the possibility of casting a vote as many times as the voter wants appropriately balances all electoral principles (Supreme Court of Estonia 2005).

The idea of introducing Internet voting surfaced around 2000 and was supported by politicians and the public administration from the beginning. The initial proposals for Internet voting were made by the Estonian Prime Minister (Mart Laar) and the Minister of Justice (Märt Rask) at the time. Their initiative provided high-level support and helped to overcome the initial hurdles to implementing Internet voting. Nevertheless, not all parties were or are in favour of Internet voting; there has always been opposition (Pammett and Goodman 2013). When the first drafts of the revised election acts were discussed in parliament, several points were raised (Drechsler 2003): for instance, issues of unconstitutionality, proneness to fraud or possible inequalities resulting from digital divides.

11.2.2 Participants

The target group for Estonian Internet voting is the Estonian electorate of about one million citizens. In fact, the size of the electorate varies depending on the type of election, for instance, non-citizens are not allowed to vote in national elections (Solvak and Vassil 2016). In order to be able to vote, a person must be entered on the registered list of voters, must be at least 18 years of age and living at an address entered in the population register.

In general, the tool is accessible to every member of the target group. The main requirements are possession of a digital ID, Internet access and access to a computer. Owning a digital ID is compulsory for all Estonian citizens and public Internet access is widely available as are computers, which can be used in a public institution, for example, a library. The only minor potential obstacle for voters in terms of user-friendliness is that the usual browser cannot be used for online voting; a specific application has to be downloaded and installed instead. “*With regard to this*

procedure there might be room for improvement, but as we cannot trust the browsers, it is necessary for security reasons” (interview with an administrator).

While at the beginning, when Internet voting was first introduced, the e-voters indeed showed particular sociodemographic, attitudinal and behavioural characteristics, in the meantime, Internet voters are non-distinguishable from other voters (Solvak and Vassil 2016). Vassil (2015: 2) stated that *“since 2011, we cannot talk about a typical e-voter because chances of online voting are the same for the young and old, educated and less educated, PC-literate and less PC-literate. In other words, Internet voting has diffused”*. In addition, Vassil et al. (2016: 458) state that *“technology has the potential to bridge societal divisions and ease political participation, not only for the already connected and resourceful, but also for the less privileged, who have fewer resources and remain at the periphery of rising modern technologies”* and that *“the potential enabling effects did not surface immediately in the electoral realm after the introduction of the new voting technology, but required a period of at least three elections to appear”*. According to one interviewee, *“Internet voters had slightly higher educational status, a bit more Estonians than Russians who live here, a bit more urban than rural voters. But after three elections, these tendencies faded. [. . .] Therefore, we cannot say who the e-voter is, it is rather a normal voter, who is just using it”* (interview with an administrator).

To start with, the introduction of Internet voting was accompanied by a special communication and engagement strategy in order to spread information about the system and the additional voting channel. As awareness of the system is now very high after eight elections involving Internet voting, a special strategy is no longer required (interview with an administrator).

11.2.3 Participatory Process

For the case of e-voting, the participatory process can be equated with the normal voting process. With regard to the sort of input participants can give, the same ballot is cast by the Internet voter as at the election booth. Citizens can e-vote in local, national and European elections. If one chooses to vote online, a special voting application has to be downloaded to the computer. The voter identifies him- or herself using digital ID and a PIN. If the citizen is eligible to vote, he or she can cast a ballot and use a second PIN to confirm their choice (Solvak and Vassil 2016). The votes are aggregated, and candidates are elected on this basis. The e-vote is deleted if the citizen later casts a paper ballot.

Debates about the secrecy of e-voting in Estonia emerge on a regular basis: in 2011, for instance, a student claimed that it would be easy to manipulate the system and sought the nullification of the election results (which was rejected by the Constitutional Review Chamber, because no fraud was detected and the possibility for manipulation is not sufficient reason to nullify the results; Sivonen 2011). The elections of 2014 were also accompanied by a debate about security issues. It is a

major challenge for Internet voting to guarantee the secrecy and transparency of the voting process at the same time. The democratic principles of equal, free, direct, secret and universal suffrage apply to Internet voting as they do to paper-based voting. Asked about his opinion regarding security aspects of Internet voting in Estonia, one interviewee stated the following: *“We can never be 100 percent secure. No one can ever be 100 percent secure. But we are ready to work with the problems. Before and after every election we conduct several procedures. We don’t use the same system as in 2003, we update it before and after each election. We keep up with the times. [...] We are not 100 percent secure, because you can never be 100 percent secure, but we are pretty confident that everything works out”* (interview with an administrator). Privacy and data protection issues in particular are addressed by *“public-private key-pair crypto and full anonymization according to electoral provisions [...], additional features such as end-to-end verifiability are being developed”* (interview with an administrator).

11.2.4 Results

In the case of Internet voting, there is an obvious relation between the citizens’ contribution and the outcome of the decision-making process because the votes are aggregated and define the election outcome together with the non-Internet votes. Since the introduction of e-voting, Estonia has held nine elections, in which the entire electorate could use Internet voting as an additional voting method. The first opportunity to use the i-voting option was in the local elections in October 2005 and resulted in an overall voter turnout of 47.4%.⁷ Back then, only 1.9% of the voters used the option to vote online. The turnout for the 2007 national elections was approximately 62%, a figure reportedly higher than in the previous two elections held in 2003 (58%) and 1999 (57%). The percentage of voters making use of the Internet option in the 2007 election had increased to 5.5%. The European Parliament election in June 2009 was the third occasion, where Internet voting was an option. In total, 43.9% of all Estonians participated, compared to approximately 27% in the 2004 European Parliament election. In the 2009 European election, almost 15% of all voters voted online. The local elections in 2009 showed a voter turnout of approximately 60%, of which almost 16% used the Internet option. In the national elections in March 2011, 63.5% of eligible voters participated, of which 24.3% voted online. The local elections in 2013 showed a voter turnout of 58% and a share of 21.2% Internet voters. In the European Parliament Election in 2014, 31.3% of all participating voters used the Internet option (turnout was 36.5%). In the parliamentary election in Estonia in 2015, the share of Internet voters among participating voters was 30.5%. In the most recent local elections in 2017, the share of i-voters

⁷<https://www.valimised.ee/en/archive/statistics-about-internet-voting-estonia>, accessed on 2 January 2019 (the other statistics in this section are also cited from this source).

was 31.7%. Regarding the use of Internet voting by Estonians living abroad, it can be observed that about 90% of the Estonian votes from abroad are now cast online (Solvak and Vassil 2016).

Assuming that the system has not been hacked and election fraud has not taken place, the results of the online votes represent the will of the online voters just as is the case for offline voters.

Regarding the question of whether Internet voting has the potential to increase participation, there are no clear indications for an increase in voter turnout when looking back over the relatively long period of Internet voting in Estonia at different election levels. What can be seen, however, is a trend towards an increasing share of voters using Internet voting over time (Goos et al. 2016). One interviewee (administrator) states that “*after 10 years we can say, [Internet voting] keeps the level of voter turnout. It does not increase automatically or drastically. But what we can say now is that it leads to an increase of some percentage points for the people who stay outside of Estonia, the expats. [. . .] And those people who have used it once, will use it again. So, we should see it differently: if we discontinued Internet voting, we would lose a lot of people. Therefore, we can say it has an effect of about 3–4 percent. But it does not particularly contribute to an increase as there are so many other impacts on voter turnout, such as conflicts in politics or policy.*”

11.3 Voting in Elections/Referenda in Switzerland

11.3.1 Introduction

The main reasons for the introduction of Internet voting, a project called *vote électronique* in Switzerland, were to speed up vote counting, reduce the number of invalid votes and facilitate voting for Swiss citizens living abroad and for people with disabilities (Braun et al. 2003). Another rationale is the endeavour to play a leading role in the race for digital leadership in electronic democracy. In addition, “*the political institutions want to get ready for a potential future within a digital society*” (interview with an administrator).

In Switzerland, e-voting has been offered for many years, and was sometimes contested, both at the beginning and over the course of its application. While in Neuchâtel, for instance, there was no political opposition, in Zurich, regular, strong doubts have been voiced regarding its costs and cost efficiency. Geneva even suspended e-voting for a while, but then reintroduced it after a referendum on e-voting, where it was supported by 70%. Switzerland considers itself as still being in a test phase. Its motto is “security before speed” (Federal Chancellery 2019), so the introduction is a slow and careful process.

The Confederation defines the framework and requirements for e-voting, and the cantons are responsible for the operational level. Hence, provisions for e-voting are adopted on the Federal level, and the cantons decide on their own if and how they want to introduce e-voting. Furthermore, “*there are these external audits and*

companies who have nothing to do with it, have a look at it and write their reports. Based on [these reports] the Federal Chancellery decides, because it is the responsible authority for the approval [of an e-voting system] [...]” (interview with a researcher).

The first trials in the three cantons of Neuchâtel, Geneva and Zurich were conducted between 2004 and 2005 for Swiss citizens living in Switzerland. In a second round of trials between 2007 and 2010, some cantons included Swiss citizens living abroad. While e-voting was only offered for referenda on the local, regional and federal levels until 2011, in October 2011, it was used in Federal elections for the first time (Goos et al. 2016). In 2015, out-of-country voters were able to vote online for the second time in Federal elections, in-country voters for the first time.

Today, two different e-voting systems are in place: First, the “Geneva system” CHVote, which is the result of a cooperation between the State Chancellery and the General Directorate of Information Systems of the canton and is therefore developed and hosted by Geneva. Other cantons can and do use this system, but it is remotely operated from Geneva. The second e-voting system in Switzerland was developed by the Swiss Post and the private company Scyt1 and has been in place since 2016 (Der Bundesrat 2017). A third system, the so-called consortium system, originally developed for the pilot canton Zurich, was abandoned in 2015 after an external audit discovered security vulnerabilities with regard to the secrecy of voting.

In order to vote, one has to be entitled to vote, and needs access to a computer. No particular software is required; the voter receives an individual ID number that is used to verify his/her identity on the election web page. Then, the ballot is cast and must be confirmed using a second individual code, which has been sent to the voter in advance. During the actual voting process, depending on the system in place, voters can cast their online ballots between 2.5 and 3.5 weeks prior to the day before the actual Election Day. (This description applies to the Geneva system; other systems work slightly differently.)

Switzerland is following a gradual approach to the implementation of Internet voting, and its legal basis was defined by the Swiss Federal Council and the Parliament in the Federal Act on Political Rights (*Bundesgesetz über die politischen Rechte, BPR*) (Art. 8a), the Regulation on Political Rights (*Verordnung über die politischen Rechte, VPR*) (Art. 27a) and in the Regulation of the Federal Chancellery on electronic voting (*Verordnung der Bundeskanzlei über die elektronische Stimmabgabe, VEleS*). For instance, the Federal Act on Political Rights defines minimum standards, for example, that it is only allowed to conduct Internet voting trials as long as they are limited in scope and time. Furthermore, it is stated that the eligibility to vote, the secrecy of the vote and the elimination of misuse need particular attention. The VPR goes into more detail and specifically regulates the prerequisites for conducting Internet voting trials. For instance, it is clearly defined how and under what conditions a canton is granted the permission to implement Internet voting. The legal framework for e-voting is adjusted on a regular basis. In 2013, for example, there was a special focus on the verifiability and certification of the e-voting systems in place.

In the early 2000s, e-voting in Switzerland was strongly promoted by the chancellor of Geneva, who then formed a coalition with Zurich and Neuchâtel. One of the interviewees (researcher) characterizes the chancellor at the time of Geneva as a “*policy entrepreneur, [...] an individual who strongly pushed Internet voting [...]. We want to be modern, we want to push it. Particularly because we have so many referenda in Switzerland*”.

Though initiated by the cantons, the introduction of Internet voting in Switzerland was also embedded in a broader Federal strategy from the beginning, the “Strategy for an Information Society in Switzerland”. In cooperation with the Federal Council of Switzerland, three e-voting pilot projects were launched in 2004 and 2005. These three cantons were particularly suitable for an introduction of e-voting because of the organization of their political rights: Geneva has a centralized electoral register, Zurich a decentralized system, and Neuchâtel already had an e-government portal. After these pilots were declared successful, the Federal Council decided on the gradual introduction of Internet voting for local, cantonal and national referenda.

11.3.2 *Participants*

As every canton has its own citizens’ rights defining who is entitled to vote, the target groups for e-voting differ respectively. During the pilots, the focus was on a selection of Swiss citizens living in Switzerland, but this focus has since shifted to expatriates who are registered in their home canton and people with disabilities. Meanwhile, the long-term objective is the nationwide introduction of Internet voting for out-of-country voters and ultimately for the entire electorate (OSCE/ODIHR 2012). The reason for this “*is clearly the cost-value ratio. The idea was from the beginning on to offer the vote électronique for the whole population. The target groups ‘people with disabilities’ and ‘Swiss people living abroad’ were clearly defined groups which strongly benefit from electronic voting and were also suitable for a trial phase*” (interview with an administrator). When exactly this is supposed to happen is not yet clear, because the implementation plans are regularly adapted. At one point, the medium-term aim was to allow Internet voting for all Swiss citizens living abroad in the national elections of 2015 (Schweizerischer Bundesrat 2013), but this was then postponed to 2017 and has since been postponed again. “*These goals and dates have changed constantly. If you read the e-government roadmaps, the e-government strategy, it has been adapted continuously*” (interview with a researcher). The current (not binding) aim is that two-thirds of the cantons should offer e-voting to out-of-country voters by 2019 for national elections. However, because the cantons are autonomous in their decisions to implement e-voting and to whom they offer it, their strategies are in a constant state of flux and it is not foreseeable what e-voting will look like in the future. In sum, currently a maximum of 3% of those entitled to vote have the possibility to vote online.

Several studies show that younger voters tended to use Internet voting in Switzerland more often than older voters, particularly the age cohort 30–39 years (Serdült

et al. 2015). However, age loses its significance when controlled by ICT variables such as Internet usage and skills. Furthermore, education seems to be positively correlated with Internet voting—the higher the level of education, the greater the probability that someone votes online. Serdült et al. (2015: 130ff) concluded that “*Swiss voters’ socio-demographic profile points to the conclusion that Internet voting has, at least to date, primarily been a service to the young and privileged [. . .]*”, but also “*that it is not these variables per se that make voters more likely to vote online, but rather their relationship with ICT variables, such as the frequency of Internet usage and trust in Internet transactions*” (Serdült et al. 2015: 131).

With regard to a potential increase in voter turnout, studies in Switzerland show that there is no indication that Internet voting has had any impact. However, analysing the electoral register has revealed a substitution effect between postal voters and Internet voters. “*We see a substitution effect, from postal voters. [. . .] We were able to verify this by analyzing data of voter registries. So this is not based on surveys, but we can say quite certainly which age groups, which sex, in which community, which people use the Internet. And we can say that some [voters] completely move to the Internet channel, but the largest part switches between Internet vote and postal vote*” (interview with a researcher).

Belonging to the target group is a requirement for voting online and, for expatriates, being registered in one of the respective home regions. Out-of-country voters have to register themselves in any case, regardless of whether they want to vote online or by post. The lack of a computer may be a potential obstacle to actually using this voting channel. On the other hand, according to one of the interviewees, surveys show that the user-friendliness of the e-voting process is perceived to be very high. In order to acquaint citizens with the online voting process, test websites were installed, and a hotline is available in case any problems occur during the voting process.

As e-voting in Switzerland has a rather long history, it can be assumed that most people are now aware of the fact that this voting channel is offered. At the beginning, the regular practice of automatically sending voting documents to the whole electorate by post was used to reach and inform the target group about the e-voting option. “*[In Switzerland], everything is sent via mail to the home of everyone. I.e., every man and every woman can see it in the letterbox. If you live in a municipality where Internet voting is offered, you will realise it. In addition, there was an active information strategy of the cantons, information events were organised, flyers were distributed at marketplaces, in shopping centres*” (interview with a researcher).

11.3.3 Participatory Process

The input participants can give are votes in elections and referenda. Votes are counted, representatives are elected. Legislation can be reaffirmed or rejected in referenda.

Internet voting requires particular security measures because the stakes are high. Voting is an essential element of democracy, so any hint of fraud could undermine the results of an election. The requirement of the anonymity of a vote while guaranteeing that voters vote only once poses particular challenges. Therefore, issues of security and privacy have been discussed since the very beginnings of Internet voting. One interviewee (researcher) states the following: *“I think, 100 percent security is never possible. You hear that quite often. On the one hand, we have IT specialists, the leading internet security and computer specialists from the US, who say ‘hands off’, ‘there will never be enough security!’. And in Europe the attitude is rather [...], ‘we have an operational security, which is very high’. It is never 100 percent, but the effort and the necessary know-how to control all elements and the server is really difficult. And then one really has to decrypt the virtual ballot box. The encryption is so strong; this is almost impossible at the moment. We know it would take years to accomplish that [...]. Maybe one can decrypt the current data in 10, 15, 20 years. That is a risk we accept at the moment [...].”* Another interviewee also agrees that *“100 percent security does not exist. Not in the case of postal voting. Not in the case of paper voting. And not in the case of electronic voting. What is relevant for electronic voting is that if it is possible to manipulate one vote, it is possible to manipulate all votes. The scale of manipulation is very central. Therefore the requirements for electronic voting are much higher than for postal voting or paper voting [...] It is important to take the right measures to keep the risks as low as possible”* (interview with an administrator).

11.3.4 Results

In the case of Internet voting, there is an obvious relation between the citizens' contribution and the outcome of the decision-making process, because votes are aggregated and define the election or referendum outcome together with the non-Internet votes. Communicating the results of the e-votes does not differ from the usual election procedures. In general, the Federal Chancellery presents the results of the e-voting trials and other related material on its website (Federal Chancellery 2016).

Due to the various provisions with regard to e-voting, a comparatively low number of the Swiss electorate can potentially vote online. Legal provisions and the step-by-step implementation process followed have resulted in relatively high standards. Accordingly, the absolute numbers per canton are comparatively low as well. For instance, in the referendum in September 2016, 5.3 million Swiss citizens were entitled to vote, and the turnout in absolute numbers was approximately two million votes (Federal Statistical Office 2016). The whole online electorate consisted of 153,838 eligible voters (102,036 Swiss people living in Switzerland, whereas 51,802 out-of-country voters), of which a total of 22,752 voters decided to vote online (Federal Chancellery 2016).

An inherent challenge of Internet voting is that the inner mechanisms of the computer-based voting process are not observable. Compared to traditional voting, e-voting lacks the possibility of counting the votes in public, as is practised in Switzerland, because the cryptographic procedures and information technology are hidden. “*In Switzerland, the votes are traditionally counted in the communities. In the big cities, such as Geneva, this is not the case, but usually lay persons and representatives of political parties count the votes by themselves or watch others count. [...] There you have direct control, you see every paper that is counted. That is omitted [in the case of Internet voting]. [...] That is the big question, how will it work in the future, when you cannot see anything? The technical solution actually [...] lies in universal and individual verification*” (interview with a researcher). Individual verification allows the voters themselves to verify whether their votes have been transmitted correctly. Universal verification allows the voters to verify whether their votes have been registered and tallied correctly. In the future, a technical solution could be used to make the whole e-voting process transparent through the use of encrypted vote transmission and a public bulletin board, where all the encrypted votes are displayed, and everyone can check whether the vote has been cast as intended. One of our interviewees (interview with a researcher) classifies this as a “*technical substitution for the missing transparency*”, though he also admits that trust in the system is a basic requirement for use and it is still a challenge to make the e-voting process comprehensible for lay persons. One measure to build up trust is that “*on election day, when the ballot box is decrypted, a ceremony takes place*” (interview with an administrator). In addition, “[*a commission, as representation of the electorate,] supervises all processes and looks if all procedures are correctly followed*” (Interview with an administrator).

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