Success in eVoting – Success in eDemocracy? The Estonian Paradox

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Abstract. Estonia has acquired the reputation of a successful e-voting country, and perhaps justifiably so. It was the first country in the world to enable remote online voting in nationwide elections in 2005 and the share of e-voters has been on a rise ever since, now reaching one-third of all voters. Against this backdrop of a seemingly flourishing e-democracy, we set out to ask if the country's success in e-voting also implies its success in e-democracy in a broader sense. In a qualitative case study, we compare Estonia's experience in e-voting with the implementation and outcomes of three e-participation projects to demonstrate that considerable discrepancies exist between the take-up and perceived success of e-voting vis-à-vis other e-democracy instruments. In light of these findings the paper further discusses the factors that are likely to account for these differences and highlights the need to look beyond the success of online voting for a holistic evaluation of the state of e-democracy in a given country.

Keywords: e-Democracy · e-Participation · e-Voting · Estonia · Case study

1 Introduction

Throughout time, democracy has continuously evolved and even undergone drastic changes – from face-to-face, via territorial to transnational societies. Most recently, the Internet fosters this transformation as it challenges the concept of state sovereignty and need for representation. Arguably, e-democracy as a transnational, location independent way for citizens to interact with their state and be able to communicate and deliberate in the way of a strong democracy, can be considered the concept for a third transformation following Dahl [1]. Consequently, there is a need for e-democracy instruments that help facilitate and shape such an e-democracy.

Estonia has been a pioneer in developing electronic public services and today all public services include an e-service component. The eID card (the primary identification document for citizens and permanent residents) has enabled digital signing of documents since 2002 and remote e-voting in nationwide elections since 2005. Internet penetration has constantly increased – while in 2005, 58 % of the population used the Internet, today 88 % are internet users [2]. Estonia undertook first steps to develop e-democracy in the early 2000s, creating the first e-participation platform in 2001 and holding electronic elections since 2005. However, while these early efforts placed the

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country among the top ten in the UN e-participation index from 2008 to 2012, Estonia seems to have fallen behind since then, now ranking 22nd out of 193 [3].

While Estonia has acquired the reputation of a successful e-voting country, we set out to ask if Estonia's success in e-voting also implies its success in e-democracy in a broader sense. To answer this, we developed an evaluation framework for the case study of e-democracy instruments in Estonia, by combining some of the success criteria often employed in information systems, e-participation and e-democracy literature, focusing on user acceptance on the one hand and the aspect of democratic legitimacy on the other. Thus, we are looking at the following criteria: (1) level of use; (2) user diversity, (3) stakeholder satisfaction with the system and (4) impact on the political process. While the first and the third category are typical IS success measures, the second and fourth aim to incorporate the component of democratic legitimacy, which is considered the overarching aim of e-democracy projects [4]. The perceived legitimacy and success of a democratic exercise has been associated with not only engaging a sufficient number of participants but also reaching a diverse group of participants [4–7]. Similarly, the actual impact of e-democracy tools on political processes is considered a key measure of their success [5, 6].

The paper is structured as follows. Section 2 gives an overview of our research methodology. Section 3 establishes the theoretical framework for the analysis based on two relevant and complementary literature streams – public sector innovation generally and e-participation literature more specifically. This is followed by a summary of the Estonian e-voting system in Sect. 4 and three major nationwide e-participation projects in Sect. 5. In Sect. 6 we discuss the outcomes of the four e-democracy instruments in relation to the factors that have affected their success, followed by a few concluding remarks on the possible reasons why e-voting has worked more effectively in Estonia than e-participation.

2 Methodology

The aim of this study is to explore the steps that Estonia has undertaken in order to build e-democracy by analyzing the e-democracy instruments, such as TOM, Osale.ee, People's Assembly (*Rahvakogu*), most recently Rahvaalgatus.ee/Citizen OS[1], as well as e-voting, that have been implemented since the transformation of the public sector based on the use of the Internet caught on in the early 2000s. In particular, we are interested in identifying why e-voting works in Estonia and why e-participation does not. The in-depth study of a contemporary phenomenon using multiple sources of evidence in its real-life context is a typical application of case-study methodology. Also, it is an area where there is traditionally – up to today – not enough empirical research [8] undertaken in the IS field.

Yin distinguishes between exploratory, descriptive and explanatory case study types [9]. As we intend to gain new insight in how an e-democracy is (not) being built,

[1] Rahvaalgatus.ee is only a very recent development in 2016. It was not further analyzed as part of this study and is only mentioned here for completeness.

the exploratory approach is selected. Due to the unique situation Estonia is in – it is to date the only country in the world that offers e-voting in all its elections without any restrictions to all eligible voters [10], it was abstained from choosing a comparative multiple case study setup and focus solely on the Estonian case. For conducting the actual case study research we follow Yin's three phases (i) define and design; (ii) prepare, collect; and (iii) analyze and conclude [9].

The data for compiling the case study were collected mainly through desk research in 2015, including existing studies, policy papers, reports, press releases, articles in the media, use statistics, legislative acts and government strategies.[2]

3 Conceptual Framework

Driven by the question why some e-democracy instruments, such as e-voting, seem to work better than others, we focused on studying the factors that make for a successful e-democracy tool. As e-democracy instruments can be viewed as a particular kind of public sector innovation, we found some useful guidance in public sector innovation research as well as e-participation and e-democracy literature.

3.1 Key Success Factors in Public Sector Innovation

E-democracy instruments can generally be treated as public sector innovation concerned with "the creation and implementation of new processes, products, services and methods of delivery which result in significant improvements in outcomes efficiency, effectiveness or quality" [12]. The emergence of literature on innovation genuinely attributable to the public sector can be observed since around 2000, with a focus on innovations in public services and governance [e.g., 13, 14–16].

One of the most recent systematic accounts of public sector innovation is a literature review by De Vries et al. [17] that maps influential factors in public sector innovation at different levels and in different stages, from idea-generation to adoption and diffusion. They distinguish key innovation drivers and barriers along four main categories: (1) environmental level, including regulatory pressures, environmental pressures (media attention, political and public demand), participation in networks and

[2] For Osale.ee, an important information source was an evaluation report of the usage and usability of Osale.ee published by the Government Office (manager of the system) in spring 2015 (quoted in this paper as [11]), which relied on focus group interviews with Osale's managers and key user groups (ministry officials, civil society organizations, interest groups, and individual citizens). In addition, six semi-structured personal interviews were undertaken with key idea champions, IS managers and active users in April and May 2015, several of whom had also been involved in the creation of Osale's predecessor TOM.

For e-voting the experience as part of the OSCE/ODIHR election related activities on Estonia were of particular importance where one of the authors was able to participate. The opinions put forward in this article are all of the author's alone and should not be attributed to the OSCE/ODIHR or any other institution.

For *Rahvakogu* we were grateful to have had access to a forthcoming study thereon.

inter-organizational relationships; (2) organizational level: resources, leadership styles, risk aversion, incentives/rewards, organizational structures, etc.; (3) characteristics of the innovation itself: ease of use, relative advantage, compatibility, cost, trustworthiness, etc.; (4) characteristics of innovators, including employee autonomy, tenure, mobility, knowledge and skills, creativity, commitment, etc. Some factors, such as leadership, were found to be important in all stages of innovation. The European Commission's report "Powering European Public Sector Innovation" [18], perhaps the most influential policy document on the topic, highlights similar barriers. Some of the key impediments to success are related to scattered competences, lack of coordination, unfavorable administrative and organizational culture, lack of resources, lack of leadership, risk-aversion and failure-avoidance, lack of collaboration and limited knowledge on how to apply and measure the outcomes of innovative processes.

Case studies of e-government innovation support these findings. Political will and innovation acceptance at all levels of the organization have been found to be key drivers of successful e-government innovations, while different stakeholder agendas, political turbulence and resource issues act as barriers [19]. Similarly, a case study of the Estonian e-government evolution identified leadership and public sector competencies, availability of resources, legislative and regulatory support, and the existence of (strategic) IT infrastructure as important drivers. The study also emphasized the importance of frequently underestimated factors: the competencies of the private sector, public-private collaboration and the actual process of technology transfer, including support mechanisms to public procurement of innovation [20].

3.2 Key Success Factors for e-Democracy Instruments

The success and failure of e-democracy instruments has been associated with a variety of factors similar to those outline above for public sector innovation. A key success/failure factor seems to be their level of integration into organizational procedures and political processes [e.g., 5, 6, 21]. E-democracy methods should have a clear mandate [6] and involve decision-makers from the outset [22]. Integration can be seen as a key prerequisite for impact, which to date seems to be limited at best [5, 23]. Another set of factors can be associated with organizational culture, attitudes and political support. In addition to organizational culture, broader cultural preconditions for e-democracy include a developed civil society, social trust and an open political culture [6, 21].

The failure of many e-government initiatives has been attributed to overlooking the demand side and citizen's perspective [24]. Empirical evidence of e-participation tools suggests that their take-up has thus far been globally low [25]. Neither have e-participation initiatives brought more people in decision-making, engaging just a narrow "elite" of politically active citizens [7, 26, 27]. Variables explaining participation include prior interest in politics, internet skills, younger age and high level of education [27], which is very similar to participation patterns in offline contexts [28]. The challenge of attracting users implies the need to reckon with their needs and capabilities by engaging users in designing the e-participation tools [6]. Effective participation in the democratic debate also presumes particular requirements to system

design, such as information accessibility and competent moderation [5, 29]. Finally, the acceptance of any ICT-based democracy tool tends to be determined by their perceived usefulness and ease of use, the two central concepts in technology acceptance theories [30]. It is assumed that user acceptance is higher for systems that require less effort, while demonstrating clear benefits for the user.

Either way, the development of an electronic democracy with transnational character [31] needs the further development of e-enabled instruments of democracy, i.e., e-initiatives, e-referenda and of course also e-voting instruments [32]. E-voting takes a special role within this set of e-democracy instruments. Not only is it one of the most visible e-government projects which sometimes receives all the attention of the public, it also is often one of the most discussed and debated [33].

The success of e-voting is often linked with an incremental, step by step, implementation [34], careful consideration of stakeholders' interests [35], as well as a holistic, interdisciplinary, approach [36]. It can be noted that e-voting is more focused on technological issues than other e-democracy instruments, partly due to the inherent paradox between unequivocal identification of voters on the one side and must not being able to establish a link between the vote and the voter, essentially keeping the vote secret and hiding the identity of the voter (preserving anonymity) [37]. Due to the fact that to date most e-voting undertakings do not follow classical experimental setups [38] and are embedded in their national context [39] it is hard to draw comparative conclusions and provide learning to others. We therefore decided to change the approach and conduct an in-depth analysis of a country's efforts around all kind of e-democracy instruments.

4 The Case of e-Voting in Estonia

The Estonian efforts around e-voting started in 2001 with a plan to introduce e-voting, allowing to cast votes remotely via the Internet (often also called "Internet voting") already for the Estonian 2003 parliamentary elections. Following the e-government logic this seemed like the logical next step after e-tax reporting, e-banking and a paperless cabinet meeting of the government's ministers [40]. It took two more years until e-voting become a reality, due to discussion around its constitutionality. With the first ever, countrywide, unrestricted, remote e-voting channel offered in legally binding elections, the 2005 municipal elections, Estonia manifested its narrative of being an e-country. To date it remains the only country with such a universal approach to e-voting.

Several articles have been written about the Internet voting experience in Estonia [41–44], but probably the most comprehensive overview can be found in [45]. Here Vinkel classified the development of Estonian e-voting in three stages: (i) setup period (2002–2005), (ii) growth period (2005–2011), (iii) maturity period (from 2011). In the first period the main technological decisions were taken (usage of the card; double-envelope algorithm). In the second phase, a continuous exponential increase in usage was experienced (see Fig. 1), while the actual application was not changed in functionality, design nor usability. The ongoing third developmental phase was started

by a security incident during the 2011 Riigikogu elections[3]. It was followed by an electoral reform with the introduction of individual verifiability as its main result [47].

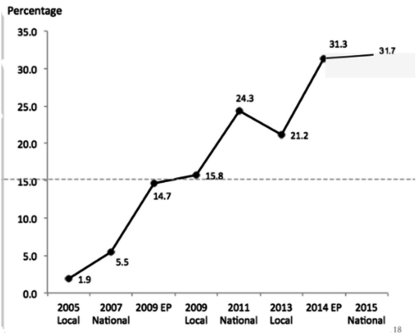

Fig. 1. Share of E-voters out of Voters in Per Cent [48]

5 Estonian e-Participation Projects

5.1 TOM

Estonia's first national-level e-participation project TOM or *Täna Otsustan Mina* (meaning "Today I Decide") was launched at the initiative of Prime Minister Mart Laar and his IT advisor as early as in 2001, possibly making it one of the first of its kind in the world. The online platform, administered by the Government Office, allowed citizens to make proposals for new legislation and policies and discuss and vote upon them. More popular ideas would be forwarded to relevant government officials, who then would have one month to post a formal response.

Despite a relatively lively public interest in TOM, the project soon encountered challenges, such as a limited number of active users, low quality of ideas, limited impact of citizens' proposals and the prevalence of formalistic responses by officials over an open attitude to dialogue [49]. By TOM's third birthday in 2004, e-democracy enthusiasts had declared it a failure [50]. According to interviews with implementers and idea champions of the project, TOM seemed to be ahead of its time. Government institutions lacked an understanding of how to integrate TOM-generated ideas into their work process and citizens lacked the knowledge and skills to formulate their ideas in sufficient quality and formats that officials could work with. According to TOM's administrator, there was a gap in the regulatory, strategic and political context – as government-wide discussions on citizen engagement policies only started around 2004–2005, the ground for e-participation was not yet fertile [51].

[3] A student managed to program a Trojan horse that would cast a different vote than the one intended by the voter. He consequently filed a complaint to the election management body but this was eventually turned down [46].

Citizens were equally dissatisfied. In a survey involving 25 active users, a number of ideas for improvement were voiced, such as the need for more active promotion of the project, improved information accessibility (e.g. systematizing citizens' ideas according to topics), design updates, involvement of experts and moderators to increase the quality of debate, and integration with other government information systems [52]. However, instead of re-designing TOM, the government decided to build a new e-participation tool (later named Osale.ee) and migrate TOM to the new platform. By that time, TOM had more than 7,000 registered users, who had generated 1187 ideas in total [53] out of which no more than 1 % were actually implemented by the government [49].

5.2 Osale.ee

The idea for developing Osale.ee (www.osale.ee) emerged around 2004–2005 during the process of designing a government-wide policy for citizen engagement. The process brought together government officials and civil society activists and led to ideas for a new e-participation tool, which would address the shortcomings of TOM by better integration into formal rule-making processes [51, 54]. Consequently, the Government Office took the decision to develop a new e-participation portal which would enable officials to engage civil society in legislative drafting. The goal of the portal was to enhance the transparency, openness, quality and legitimacy of decision-making [55].

Osale.ee was launched in 2007 as a platform for public consultations on legislative drafts. A year later, the system was upgraded with the functionality of an "improved TOM", which allowed citizens to propose ideas to the government, and gather comments and votes in support. Despite all the criticism of TOM, its functionality was preserved in Osale.ee because of TOM's high symbolic value, pressure from civil society and the wish to signal that the government had not lost interest in citizens' ideas [51]. Osale.ee also included a third function – a search engine of government documents. It thus aimed to enable all three types of government-citizen interaction: information, consultation and active participation [56].

Osale.ee intended to engage three kinds of users: officials of government institutions (mostly of the executive branch), individual citizens and their institutionalized representatives. In practice, however, the tool soon became criticized for failing to attract users and lack of impact [57, 61]. The portal is still operational today but largely considered failed in terms of adoption and outcomes [11].

5.3 People's Assembly

In 2013 Estonia experimented with a post-Parliamentary democracy tool, the People's Assembly (*Rahvakogu*). The initiative came from the President of Estonia and several civil society organizations as a response to a public trust crisis. It consisted of an online platform for crowdsourcing proposals to amend Estonia's electoral laws, political party law, and other issues related to the future of democracy in Estonia. After three weeks of online crowdsourcing, the ideas were debated during a one-day 'deliberation day'

involving a stratified random sample of members of the public to proportionally represent different regions, age groups and gender [58]. The process resulted in 15 proposals that were presented to the parliament.

A year later, three proposals out of the 15 became laws and several more have by now been partly implemented or re-defined as commitments in the government coalition program. However, as the organizers admitted, the exercise failed to achieve its main goal – to increase trust in institutions of representative democracy [59].

6 Discussion

The four e-democracy instruments that have been implemented in Estonia – e-voting, TOM, Osale.ee and People's Assembly – have met mixed success. E-voting, despite some initial barriers, has by now been adopted by a considerable share of voters (close to 32 % in the latest elections) and is generally regarded as an effective tool [48]. At the same time, the e-participation projects have only been able to engage a narrow group of active users and are largely perceived as lacking impact. Although TOM had close to 7,000 registered users, only 9 % of them actually posted an idea [49]. Osale.ee, the only ongoing e-participation project, has been reported to have no more than 5–10 committed active users [11]. While the People's Assembly online platform succeeded in attracting a high number of proposals and comments (close to 4,800) it was still heavily dominated by a homogenous user group – middle-aged well-educated ethnic Estonian men [59]. It is therefore fair to conclude that none of the e-participation projects has been particularly successful in enhancing e-democracy in the sense of fostering an active engagement of all parts of society in shaping public decisions.

Based on theoretical and empirical literature, e-democracy innovations are challenged by various barriers. These include a lack of administrative and political championing, poor integration into organizational procedures and broader political processes, lack of easily demonstrable impact, unfavorable cultural context, hostile attitudes to citizen engagement, and the difficulty of matching different expectations and capabilities in designing systems intended to engage diverse user groups. Therefore, the success of e-voting compared to e-participation projects could at least partly be associated with its inherently high integration into policy processes and administrative routines, high political interest and support to the instrument, its immediate and easily demonstrable impact on the constitution of elected bodies, clear mandate and a clear procedure for translating input to outcomes.

E-voting has demonstrated clear benefits related to convenience to users – if voting on paper would take more than half an hour, voters are more likely to prefer the electronic channel over the traditional one [48, 60]. Looking more closely at the development path of e-voting, one can identify that the service has been characterized by a relative stability as the application remained relatively unchanged within the first six years of operation – and this change only happened due to external pressure (an attack) [45]. Initially the take-up of e-voting was relatively low (only 2 % of the voters chose the electronic channel in the 2005 municipal elections first offering e-voting) and focused on early adopters of the ID card, similar to e-banking. There was thus in fact a high barrier of learning to be overcome. Once this barrier was mastered, the immediate

return was incurred: convenience. With e-voting people potentially save time, while with other e-democracy instruments the actual impact has often not been clearly visible.

Unlike e-voting, Estonian e-participation projects have never achieved true integration with existing political processes and their mandate has remained unclear. In the case of TOM and Osale.ee, government institutions do not seem to have found a way to accommodate unsolicited ideas from citizens into their daily routines. Although Osale.ee aimed to fix the shortcomings of TOM by better integration into the policy-making process, it largely seems to have failed in this respect. Part of the problem has been the ambiguity of the concept of public consultations, which is undefined in legislation [11, 62]. Hence, the extent to which the government should take citizens' input into account has remained unclear. Similarly, as the Parliament's policy-making routine included no procedures for working with crowdsourced proposals, the Parliament was generally reluctant to discuss the ideas put forward by the People's Assembly [59].

The latter also has to do with political interest, which seems to have been relatively low for all e-democracy instruments but e-voting. As the Prime Minister's project, TOM clearly had political backing at the highest level, albeit limited to the Prime Minister's office, while its successor Osale.ee never saw any political champions [54, 62]. Political interest was more mixed for People's Assembly – although the process was formally initiated by the President, it did not meet similar interest on the part of the Parliament, the group of politicians whose support would have been key to the project's impact.

Due to loose integration and low political interest, all three e-participation projects have lacked the expected impact. The actual implementation of citizens' ideas proposed through TOM and Osale.ee has remained marginal [49]. Public consultations on Osale.ee have not yielded better outcomes – both government officials and interest groups criticize the platform for low usefulness [11]. The People's Assembly, despite several positive effects, did not bring the government closer to citizens and failed to stimulate a fundamental reform of political institutions it originally intended to [59]. Therefore, considering the effort that is required from citizens, administrators and politicians to engage in a complex political dialogue and the absence of immediate benefits such as time savings, it might well be argued that it is inherently more difficult for e-participation projects to repeat the success story of e-voting.

7 Conclusions

Estonia's success in e-voting does not mean the country has been successful in promoting and enabling e-democracy in general. Somewhat paradoxically, the country that has been a champion of e-government and a pioneer in e-voting has not quite been a success story in e-participation and has consequently failed to develop a full-fledged e-democracy as some had initially hoped.

However, it is not only that the politicians lack out on supporting this transformation (which could be due to the fear of losing power; compare [63]) but also citizens themselves. Contrary to the hopes of many early Internet enthusiasts, citizens do not appear to be particularly interested in taking advantage of all the opportunities for direct access to decision-making that contemporary technologies can offer, especially if the

benefits are not immediately evident. As it seems, the third transformation of democracy towards a fully developed e-democracy still has to happen and not even Estonia can help out with this one – for now.

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