

Constitutional Parameters for E-Voting in Germany¹

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I. Introduction

Electronic voting or e-voting is a method of voting using electronic systems to cast the vote. While modern equipment can be used also to count votes, e-voting in its pure form employs computers and other devices instead of ballot boxes or papers. Online-voting is a sub-category, in which the internet is used during the election process. The voter can use a personal computer or a mobile device linked up to governmental or private website, or send an email to cast his or her vote. Some countries, like Estonia, use online-voting in their democratic decision making, while others, like Finland or Norway, have backed away from electronic voting. Issues of security of systems, dangers of hacking or spoofing attacks, have been widely discussed with respect to e-voting. These questions notwithstanding one must also examine thoroughly the legal, often constitutional, parameters regulating the vote. The Federal Republic of Germany will be discussed here. The German "Basic Law" ("Grundgesetz" or GG for short) forms the constitutional background of the German legal system. Elections to the federal parliament ("Bundestag") are regulated in Art. 38 para 1 sentence 1 GG; the same five rules are applied to elections in the 16 federal states ("Länder") and on the municipal level ("Kreise" and "Gemeinden"), as Art. 28 para 1 s. 2 states. According to this, elections in Germany have to be general, direct, free, equal and secret.

In a representative democracy, elections form the backbone of the political legitimacy of decision-making. This legitimacy can be questioned if turnout in elections and other forms of binding participation processes is low. Low turnout can be viewed as a sign of citizens feeling disenfranchised, not well represented and disempowered. It can lead to a

¹ The text is a modified, updated and abridged version of a longer scientific contribution to the July 2015 issue of *KommunalPraxis Wahlen*: "Können elektronische Wahlen verfassungsmäßig sein?".

All translations from German to English by author.

² The author is researching his J.D. as part of the NRW Graduate Progress College research on online participation in the political process is a project funded by the State of North Rhine-Westphalia established by the Heinrich-Heine University, Düsseldorf, and the University of Applied Sciences for Public Administration NRW in Cologne, working in cooperation with scientists from economics, computer science, communication science, political science, law and sociology, and together with partners from practice (e.g. municipalities, companies who design websites etc.). The aim of the inter- and transdisciplinary program is to further research into the potential of the internet to enable stakeholders to participate in decisions that are relevant to them. The guiding question of the Graduate Progress College is:

"How and under what conditions can the potential of online participation in the political process at the local level be systematically developed, used practically and scientifically evaluated?"

rift developing between the electorate and politicians, a divide developing between those who hold the power³ and those representing them. Radical minorities might become the majority as they can count on higher participation rates from their following. The whole idea of democracy is at stake.

Like most countries, Germany sees a trend of fewer and fewer people participating in elections. Voter turnout has declined steadily in the last decades, as the following graphs show:

Voter turnout in general (parliamentary) elections by year⁴

	1990	2002	2005	2009	2013	Highest turnout in 1972
Voter turnout in %	76,3	79,6	78,3	71,4	72,4	90,8

Voter turnout for elections to the European Parliament by year⁵

	1979	1984	1989	1994	1999	2004	2009	2014
Voter turnout in %	63,6	54,2	59,3	57,5	41,7	43,7	44,0	48,1

This trend looks even worse if the age of voters is taken into consideration – the age group of voters under the age of 29 is participating on such a low scale that they are by far underrepresented; voters aged 30-39 are still underrepresented. Young people especially feel disillusioned by current political trends, this is even more the case for persons without a job or prospects for the future.

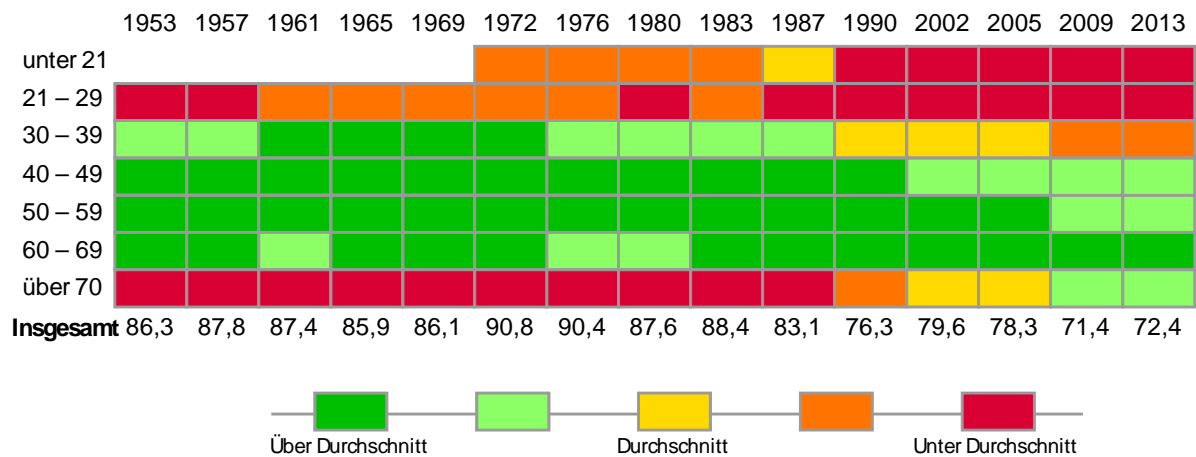
On the other hand, people over 40 years of age are overrepresented; those in the age-frame of 60-69 are much overrepresented. This is shown in the following table⁶:

³ In the Federal Republic of Germany Art. 20 of the Constitution (“Basic Law”) states in para 1 that all power of the state is held by the people, who rule through elections and referenda as well as organs of the three branches of the state.

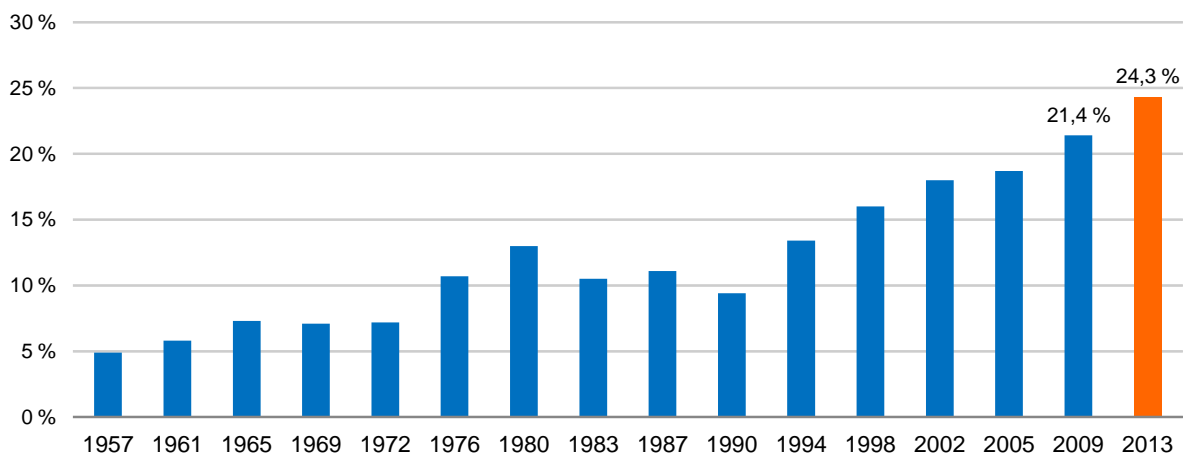
⁴ Graph by author based on data by the head of the federal electoral commission.

⁵ Graph by author based on data by the head of the federal electoral commission.

⁶ Taken from the presentation in January 2014 by the head of the federal election commission on the general election of 2013.



Some groups show most worrying signs of feeling left behind and out of decision-making processes.⁷ Alongside this development, voters in Germany want to participate in elections and other political processes in a more flexible way.⁸ One method to achieve this has been the usage of absentee-ballots by mail. The following graph shows the steady incline in absentee-voting:⁹



In some areas, the number of absentee votes has risen to 50% of the votes being cast.¹⁰ Very often, it is young people making use of this method. Bearing in mind that this age-group is usually not participating so much in elections and the fact that many of them would be seen as “digital natives” there seems to be a lot of potential in e-voting to achieve higher voter turnout especially in this group. Research has shown that about

⁷ Cf. Schäfer/Vehrkamp/Gagné: „Prekäre Wahlen - Milieus und soziale Selektivität der Wahlbeteiligung bei der Bundestagswahl 2013“, Study of Bertelsmann Foundation 2013.

⁸ Study of the Bertelsmann Foundation „Partizipation im Wandel – Unsere Demokratie zwischen Wählen, Mitmachen und Entscheiden“, 2014.

⁹ Taken from the presentation in January 2014 by the head of the federal election commission on the general election of 2013.

¹⁰ Haußmann: „Die Briefwahl auf dem Weg vom Ausnahme- zum Normalfall – Eine Analyse der Bundestagswahlen 2013 und 2009 sowie der Europawahl 2014“, KommunalPraxis Wahlen 1/2016, p. 27 (28).

60% of the young people would vote if online-voting was possible.¹¹ This groups, as shown, currently has a very high number of people of not voting at all.

The rules regulating absentee-voting have been made less strict in recent years, voters now do not have to show special reasons if they want to make use of this form of voting. They still, however, have to affirm that the rules for voting have been kept, especially that their vote has been secret and free (the specifics of these regulations will be explained in part IV. 3. and 5.). The German Constitutional Court (“Bundesverfassungsgericht” or BVerfG for short) has had to rule on this shortly after it was introduced in 1961.¹² It upheld the legality of the absentee-vote, despite reservations. Thus, the citizens themselves have been made guardians of the rules governing general elections.¹³ While some scholars still view this as a critical issue, the German Constitutional Court declared the absentee-ballot by mail constitutional again in 1981¹⁴ and recently in 2013 regarding elections to the European Parliament.¹⁵ As electronic voting, especially in the case of online-voting, is also a form of absentee-vote these rulings can be seen as benchmarks for the constitutionality of electronic and online elections in Germany.

II. Development of Electronic Voting in Germany

E-Voting has been employed in several elections in the Federal Republic of Germany at the turn of the Millennium. The German Federal Election Law allowed for machines to be used in elections after they were tested by a governmental agency. The city of Cologne, Germany’s fourth-largest, has used such equipment in several elections on the municipal, state, federal and European level. The system provided for a computer-screen representing an image of the ballot paper on which the voter could make his or her decision clear. Voters were checked as to their identity and registered as per usual through the electoral commission and then shown to a curtained-off table on which the computer stood to cast their vote. The electronic machine was cleared to accept on decision and then blocked until the next voter was given the chance to decide. At the end of the day, all votes were counted by the system and a print-out of the final tally printed.

In a landmark decision the Constitutional Court declared the system used to be not conforming to the Constitution in 2009¹⁶. Remarkably, neither the law allowing for electronic devices to be used was ruled illegal nor, as a statement by the deputy presiding judge made clear, did the court “close the door to electronic voting in

¹¹ Study of the Bertelsmann Foundation – Einwurf Sonderausgabe 1-2 2016 „Zeitgemäß Wählen“, p.10.

¹² BVerfG, on 07. February 1961 – 2 BvR 23/61-, BVerfGE 12, 13 and BVerfG, on 29. November 1962– 2 BvR 587/62-, BVerfGE 15, 165 – both decisions can be found online via juris.

¹³ Cf. The German Constitutional Court, BVerfG 2 BvC 2/66, available online via juris, Ls. 1 and Rn. 17 a).

¹⁴ BVerfG on 24. November 1981 – 2BvC 1/81 -, BVerfGE 59, 199-128, also available online via juris.

¹⁵ BVerfG, on 09. July 2013 – 2 BvC 7/10 -, BVerfGE 134, 25-32, available on juris.

¹⁶ BVerfG, 2 BvC 3/07, 2 BvC 4/07 on 03. March 2009, BVerfGE 123, 39-88, available on juris.

general”.¹⁷ Furthermore, while the computers were not to be used again, the result of the election was upheld and no re-vote was needed. Still, after this decision almost no further attempts were made to use electronic methods to facilitate the vote and only little research was done in the field.¹⁸ As recent trends make the need to boost voter turnout more urgent and developments in the fields of computer science et. al. show interesting signs of progress, the stage may be set to once again address this question.

III. Electronic Voting as Viewed from the Political Sphere

In the last years several attempts have been started to develop ideas to make voting in Germany more flexible and thus attractive. E-voting is seen by scholars as one possible way for this.¹⁹ In addition, e-voting is considered as a tool to ease access to the vote (e.g. to people with disabilities²⁰ or citizens living abroad²¹) and also bring down the costs associated with the election process for governmental agencies involved as well as speed up the process.

In the state of Bavaria e-voting was shortly debated²², in the northern state of Schleswig-Holstein several parties called for research into e-voting²³, but this was dropped after the state chairperson of the electoral commission cited the “impossibility to reconcile this with the position of the Constitutional Court”.²⁴

On the federal level, the ruling grand coalition of CDU and SPD had planned to introduce e-voting in the area of social welfare institutions by 2017, but these plans were postponed until at least 2023.²⁵ Problems with security of the systems and data-protection were cited as the main obstacles.²⁶ Those involved did see e- and online voting as a viable tool, however, especially to improve participation rates.²⁷

¹⁷ Judge Voßkuhle, as quoted in Schwab, „Verwendung von Wahlcomputern bei der Bundestagswahl 2005 verfassungswidrig“, 2013, footnote 1.

¹⁸ See e.g. Haibl/Hötzel: „Verfassungskonformer Einsatz rechnergesteuerter Wahlgeräte“, 2014; Henning/Volkamer/Budurushi: „Transparentes eVoting“, DöV 2012, p. 789; Luch/Schulz/Tischer: „Online-Wahlen und –Abstimmungen in Deutschland“, BayVbl. 2015, p. 253.

¹⁹ Hajen: „Selbstverwaltung der Sozialversicherung - ‘Good Governance’ oder dringender Reformbedarf?“, Die Sozialgerichtsbarkeit 2014, p. 229; Leopold: „Wieder Wahlen in der Sozialversicherung 2017“, Wege zur Sozialversicherung 2016, p. 54.

²⁰ Danzer: „Segen und Fluch der Briefwahl“, KommunalPraxisWahlen 1/2013, p. 13

²¹ Hahlen in: Schreiber, Bundeswahlgesetz-Kommentar, § 35, Rn. 15, p. 615.

²² <https://www.bayern.landtag.de/aktuelles/sitzungen/aus-dem-plenum/landtag-stimmt-fuer-die-einfuehrung-von-volksbefragungen/>; <http://www.sueddeutsche.de/bayern/csu-beschliesst-volksbefragungen-mitbestimmung-auf-bayerisch-1.2346351>.

²³ Proposal 18/2532, 18th Schleswig-Holstein State Parliament of 28. November 2014, p. 3, point 14.

²⁴ http://www.landtag.ltsh.de/export/sites/landtagsh/infothek/wahl18/aussch/iur/niederschrift/2015/18-104_07-15.pdf, p. 6.

²⁵ German Federal Parliament, hib # 98 of 25. February 2015.

²⁶ Leopold: „Keine Reform der Selbstverwaltung und der Sozialwahlen“, Sozialrecht + Praxis 2015; p. 215/6; http://www.bundestag.de/bundestag/ausschuesse18/a11/kw06_pa_arbeit/357030.

²⁷ „Higher participation rates in elections expected“,

http://www.bundestag.de/bundestag/ausschuesse18/a11/kw06_pa_arbeit/357030

The main political parties have also made strides towards this goal, the SPD called for several options to be researched and tried out in its program²⁸ as did the FDP, which has the farthest-reaching plans in its agenda.²⁹ It calls for research into options of electronic voting and referenda. The parties have also agreed to collaborative efforts of their political foundations, which began by the end of 2015.³⁰ All these attempts have concluded, however, that several legal obstacles remain to the introduction of e-voting in Germany.

IV. Constitutional Parameters for Electronic Voting in Germany

As mentioned above, five criteria (cf. below 1-5.) are enshrined in the Federal Constitution for elections on the federal level (Art. 38) and on state/municipal levels (Art. 28). To these, the criterion of transparency (cf. below 6.) was added by the Constitutional Court in 2009, which also stated that three main guiding principles of the Federal Republic must be maintained and met (cf. below 7.).

1. General Election

Elections have to be general. In essence, this means that everyone³¹ is entitled to vote in principle and ensure sovereignty of citizens.³² No one is to be denied the chance to vote due to “political, economic or social reasons”.³³ For e-voting this means that firstly, e-voting cannot be the only means to cast one’s vote, as people who have no access to the internet or do not own a computer would be left out. Secondly, only the persons who have the right to vote can be allowed to vote. Thus, ways have to be found to authenticate voters. If e-voting is conducted in polling stations as now, this can still happen in the way it is done today by the electoral commission. If online-voting is considered, authentication systems as used today by banks can be used³⁴, as well as machine-readable passports. The security of the systems used is of course of the essence.

²⁸ Decision # 16 „Unsere Demokratie stärken – mehr Transparenz, mehr Profil, mehr Mitentscheidung, mehr Wahlbeteiligung“ of the regular party convention 10.-12.December 2015 in Berlin, p.6 and 7.

²⁹ Decision taken at the 67th regular convention of the FDP „Chancen der Digitalen Gesellschaft“, https://www.fdp.de/sites/default/files/filefield_paths/2016_04_24_bpt_chancen_der_digitalen_gesellschaft.pdf, p. 19/20.

³⁰ This initiative is called „Demokratie wähle ich kreuzweise!“, cf. Siehe hierzu <https://www.fes.de/de/demokratie-kreuzweise/>; <https://www.freiheit.org/content/demokratie-waehle-ich-kreuzweise>; <https://www.boell.de/de/demokratie-waehle-ich-kreuzweise>; <http://www.rosalux.de/staatdemokratie/specials/demokratie-waehle-ich-kreuzweise.html>; <http://www.kas.de/wf/de/33.44030/>. The first meeting was held in Berlin on 09.January 2016, outcomes at <http://library.fes.de/pdf-files/fes/12449.pdf>.

³¹ Germany was one of first countries to introduce female suffrage in 1919.

³² Morlok in: Dreier, Kommentar zum GG, Art. 38, Rn. 64.

³³ BVerfGE 58, 202 (205).

³⁴ Paulsen: „Sicherheit von Internetwahlen“, 2011, p. 23.

2. Direct Election

According to this principle the decision on who is elected can be traced back directly to the decision of the voter³⁵, no other person or institution is between the voter and the elected person.³⁶ The systems used do not decide by themselves, but only record and transmit the decision of the voter. Here, too, all necessary precautions need to be taken to ensure that no one interferes with the process and votes cast are misread, changed, or withheld.

3. Free Election

Elections are free if it is up to the voter alone to decide whether he or she votes at all³⁷, and if so, whom he or she elects. There is to be no outside influence by the state, let alone any pressure by anyone, on the voter.³⁸ The voter also must have the chance to cast a no-vote.³⁹ A free election is guaranteed by the secrecy of the vote.⁴⁰

4. Equal Election

This can be summarized as the “one person – one vote” principle. Elections are equal if every voter has the same number of votes and each vote counts as much as all the others.⁴¹ All voters are equal in formality.⁴² To make sure no citizen votes more than once the systems used must safeguard against multiple votes being cast by the same person, but also against any obstacles to the vote being cast by an eligible voter, or his or her vote tampered with as explained above. Voters need to be authenticated and then allowed to vote only once, e.g. with a code that is valid for just one vote being cast.

5. Secret Election

The secrecy of the vote is the most important safeguard to guarantee a free and fair election. Voters do not need to tell anyone how they voted⁴³, nor indeed may they.⁴⁴ Systems need to be able to ensure that no person other than the voter can find out how the individual vote was cast. This is problematic in the case of e-voting, and even more so in online-voting. Safeguards have to be in place against spying on the voter, tracing

³⁵ BVerfGE 47, 253 (279f.); Morlok/Michael, Staatsorganisationsrecht, § 5, Rn. 96.

³⁶ BVerfGE 7, 63 (68); Morlok in: Dreier, GG-Kommentar, Art. 38, Rn. 75.

³⁷ At least this is the consensus in Germany, while mandatory voting does exist e.g. in Belgium or Greece.

³⁸ BVerfGE 66, 369 (380); Morlok in: Dreier, Art. 38, Rn. 82.

³⁹ Paulsen p.27.

⁴⁰ Morlok/Michael, § 5, Rn. 99.

⁴¹ BVerfGE 120, 82 (102); Morlok in: Dreier, Art. 38, Rn. 97

⁴² BVerfGE 79, 161 (166); 121, 266 (295); 124, 1 (18); Morlok in: Dreier, Art. 38, Rn. 98

⁴³ BVerfGE 99, 1 (13).

⁴⁴ Morlok in: Dreier, Art. 38, Rn. 115.

the vote electronically back to the individual or drawing conclusions from waves emitted by electronic devices etc. as to the vote.

When voting via PC or mobile device outside of a polling station one can draw a comparison to the absentee-ballot by mail as described above (page 2). While voting by mail, voters have to sign a declaration, enforceable by penal law, that they voted in secret and it was they themselves who voted. No method to have this declaration done electronically exists as yet. Further research in this area is needed to achieve the preconditions for online-voting at least.

6. Public and Transparent Election

To further complicate matters, the 2009 decision outlawing the voting machines used was based on an unwritten criterion: The Constitutional Court stated that elections need to be transparent and public.⁴⁵ This means that the result must be transparent understandable by the average citizen without any special knowledge.⁴⁶ The process as such needs to be clear and the public has the right to understand it and thus be able to check for inconsistencies. This criterion had long been called for by scholars⁴⁷ but had not been adopted by the Federal Constitutional Court until then nor seen as valid argument by the Federal Parliament. So most people were taken by surprise when the Constitutional Court set this legal parameter as well for elections. While transparency is called for in elections in other countries as well, Germany seems to be the only nation where it is held to such a high standard.

One way to uphold the transparency and publicness of elections would be to print out a ballot paper after each vote is cast electronically to be used in case a public re-count is possible. Another way is to scan regular ballot papers or use a digital pen when voting. All these methods cannot be used outside of polling stations and so make online voting impossible. They can be seen as way however to develop new systems for e-voting and improve existing ones as well as strengthen voter confidence in methods used and prepare for new systems to be introduced over time.

7. General Principles Governing State Affairs

When formulating the criterion of transparency, the Federal Constitutional Court drew upon three of the five guiding principles of the Federal Republic of Germany as enshrined in Art. 20 of the Basic Law.⁴⁸ First and foremost is the principle of democracy,

⁴⁵ BVerfG, 2 BvC 3/07, 2 BvC 4/07 of 03. March 2009, BVerfGE 123, 39-88.

⁴⁶ BVerfGE 123, 39 (68ff.).

⁴⁷ Cp. Overview by Hahlen in: Schreiber, Bundeswahlgesetz-Kommentar, § 35, Rn. 12

⁴⁸ These include, in addition to the ones described here, also the federal system and the social welfare state. These principles are guaranteed "forever" as, according to Art. 79 para 3, they cannot be changed.

where citizens rule.⁴⁹ They elect officials through majority decisions.⁵⁰ They are legitimized by the democratic process.⁵¹ Democracy can be strengthened through higher voter turnout and by giving everyone the chance to vote easily.

Further, the Federal Republic of Germany is bound by the rule of law. While the expression as such is not used it can be found in Art. 20 para 3 of the Constitution.⁵² The citizen has the right to rely on decisions made by the state, which runs according to the checks and balances of the three forms of state power. To uphold this rule e-voting needs to be in conformity with the legal system, especially the Constitution.

Finally, as the name already states, the republican principle is to be adhered to. Harkening back to the original Latin, *res publica*, the public thing, should have served as the best argument to base the need for elections to be public on. While traditionally it was seen as a counter-system to dictatorships or monarchies⁵³ a new approach is taking hold, which is to be applauded: A republic is seen more and more as a system oriented towards the common good and run by responsible citizens.⁵⁴ E-voting, as a means to increase citizens' involvement in decision-making and strengthen democracy, can be seen as a way to achieving this positive interpretation of the republican idea.

8. Relationship between the Parameters

While some of the above-mentioned principles reinforce each other (the secrecy of the vote guarantees free elections), others are contradictory. Trying to heighten the voter turnout and thus bolster the general vote can be a problem for the security of systems involved, and as this to the freeness, equality and secrecy of the vote. The biggest problem is the so-called "Secrecy-Transparency-Dilemma", as the overall process needs to be public and transparent while the individual vote remains secret. As no technical solution to this is at hand as of yet, the only way to solve this would be to risk danger to one parameter in favor of another or others. In essence, possible benefits need to be weighed against the dangers involved. The Federal Constitutional Court ruled that this is possible in principle.⁵⁵

As has been shown the legitimacy of the democratic process is at stake if voter turnout falls even lower. The general vote is therefore a most important principle to uphold and strengthen. To increase voter turnout, possible dangers to the secrecy of the vote might have to be risked. Certain parameters might have to be reinterpreted, e.g. that the process is transparent in general to the average voter while not every citizen is able to fully understand the details of the encrypting system.

⁴⁹ Dreier, Art. 20 (Demokratie), Rn. 66

⁵⁰ Dreier, Art. 20 (Demokratie), Rn. 73.

⁵¹ Dreier, Art. 20 (Demokratie), Rn. 90.

⁵² BverfGE 35, 41 (47); 39, 128 (143).

⁵³ Dreier, Art. 20 (Republik), Rn. 17; Morlok/Michael, p. 77.

⁵⁴ Dreier, Art. 20 (Republik), Rn. 20.

⁵⁵ BverfGE 12, 139 (142f.); 21, 200 (204ff.); 59, 199 (224ff.).

V. Conclusion

Concluding, e-voting in Germany is possible in principle if certain preconditions are met. Currently, the systems available do not provide the security and/or transparency needed to legally use them for elections, at least on the municipal, state or even federal level. These criteria are even harder to meet in online-elections. Thus, in the foreseeable future, Germany will not be able to adapt the Estonian model.

One way for research is to look at whether the strictness of rules also applies to other elections, like those to student councils, youth or senior citizen councils, or in the area of self-governing bodies or entities. The findings in elections in these areas can then be taken to the level of parliamentary elections. Field-studies need to be undertaken to check for ease-of-use of systems, adherence to legal rules and acceptance by the voters. In essence, an interdisciplinary approach is needed, combining political scientists with computer scientists, legal experts and communication specialists, sociologists and experts in encryption. Seeing that the systems will be used by municipalities and other government bodies it cannot be done at universities alone, a transdisciplinary research combining scientists and experts in the government, as well as in political parties and foundations, is needed as well.

In the end, it will be up to politicians to decide if they are willing to take the risks inherent to e-voting, weighing it with the possible benefits of these systems to the ideas of democracy, possibly higher voter turnout and other benefits.

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