

Tilburg University

Conclusions

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Published in:
Electronic Voting and Democracy A Comparative Analysis

Publication date:
2004

[Link to publication in Tilburg University Research Portal](#)

Citation for published version (APA):
Leenes, R. E., Svensson, J., & Kersting, N. (2004). Conclusions: Adopting Electronic Voting - Context Matters. In N. Kersting, & H. Baldersheim (Eds.), *Electronic Voting and Democracy A Comparative Analysis* (pp. 276-305). Palgrave Macmillan.

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Conclusions: Adopting Electronic Voting. Context Matters

Norbert Kersting, Ronald Leenes and Jörgen Svensson

In the preceding chapters a variety of views and developments regarding electronic voting has been presented. On the one hand, the evidence makes it clear that in some places the opportunities offered by Internet voting are being keenly explored. In several countries the foundations for online voting are being put in place, experiments have been carried out or policies are being drafted. On the other hand, critical analyses that warn against fundamental problems of Internet voting have been presented, suggesting that Internet voting is not really a viable option for serious democracies. A number of countries otherwise deeply committed to democratic practices hesitate to pursue online democracy. What can be made of these seemingly contradictory trends? Is there a future for Internet voting? Are the critics right in their claim that online election is a dead-end street? Or should we trust the proponents' belief that technical and social problems will be overcome, and go for the advantages promised by electronic channels of voting?

Interesting as these issues of the feasibility and desirability of online elections may be, we wish to develop a somewhat different line of reasoning by asking *why* some countries decide to move faster along the path of Internet elections than others. In our opinion, it is impossible to make definite claims about the appropriate stance to be taken, irrespective of the particular context in which voting takes place. In this chapter we will argue that variations in social and political context influence the adoption of Internet voting. Countries, populations, electoral systems, public attitudes, political and administrative arrangements differ widely, and all these factors play a role with regard to how Internet voting may be adopted. This means that in different countries with different circumstances the decisions on whether or not to introduce a particular kind of Internet voting may, and indeed do, differ.

The first part of the chapter reviews opportunities and threats associated with Internet voting: what are the possibilities, what is to be gained, and what could be lost? At the end of this book we find it not too difficult to compile such a list, but it is still not easy to make definite claims about the desirability of Internet voting. Not only is there much uncertainty with respect to the precise outcomes of Internet voting in a certain context, but interests and opinions may vary as to whether a specific outcome is to be regarded as a serious threat, an acceptable risk or, indeed, an opportunity. This in turn suggests that the evaluation of Internet voting in different countries is likely to differ. In the second section, current practices of voting in general and Internet voting in particular are outlined. What are the trends that emerge in a broad overview of the countries covered by this book? Are these countries all more or less on the same track, or are we witnessing the beginnings of diverging trends in Internet voting? As we look at the evidence, we will argue that the latter is the case. So, our next step is to spell out what we think are the main factors impinging upon the implementation of Internet voting and to analyse the country-specific discourses. These analyses lead to some further reflections but, more important, they help us in formulating an agenda for future research.

Prospects and threats of Internet voting

Electronic voting is generally seen as any type of voting that involves electronic means (see for example IPI, 2001; Pratchett 2002). Although electronic voting can be conceived in many different ways, a crucial distinction may be made between voting by electronic polling machine and Internet voting. *Voting by polling machine* simply refers to the use of any electronic apparatus to record and count votes in a fixed public place. This may be a specialized voting machine in a voting booth or a standalone PC specially installed for this purpose in a voting kiosk. Polling machines may be especially helpful for a reliable, objective, efficient and expeditious counting of votes and may also offer some possibilities for electronic verification (for example verification of whether the user is indeed entitled to vote and whether the vote is cast correctly).

Internet voting goes a step further in the sense that it implies electronic registration, culling and counting of votes cast from different locations. It typically allows voters to use a more generic technology such as the Internet, to cast their votes from any preferred place – be it

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from the home, from the office or even from an Internet café while travelling abroad – and, as Buchstein observes, in many new forms such as ‘on-the-run voting’ or ‘vote in your underwear’. In this section we will discuss the main opportunities and threats that seem to be connected to Internet voting. What are those threats and opportunities? How real are they? How should we weigh the various arguments in a comparative evaluation? As we will explain, there are three arguments in favour of not giving definite answers to these questions as yet:

- There is still much uncertainty about the validity of claims of both proponents and opponents.
- The validity of claims and their relative weights depend on the specific context in which they are evaluated.
- Even if we could know the actual consequences of Internet voting, different actors would have different opinions and different interests.

The main arguments of proponents and opponents of Internet voting often only reflect initial beliefs and fears and lack an empirical basis for a more thorough evaluation. Therefore, we focus on whatever empirical support is available with regard to the claims being made. As we write this chapter, we find that the empirical evidence on Internet voting is still scarce and generally inconclusive, and that, apart from the evidence in this volume, we can rely on only a few other serious studies available to us of which the most important are:

- The use of Internet voting during the 2000 Arizona democratic primary (Mohen and Glidden 2001; Philips and Spakovsky 2002; Solop 2000).
- The Internet pilot voting project of the US Department of Defense during the 2000 US presidential elections (FVAP 2001).
- The use of Internet voting during a referendum in Bristol and Croydon in the United Kingdom (Thomas 2001).
- The 2002 local election pilots in the United Kingdom (Electoral Commission 2002).

There are, furthermore, some relevant research projects on non-binding simulations of Internet voting, for example the 2001 local election pilot project in Germany (see Kersting 2002b, and Kersting in this volume). Besides this research on pilot projects there is also some research on attitudes to ICT and Internet voting acceptance.

Prospects

Internet voting is often considered to provide new opportunities in the organization of elections. As proponents of electronic voting point out, these possibilities may help to make voting easier and more cost-effective, and may also help to increase voter turnout, facilitate direct democracy and enhance voter information.

Costs and effectiveness

Internet voting may be expected to offer benefits regarding the cost-effectiveness of elections. The costs of introducing this type of voting are relatively high, but costs may be reduced with large-scale proliferation over a longer period of time. The argument of cost-effectiveness received some support in the experiments in the UK, where the elections were outsourced to a contractor who charged 30 pence per telephone vote and 60 pence per Internet vote. However, we should keep in mind that in this case there was also an additional fee for general services, that the costs of the freephone number were met by the authorities, and that the Internet voters, of course, had to provide their own equipment and Internet access.

However, the cost-effectiveness argument looks ridiculous if the Internet voting project of the US military (FVAP 2001) is considered. Here each vote (in total 84 votes) cost the US taxpayer US\$73,809 (<http://www.public-i.org/story_01_080901.htm>), although this was, of course, the result of very high initial costs. In Switzerland and the Netherlands, the costs of introducing electronic voting have been found to be much higher than expected because of the necessary security measures (Ministerie van Binnenlandse Zaken en Koninkrijksrelaties 2002; Schweizerischen Bundesrat 2002).

Turnout

The particular strength of Internet voting is that it enables people to vote without having to go to a special polling station. It thus provides the prospect of reducing the effort needed to vote, especially for people who find it difficult to visit a polling station on election day, such as the physically challenged or people living in remote areas. Especially when electronic voting is used as part of a multi-channel approach (Internet, TV, telephone, cell phone) and a combination of different forms of voting is offered, there is the prospect of people being able to vote by the means they prefer. Electronic voting is considered as a way to modernize the voting process and to give voting a new, modern image. According to some commentators,

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modern people and especially young voters are used to the idea of electronic transactions and simply expect the government to provide the possibility of electronic voting.

However, serious doubts arise with respect to increased voter turnout as a result of the introduction of Internet voting. Philips and Spakovsky (2002) and IPI (2001) conclude that previous reforms designed to make the voting process more convenient – simpler voter registration, extended voting times, voting by mail – have had little, if any, effect on voter turnout. Pratchett *et al.* (2002) also conclude that an increase in voter turnout is not likely because factors such as ‘time poverty’, inconvenience and inaccessible polling procedures are relatively unimportant in explaining turnout decline.

The fact that the Arizona primary of 2000 saw an increase in voter turnout as compared to the 1996 primary, is considered to be a result of very different circumstances. In 1996 there was only one candidate, there were significantly less physical polling places, far less media attention and few get-people-out-to-vote initiatives (Philips and Spakovsky 2002). In Bristol and Croydon, the percentages of Internet voters were 2.7 and 3.4 per cent (Thomas 2001), hence the UK Electoral Commission (2002) concluded that these pilot projects appeared to have no significant impact on turnout. This argument is substantiated by the findings in Marburg where 95 per cent of the online voters argued that they would also have voted if Internet voting had not been an option (see Kersting in this volume).

Direct democracy

If elections can be handled more easily, mobilization for initiatives and referenda could be enhanced as well. This is what advocates of direct democracy maintain. In contrast, some opponents of Internet voting argue that its introduction may lead to fundamental and undesired changes in the nature of representative democratic systems. As some observers notice, once electronic voting systems are implemented, the marginal costs of organizing new elections and citizen consultations may be so low that there will be pressure to organize them more often, perhaps even on a daily basis (Instant Democracy). This would certainly undermine the idea of representative democracy and may be considered a threat. Or, as the IPI report put it: ‘In the long run e-voting could lead to more referenda and threaten the deliberative nature of the political system and the protection of the minority’ (IPI 2001).

The Swiss example, however, shows that distant voting may also have a negative influence on direct democracy. The organizers of citizen initiatives in Switzerland predominantly collect the necessary signatures in front of the polling stations. This is no longer effective if many people rely on postal voting or Internet voting. Without direct contact with citizens on election day, citizens' initiatives may have problems collecting the required number of signatures to start a referendum.

Voter information

Democracy may be enhanced through various strategies. One may be to simplify the act of voting and another to facilitate access to useful information (see Kriesi 2002). Converse (1964) assumed that the majority of voters were characterized by a low interest in politics. In order to reduce information costs to a minimum, voters try to simplify their decision-making process, which is fostered by low political attention and a low competence level caused by a lack of interest, resulting in limited cognitive investment. Downs (1957: 230) argues that voters use cognitive shortcuts by delegating their decisions to other actors, whom they trust, and whom they regard as reliable and competent. Here, the political elite and the political parties play an important role.

In traditional societies, the public sphere is constituted by public assemblies, that is to say by speaking in small groups. This kind of micro-public was replaced by a more or less homogeneous setting of mass-media which was controlled at the national level by some dominant newspapers and mostly state controlled electronic media (television and radio). The development of private radio and television channels led to fragmentation and segmentation of the public sphere. Reinforced by the introduction of the Internet, a 'Balkanization' of the public sphere is taking place (Kriesi 2002).

Kriesi argues, furthermore, that the introduction of Internet voting could contribute to rehomogenization if the voter gets special information on elections and referenda through state-controlled and moderated Internet portals which provide different forms of information and communication. This model refers to the Swiss referenda where each voter is provided with a ballot and special information, which gives him/her a brief introduction to the issues. This not only includes the government's argument, but also a brief overview of the opponent's position, which means the voter is provided with both pro and contra arguments. This could be easily organized in Internet voting. Furthermore, voters need an overview of the relevant partisan cues

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(Kriesi 2002: 20), and such party cues could be included in Internet elections. If independent regulatory agencies were to supervise voting devices as well as the information presented, more reasoned voting behaviour by informed citizens might come about.

Threats

As we have seen, some of the promises of online voting can also be seen as threats. Critiques of online elections often refer to normative democratic theory (see Buchstein in this book). The digital divide and the possibilities of external and internal attacks and manipulation create legal problems and can affect the legitimacy of elections and, in the long run, destabilize the political system.

Digital divide

With respect to the problem of user proficiency, for instance, Internet voting may strongly increase this problem and lead to a digital divide in voting. ICT is not distributed equally in the electorate, nor are electors from various socio-ethnic and socio-demographic backgrounds equally likely to be able and willing to use the technology (see for example IPI 2001; Pratchett 2002). Widespread electronic voting can thus lead to some voters having far more difficulty in voting than others, and even to stigmatization of traditional voters as either Luddites or lacking the technical means or skills to vote electronically (Pratchett 2002).

As far as the digital divide argument is concerned, this threat is also reflected in the available material. In the Arizona primary, the fears of digital division were substantiated. Large urban counties with predominantly white voter populations voted via the Internet in much greater numbers than their counterparts in rural counties with large populations of minority voters (Philips and Spakovsky 2002).

Pratchett and others conclude that Internet voting turnout will most likely mirror conventional voting patterns:

Indeed, the evidence appears to suggest that Internet voting will perpetuate the existing socio-economic and demographic differences between those who vote and who does not, regardless of how widely available the relevant technologies are within society. (Pratchett 2002)

Technical problems and trust

The operation of Internet voting (and this also is the case for all electronic devices and voting machines) by individual voters may be considered a

relatively new risk. As we know from numerous studies, many people have difficulty with operating modern technical artifacts (see for example Wyatt 2001), and with the introduction of machines in the voting process there is a risk of complicating this process for the average voter. Although designers may claim that a certain system is user-friendly and 'foolproof', experience often proves otherwise. The recent experience with (mechanical) voting machines during the presidential election in the USA is just one extreme example.

There are, furthermore, problems related to the reliability and robustness of technical systems. Any complex technology, and especially computerized machines, may break down and cause problems which may be hard to correct. In the case of e-voting machines, risks of disturbances of power supplies and failures in the electronic storage of the votes certainly require special measures in the form of verification and backup facilities, to identify errors and correct them.

All of the Internet voting experiments show that the new technology comes with serious problems which voters often find difficult to solve. In all projects reviewed, there were problems related to the hardware and software needed for casting Internet votes (FVAP 2001; Philips and Spakovsky 2002; Solop 2000; Thomas 2001). In the Arizona Democratic primary, 4 per cent of non-Internet voters, amounting to roughly 1,800 voters, unsuccessfully tried to cast their vote via the Internet first (Solop 2000). In the US military experiment there were 128 motivated potential voters, of which only 91 actually registered online, and of which only 84 managed to cast their vote. Meanwhile, the help desk was contacted 71 times for many different problems relating to the use of digital certificates, installing required software, and access problems (FVAP 2001).

As critics point out, Internet voting may also be vulnerable to insider attacks on the integrity of technology and procedures. Computerized machines especially are essentially opaque and therefore allow for manipulations that are not recognizable to the user or even to supervisors present at the elections (for example computer programs which during voting switch one in 10 votes to a preferred party and which erase themselves at the end of the voting process, without leaving a trace). Although people involved in the manufacturing of voting machines could be capable of such fraud, the more serious danger here would be that of organized manipulation by authorities. In weak democracies or under circumstances of political turmoil, it would be impossible to guarantee the trustworthiness of voting machines, and even in the absence of actual fraud, this could seriously undermine the

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legitimacy of the voting process (see for example Brunazo 2000). However, these threats also exist to some extent with polling machines and even the traditional polling booth.

Vulnerability is also increased since practical implementations of online voting relies on open networks of PCs and servers, which are therefore more vulnerable to accidental failure and intentional attacks. Servers are exposed to intrusion and denial of service attacks rendering election services unavailable. Client PCs used by voters can be attacked by Trojan horses and viruses aimed to spy on ballots, or to modify them. Communications between clients and servers can be intercepted and clients lured to imposter sites (spoofing) which can cause undetected loss of votes or act as a 'man-in-the-middle' between voters and the real vote site (IPI 2001). In short, the risk of undetectable fraud by insiders and corrupt regimes is extended to attacks by outsiders, such as bored wizzkids, radical groups or even foreign powers.

The symbolism of voting

Internet voting also introduces some new risks, which are especially connected to the fact that it may lead to a fundamental change in the social conditions under which the vote is cast. Internet voting does not take place in a public locale in a controlled environment, and this removal of voting from the public to the private sphere is considered to be of symbolic importance. To some people voting is just a form of public-service delivery, to many it is much more:

It is a constituent element of representative democracy and a ritual of coming together of concerned citizens. At this one time, all citizens who enter the voting booth are of equal stature – each casts one vote notwithstanding their differences in race, education, occupation, or net worth. (IPI 2001)

There is concern that with an introduction of Internet voting, elections may lose their visible, public and symbolic character.

The German research showed that among the older generation the electoral norm, that is the duty to vote, is a very important and widespread attitude. In this group voting behaviour is highly ritualized and important for personal identity and social cohesion (see Kersting in this volume; Kersting 2002b). However, the social and symbolic threats attributed to Internet voting may be somewhat overstated. For instance, the idea of a diminishing symbolic importance of the electronic vote is certainly debatable when it comes to the younger generation.

Secrecy

The reduction of supervision and the concomitant threat to the secrecy of the ballot may be the most crucial issue, however. Secrecy of the ballot is considered essential in most modern states, and is adopted in a wide range of conventions and declarations to which many western democracies are signatory, such as:

- The Universal Declaration on Human Rights – Article 21 (3).
- The International Covenant on Civil and Political Rights – Article 25.
- The European Convention on Human Rights – Protocol 1, Article 3 (Watt 2002).

Paradoxically, the secrecy of the ballot in traditional voting is brought about by supervision. The election officers in the polling station see to it that voters enter the voting booth alone and that they can cast their vote free from undue influence and in secret. Supervision, furthermore, reduces the risk of impersonation. With the introduction of Internet voting, this type of supervision will be lost, which clearly compromises the secrecy of the ballot. With voting moving into the private sphere, threats run from social pressure in the family ('honour your father', 'obey your spouse') to actual physical intimidation and coercion in other uncontrolled environments.

As Buchstein (2002) shows, the question of a secret ballot goes a lot further than the idea that people who want to vote in secret must be able to do so. As he argues, there is a strong case for 'mandated secrecy', that is that people should never be made or able to prove to others how they voted. This mandated secrecy is not only desirable because a possibility to prove, in some circumstances, may turn into an obligation to prove, it also prevents people from selling their votes, which is widely seen as undesirable.

Although the available experiments tell us far less about the validity of the arguments of the critics, additional analysis suggest that some of their claims may be toned down. On the one hand, as experience with Internet voting increases, some developers of Internet voting systems have come up with interesting ideas on how to counter certain threats. The threats of coercion, for instance, might be addressed by providing voters with a so called 'distress pin': an identification code which the user could enter instead of the real one and which would allow casting the vote in a normal manner, with the exception that the vote does not count. Similarly, there may be an option of reserving the last day

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of an election for on-paper voting in polling stations only, and to allow voters to replace any earlier vote by a final vote.

Furthermore, research has shown that in actual practice most Internet voters vote without observation and/or assistance (see Kersting 2002b). In Marburg only 5 per cent of the voters reported being observed and receiving some technical assistance during the voting process.

Validity of claims, context and interests

As we discuss the possible promises and threats of Internet voting, it becomes clear that, although we have to seriously consider each argument, we may very well doubt the certainty and absoluteness of some of the claims. With regard to the main arguments of proponents of electronic voting, we find that the central claims of cost-effectiveness, ease of use and higher turnout are not yet substantiated by facts. But the same holds for arguments against electronic voting. The introduction of Internet voting may be associated with problems concerning user proficiency, system reliability and inside manipulation, but actual proof is lacking. Further research and the development of a research agenda which allows comparative studies is necessary (see below).

The second reason why we think it is not possible to present a final evaluation of Internet voting has to do with the importance of the context of the election, which may vary considerably. In the case of the Arizona primary, for example, it is clear that this election took place under conditions which were quite unique. Not only was it a very specific type of election, it was also held in a huge, sparsely populated state, with a limited number of polling stations available and with a record of very low voter turnout. The specificity of the Arizona context makes it difficult to compare this election to the ones in Germany or the Netherlands, where people live much closer together, polling stations are always near and turnout is around 80 per cent.

Differences in context seem especially important when we want to discuss the possible risks of Internet voting. As we already indicated, the risk of large-scale inside manipulation would probably receive much more attention in a young, vulnerable democracy than in a vested democracy with strong democratic institutions. The same argument may apply to fears about the secrecy of the ballot. There are even some circumstances in which such fears may indeed be turned around. In countries and places where elections are surrounded by violence and intimidation, Internet voting could even support the free and secret vote.

Finally, we have to acknowledge that even if electronic voting was guaranteed to have certain consequences, this would not oblige different actors to come to the same conclusions about this instrument. The clearest example is the idea that Internet voting may lead to more frequent elections and to more direct democracy. Even if this was proven, which it is not, different people might assess these facts in different ways. Some would see this as undermining the valued (representative) democracy, whereas others would judge it as a welcome strengthening of democracy. The same holds for the fear of a digital divide in voting: where parties with a less-educated, poorer electorate may be expected to really embrace this issue, parties with a more-educated, richer and predominantly male electorate will probably not worry much about it.

Internet voting: present forms

So, we have to accept that different actors in different circumstances may come to very different conclusions regarding Internet voting. What does this mean in practice, and what does it mean for the actual adoption of Internet voting? Do different countries in different circumstances actually reach different conclusions? Or, are differences in circumstances, beliefs and interests relatively small, with consensus, either in favour of or against Internet voting, and a convergence in policy as the result?

As we compile the information from this volume, together with additional research (Svensson and Leenes 2003), we find that there are clear indications for our thesis that due to differences in context, countries will diverge with respect to Internet voting. There seem to be different strategies towards the implementation of Internet voting. The first route starts with differentiating between political spheres, where a local election is seen as a testing ground for new instruments of voting. The second path involves differentiating the steps towards electronic voting. This begins with the introduction of electronic registration, which seems to be more of a problem than the introduction of polling machines. The next step, kiosk voting, is leading towards less control of the electoral process. The last step, the implementation of remote Internet voting, makes the state-controlled electoral supervision of the secrecy and the privacy of the vote impossible. Here the citizen is responsible for respecting and protecting his/her rights. Table 16.1 provides an overview of the ICT context, the political context, the use of different voting technologies and policy plans in national and federal elections. (The data on the policy plans are based on a survey

Table 16.1 Voting technology and voting policy in Western Europe

<i>Technology /policy</i>	<i>Austria</i>	<i>Belgium</i>	<i>Germany</i>	<i>Finland</i>	<i>France</i>	<i>Ireland</i>	<i>Italy</i>	<i>Netherlands</i>
<i>Elections</i>								
Low turnout								
High number of elections and referenda								
<i>ICT</i>								
High use of ICT				x			x	x
Introduction of private online elections	x	x	x				x	x
<i>Paper technology</i>								
Early vote	x		x	x		x		
Postal vote			x			x		
Proxy vote					x			x
<i>Current electronic voting strategy</i>								
Polling machines		x	x		P	x ^b	P	x
Kiosks						P		P
Internet voting			L					L

Notes: x = implemented; P = planned; L = long-term planning; ^a Electronic polling machines were introduced in Cologne and some other cities; ^b Pilots in England during the 2002 local elections with all-postal voting, Internet voting, SMS voting and telephone voting.

Table 16.1 Voting technology and voting policy in Western Europe continued

<i>Technology /policy</i>	<i>Norway</i>	<i>Portugal</i>	<i>Spain</i>	<i>Sweden</i>	<i>United Kingdom</i>	<i>Czechoslovakia</i>	<i>Estonia</i>	<i>United States</i>
<i>Elections</i>								
Low turnout					x	x	x	x
High number of elections and referenda						x		x
<i>ICT</i>								
High use of ICT	x			x	x		x	x
Introduction of private online elections	x							x
<i>Paper technology</i>								
Early vote	x	x	x	x	x ^b	x		x
Postal vote	x	x	x		x ^b	x		x
Proxy vote								x
<i>Current electronic voting strategy</i>								
Polling machines		P			P	P		x
Kiosks		P			x	P		x
Internet voting					x ^b		P	

Notes: x = implemented; P = planned; L = long-term planning; ^a Electronic polling machines were introduced in Cologne and some other cities; ^b Pilots in England during the 2002 local elections with all-postal voting, Internet voting, SMS voting and telephone voting.

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commissioned by the Dutch Ministry of the Interior and Kingdom Relations, project number DIOS/IC2000/U66759.) When we look at this table, important variations emerge.

Although voter turnout seems to be a problem at all lower levels in all the political systems analysed, turnout is extremely low in national elections in the UK, Estonia, Switzerland and in the USA (see Kersting 2002a). The number of elections and referenda in Switzerland and in the USA, however, is high. We argue that there must be a high pressure on the administration to implement efficient electoral systems.

The penetration and proliferation of the Internet is quite high in the Scandinavian countries, Estonia and the USA, and this level may in due course be expected in all OECD countries. The introduction of smart cards as identity cards, which could also be used as a digital signature for verification in online elections, is well on its way in Estonia and Italy. In Germany, the legal framework needed to implement the digital signature exists. Furthermore, the USA, Germany and some Scandinavian countries have experience with private-sector online elections.

With respect to 'paper technologies', all countries still use the traditional polling booth but many also offer the possibility of postal voting and/or proxy voting. Advance voting is also possible in most of the countries. The Netherlands and France allow proxy voting, while postal voting is lacking. Four countries, Belgium, the Netherlands, Germany and some parts of the USA have adopted polling machines. The Netherlands have had them for well over 20 years and 90 per cent of the votes are cast electronically. Belgium is expanding the number of these machines steadily. In Germany and the USA, polling machines are only used marginally. Internet voting is not yet an accepted method of voting in any European country, or elsewhere for that matter.

With respect to the explicit Internet voting targets in our sample, we find that there are clear differences and that we may distinguish between three groups of countries. The first group consists of Austria and Spain, together with the Scandinavian countries. These countries rely on the traditional 'paper-and-pencil' voting schemes and seem quite happy with the status quo, which is reflected in the fact that there are no policy plans with respect to Internet voting.

France, Ireland, Italy and Portugal make up a second group. These countries have traditional voting schemes and plan to introduce polling machines, like the Netherlands, but have no plans to convert all the way to Internet voting. However, Portugal will carry electronic

voting a little further than the others by introducing voting from kiosks. Ireland has taken the first step to the implementation of polling machines this year by allowing voters in three polling districts to use electronic voting machines during the local elections.

The third group of countries consists of Estonia, Switzerland, the UK, Germany, the USA and the Netherlands. They are planning to go all the way. The Netherlands, Germany and the USA are thinking of extending, step by step, the already existing polling machines to voting from kiosks (existing in the USA) and then to Internet voting. Here, the US and German governments are even more cautious about the final introduction of Internet voting. Estonia, the UK and Switzerland plan to take a larger leap. The UK has ambitious Internet voting plans which it aims to introduce after 2006 (e-Envoy 2002), and there have already been a number of experiments (with legally binding results) with various types of Internet voting during the 2002 local elections. Switzerland has established a policy outlining the experimentation and introduction of ICT in the voting process to facilitate voting and ease the organization of referendums and elections (Schweizerischen Bundesrat 2002). Estonia will implement Internet election in national elections in 2005.

Diverging democracies?

The observations from these data may be interpreted as nothing more than the result of differences in the speed of development of Internet voting, and it may suggest that in the near future all countries will take the road to electronic and Internet voting. Given our analyses in the previous sections and information about the background of the differences in policy plans, we think this is not the case. In our opinion, the difference is not one of speed, but a reflection of the position countries take with respect to the desirability or necessity of introducing Internet voting.

In other words, the plans reflect the assessment of the promises and risks of electronic voting. Estonia, the United Kingdom and Switzerland seem to be on the brink of deciding in favour of Internet voting; the Netherlands, Germany and the USA are planning online voting in the long run and seem to rely on a stepwise approach. In some countries there is high pressure on the government to facilitate the voting process. In Belgium, polling machines have been introduced and in Italy an implementation is planned. Italy has, because of its advanced discussion of an electronic identity card, a positive framework for implementing Internet voting, but has, however, no

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experience with postal voting, and the secrecy and privacy of the vote is highly valued. Other countries, in particular Spain, France and the Scandinavian countries, are not lagging behind, but have simply drawn a different conclusion with respect to the need to introduce online voting.

Looking at the reasons why various countries are not opting for Internet voting we find that, together with more formal legal arguments, Internet voting is currently dismissed as an option because of its threats to the integrity of the voting process. As Olsson and Åström (see their chapter in this volume) argue, Sweden, although advanced in electronic service delivery, is not taking any serious steps towards Internet voting because of its strong democratic tradition and its emphasis on security. In France, a parliamentary bill to introduce Internet voting was not passed, and some experiments were even prevented by a ruling of the Commission Nationale de l'Informatique et des Libertés (<http://www.cnil.fr/thematic/docs/internet/d02_022.pdf>).

Given these strong conclusions against the implementation of Internet voting, the question is, of course, why other countries are aiming to become electronic voting champions. Can we explain why Internet voting is implemented in countries such as Estonia, the UK and Switzerland? As suggested, such an explanation may be found in the specific circumstances and in the beliefs and interests of groups promoting Internet voting. We will now take a more specific look at some of the countries in Table 16.1, starting with the prospective e-voting champions – the UK, Switzerland, Estonia, the Netherlands and the USA – followed by a group of more cautious countries – Austria, Finland, Sweden and France.

The United Kingdom

In order to explain Internet voting ambitions in the United Kingdom, we find that we can point to several reasons why this country is more eager to adopt online voting than others. First of all, an important factor is the strong modernization drive within the British government. Many policy documents all over the world express the desire to modernize government and to invest in an e-society, with of course an 'e-government'. However, where most of them mainly produce e-government rhetoric, the UK seems to take e-government seriously by establishing agencies such as the office of the e-Envoy and making e-government the responsibility of a senior cabinet member. Modernizing the voting process in order to make it fit a twenty-first century lifestyle is an endeavour that follows the e-government's general aims.

A second important factor is the serious decline in voter turnout in the UK, which is seen as a major cause of concern (e-Envoy 2002). Related to this problem, the Political Parties, Elections and Referendums Act 2000 (PPERA) was passed. This Act established the Electoral Commission, whose principal aims include the encouragement of participation in the democratic process and the promotion of electoral registration and voting. Where concerns about low turnout have already led to the introduction of postal ballots, we may see the introduction of ICT as an additional measure along this line. Although both the e-Envoy and the Electoral Commission stress that the introduction of postal ballots and ICT in itself will not increase voter turnout (e-Envoy 2002; Electoral Commission 2002), decreasing turnout is still an important factor driving Internet voting enthusiasm.

Moreover, as the PERA allows local authorities to conduct pilots with new voting techniques under supervision of the Electoral Commission, it has opened the door for many local entrepreneurs who for many different reasons may be eager to have a go at electronic voting. Not only are the local experiments seen as an excellent chance for local authorities to promote themselves as modern and efficient, but several local managers seem to regard electronic voting as an excellent career opportunity as well. In this enthusiasm local authorities and their managers find themselves backed by international 'election service providers', who according to Ledbetter (2000) 'spend like mad' to ensure that such elections work and that the whole world will hear about them. The evaluation of the pilot projects shows that introduction of postal voting could enhance voter turnout, but that electronic voting instruments were not successful in the same way (see Norris in this volume).

Switzerland

Switzerland also has a relatively low turnout in national elections. In the 1990s postal voting was introduced, in part to reverse the trend of decreasing voter turnout, but it has not succeeded in this respect. This was one reason why, in 2001, Switzerland introduced plans for online voting. Electronic voting will be developed through three separate projects: an electronic voter registration is to be established; a digital signature as a base for national and local referenda will be introduced; and, in Geneva, online voting is to be tested. In the latter case, the administration takes a practical view by not using the digital signature, which is not yet well-known or accepted by citizens.

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Online voting is a feasible option for Switzerland for several reasons. For one, the large number of polling procedures (elections as well as issue voting) on the federal, cantonal and communal levels each year suggests that Internet voting may entail considerable economic and organizational advantages. Secondly, the Swiss norms concerning the secrecy of votes are less pronounced than in other countries. Switzerland has a long tradition of open voting in public assemblies, and with the postal-vote legislation of the 1990s Switzerland has already gone a long way towards 'distant polling'. Thirdly, the proliferation of elections and referenda has led to a deritualization and desacralization of elections, which means that the acceptance of online voting in Switzerland is probably quite high.

Although there are clearly reasons why internet voting in Switzerland might take off, there are also concerns. The project is thought to include a special portal as a 'one-stop homepage' for elections, where, beside the possibility to vote, information on political parties and referenda will be found. This seems convenient for the voter, but it is also a cause for concern. An online voting system lacks a cooling-down phase, which introduces or enhances the possibility of casting ill-considered, spontaneous or last-minute votes. This could lead to much 'junk voting' despite the amount of electoral information on the Internet. Also, the gap between modern online voting at home and the traditional voting system often in the form of an open ballot is seen as problematic. Finally, the moderation and the selection of the Internet portals are seen as problematic. The mobilization of weakly informed citizens is feared.

All in all, the balance seems to tip towards experimentation and, finally, the introduction of online voting in Switzerland. In January 2003 in Geneva's suburb Aniere, the first online referendum took place.

Estonia

Estonia is a new democracy that wants to catch up with modern democracies and is prepared to live with the uncertainty involved in new electoral instruments. The conditions for the implementation of electronic voting are right: new electronic technology is widespread and so is the use of the Internet. It is therefore not surprising that plans to implement online voting already existed prior to the national elections of 2003. However, because of political calculations, amendments of the electoral legislation have postponed the introduction of online voting until 2005. The identity card, which already contains

facilities for a digital signature, will be used for verification. It is planned that the online voting process should stop one day before election day, and that the voter may revise his/her Internet vote by voting at the polling station. Diminishing the secrecy of the vote is not considered to be a reason to abstain from introducing electronic voting. The Estonian electoral legislation gives full responsibility for the secrecy of the vote to the individual citizen.

The Netherlands

When we look at the general pro and contra arguments concerning Internet voting, we would not expect the Netherlands to be one of the forerunners in this field. The weight of the most crucial arguments in favour of introducing Internet voting seems limited here. Voter turnout has decreased over recent decades, but not as dramatically as in the UK or Switzerland (in the turbulent elections of 2002 and 2003 there was in fact a slight increase). As the Netherlands is the most densely populated country in Europe, organizing access to polling stations has never been a major problem. In most municipalities polling machines are in place, which means that elections are run very efficiently, with some of the smaller municipalities capable of offering vote counts seconds after the polls close.

Furthermore, the Netherlands has a history of being prudent in protecting the individual and promoting the secret character of voting. For this reason, postal voting never made it in the Netherlands and proxy voting is limited (a voter may cast a maximum of two proxy votes). So, when we look at the arguments that apply to the UK and Switzerland, the Netherlands really seems the odd one out.

When seeking to explain why the Dutch seem to be taking the road towards Internet voting, we are left with two possible reasons. The first is their very extensive and positive experience with polling machines. The Dutch are quite used to the application of this technology in the voting process, and this may be a reason why policy-makers in the Netherlands are less fearful of Internet voting than policy-makers in other countries.

The second reason has to do with political ambitions and political lobbying. Just like the British, the Dutch government strives to be at the forefront of e-government and government reform and, just like in Britain, there are links between the development of e-government and the development of electronic voting, both coming from the same ministry. Moreover, the former Minister for e-Government, who was one of the driving forces behind electronic voting, is a

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member of D66. This party has, since its inception in 1966, campaigned for the introduction of referenda and elected mayors, aims that are quite consistent with the visions of electronic voting. In addition, there is an active Internet voting lobby consisting of organizations such as PELS (Platform Electronic Voting) and EPN (Electronic Highway Platform NL), which have been successful in mobilizing politicians to back electronic voting. This has resulted in persistent demands from members of parliament to continue with the introduction of electronic voting.

Having said this, we also have the impression that the responsible ministers may have started to back down in 2002 (Ministerie van Binnenlandse Zaken en Koninkrijksrelaties, 2002), and despite the responses to the survey carried out by Svensson and Leenes (Svensson and Leenes 2003, forthcoming), we are not certain that the Netherlands will really be one of the first to introduce Internet voting.

Germany

In Germany the expectation is that by implementing online voting, the time needed for counting and recounting votes can be reduced, the number of invalid votes minimized and new technologies for the handicapped can be developed. Electronic voting would also contribute to a higher mobility of voters. The existence of postal voting in the national elections (used by 18% of the electorate in 2002) paved the way towards electronic voting, just like in Switzerland. A number of simulations and binding pilot projects using online voting have also taken place.

Germany foresees a stepwise implementation of electronic voting. At the beginning, all polling stations are to be connected and a central voter register established. With the introduction of Internet and Intranet networks any voter has the possibility of voting in any polling station in Germany. In the following stages kiosk-voting and further online elections are to be implemented, with the possibility of remote online voting at home. Pilot projects are to be tested at the local level before implementation on regional and national levels.

There are also concerns. The constitutional framework emphasizes that external manipulation must be prevented, and that the secrecy of the vote during the voting process must be preserved. The principle of the one-man-one-vote idea should be ensured by special instruments for voter verification, such as electronic signatures, which receive a lot of attention in Germany. Furthermore, the anonymity of the vote should be protected for a long time.

USA

At the outset, the United States held a leading position regarding electronic voting (Solop 2002). The Clinton and Gore administration saw electronic government and electronic democracy as one of their main political goals. There is also an extensive lobby of electronic voting software and hardware vendors that keenly try to jump the e-government bandwagon. Before the presidential elections in 2000, a series of pilot projects with electronic and online devices were tested. Furthermore, trade union elections and elections of shareholder assemblies were organized via the Internet. Nevertheless, the primary of the democratic party in Arizona in the spring of 2000 is widely seen as the first binding and quite successful Internet voting experiment.

The problems of the presidential elections in 2000 have further sharpened discussions on standardizing elections and reforming electoral legislation, and concerns with respect to software integrity, loss of secrecy of the vote and other issues have somewhat dampened the initial enthusiasms. Nevertheless, the decentralist US structure, which places the responsibility for organizing elections in the hands of county administrations, was maintained, and skepticism, and also optimism, about the introduction of online voting persists.

* * *

Apart from the countries above with a very positive stance towards the introduction of electronic voting, there are also more cautious countries who value the opportunities and risks of electronic voting differently and hence reach different conclusions. We will discuss four countries in this group, Austria, Finland, Sweden and France, in more detail.

Austria

In Austria, voter turnout at the election of the national parliament had been considerably high. Nevertheless, at second-order, less important elections, as for example for the social partnership (*Sozialpartnerschaft*) and the Austrian student-union elections, turnout was low and even decreasing. Here, the Austrian student union and the Federal Chamber of Commerce plan to implement remote Internet voting by developing a technical and organizational concept, by changing the legal structure and by planning pilot projects in the 2005 elections. With the new laws on data protection and digital signatures and the introduction of the national ID card, the possibility of an implementation of online voting within these 'social elections' is enhanced. In national elections

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the principles of voting (universal, equal, immediate, personal and secret vote) are highly protected, and postal voting was restricted to the group of citizens abroad. So, an introduction of online voting is not on the political agenda for the near future.

Finland

A relatively high level of Internet use is characteristic of Finland, but the existence of a digital divide is still conspicuous (Grönlund and Setälä 2002). Two-thirds of the population are Internet users, although the percentage of women users is lower, especially in the age group over 55 years. Students and middle and upper-management employees are somewhat above the national average, while the unemployed are below. The Internet is also widespread in rural areas. Electronic government and electronic administration are accepted by three-quarters of the population.

The possibility of advance voting also exists. Voter turnout in Finnish parliamentary and local government elections is decreasing, and in rural areas nearly 50 per cent of the electorate uses the option of voting in advance (the advance vote is organized mainly at post offices). In the cities, 36 per cent make use of this option. Internet campaigning is more and more becoming a feature of political discussions, and opinion polls are also organized via the Internet. There is a pilot project on the Åland Islands involving electronic voting: this small group of islands with around 25,000 inhabitants has its own parliament with legislative competencies and its own budget. Here, mail-in voting also exists and 1 to 2 per cent of the voters make use of this channel.

The high level of interest in communication technologies in Finland does not seem to result in strong pressure with regard to implementation of Internet voting. Social pressure on voters within families and the danger of vote-selling are perceived as factors to take seriously, and political and technical barriers also receive much attention in public discussions. Other reasons may be that in Finland elections are not as frequent as in many other countries, and that the electoral system has a good reputation. In the discussion on online voting the introduction of electronic identity cards came up: for the local election of 2003, online registration was planned, but the introduction of online voting is consciously postponed.

Sweden

In Sweden, societal impacts of the new Information and Communication Technologies are, just as in other Scandinavian countries, extensive. Still, only moderate steps have been taken towards online voting. According to

Swedish electoral legislation, the casting of the ballot is to take place on election day inside the polling station. However, there is the possibility of voting in advance in special public rooms, and, as in Finland, the post offices function as polling stations for advance voting. Postal voting in the Swedish sense is not voting by mail, but consists of advance voting in a post office. This kind of voting has existed since 1942, but has recently been taken up more and more by voters. In 1988, 37 per cent of the voters cast their votes in a post office. Mail-in voting only existed for citizens visiting or residing in foreign countries, because the embassies in those countries are not authorized to act as polling stations. Skepticism regarding online voting is widespread; the traditional voting process is seen as trustworthy and simple, unlike online voting. These views are dominant among the older generations, but nevertheless opinion polls show that 55 per cent of the Swedish population would prefer voting through the Internet. Also in Sweden the social aspects of traditional voting (going in person to the polling station, etc.) carry much weight.

The Swedish case demonstrates that the barrier to online elections is not necessarily widespread distrust of new technology, but rather a deep-seated satisfaction and conservatism regarding existing electoral institutions.

Notwithstanding the general reservation towards electronic voting, there are some experiments in which the government takes an active interest. All experiments concern hybrid elections, that is in elections with a more private and less public character. In an election of the student parliament of Umeå University, 90 per cent of the voters voted alone without any influence from other people. Further experience with Internet voting was gained in elections within political parties. The Swedish conservative party (*Moderaterna*) recruited their candidates in September 2001 by Internet voting. This was, however, only a pre-election, which had no binding consequences for the party. The first actual steps towards electronic voting are plans to install electronic polling machines in polling stations, because here the electoral process and the secrecy of the vote can be controlled by the state administration.

France

France has taken a special route to the information and communication era, including steps towards online elections. The adoption of the Internet in France is, compared to the other countries in this overview, fairly low (20%). This may in part explain the low level of support electronic voting receives from politicians; only 5 per cent of them favour electronic voting. Another explanation for the lack of support is the

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fact that France has negative experiences with postal voting. Postal voting was strictly regulated until the 1970s and was partly abolished because a massive wave of rigging had taken place.

On the local level there are experiments and proponents of electronic voting. In Corsica, for instance, electronic voting devices have been in use quite successfully since 1977. The city of Issy-Les-Moulineaux has taken electronic government quite seriously, and Internet coverage there is high compared to the rest of France. Some 35 per cent of Issy-Les-Moulineaux residents use the Internet. Official documents are online, the city council discussions can be followed via the Internet, and many municipal services are delivered online. It is not surprising that this city, and some others, opted to experiment with online voting during the presidential and parliamentary elections in 2002. The experiments provided an option to vote via the Internet parallel to the traditional way of voting. Other pilots were also proposed, but needed approval of the Commission Nationale de l'Informatique et des Libertés (CNIL). This organization disapproved of some of the pilots, arguing that verification was handled only by a special code and a password, social pressure during the electoral process could not be controlled, and finally that the server handling the Internet voting process was situated in New York and thus outside of control by the national authorities. Two pilot projects (in Paris and in Merginac) got a better evaluation from the CNIL because they were using smart cards, and another pilot, in the Parisian suburb of Voisy-les-Bretonneaux, also received CNIL approval. The Ministry of the Interior, however, criticized the concept.

Whereas in the public sector there is little support from politicians, and regulatory bodies such as the CNIL are careful in assessing pilots, online voting is becoming more and more attractive in the socio-economic sector. Shareholder legislation and electoral legislation for universities have changed in favour of online voting.

Conclusions

Looking at the ongoing debate about Internet voting and its current status as a policy option in many different countries, a number of conclusions can be made:

- First, we have to acknowledge that Internet voting clearly involves some enticing promises as well as serious threats. On the one hand

we may hope for the mobilization of young voters, the overcoming of existing political divides, the increase of voter turnout and improved administrative efficiency. On the other hand we may fear new digital divides, more individualized decision-making, superficial democratic participation, the loss of secrecy and large-scale election fraud.

- Second, we find that the expressions of such promises and threats are mainly just what they suggest: preliminary expressions of uncertainty about what the future may bring, formulated in order to influence decisions, to bring about or to prevent the very development that is hoped for or feared.
- Third, as noticed in cross-country comparisons, the various countries are now reacting quite differently to these promises and threats, with interpretations and policy plans clearly related to the institutional context of each country.

In countries such as Switzerland, Estonia, the Netherlands and the UK most attention seems to be focused on the promises of Internet Voting, while in Scandinavia the promises seem to be largely disregarded because of satisfaction with existing electoral procedures.

Research agenda

That different countries reach different conclusions with respect to prospective changes in one of the central processes in democracy is, of course, not surprising. In fact, it might be a worrying sign if every country adopted exactly the same type of procedure and processes. The socio-cultural contexts differ between countries and this indeed should have its impact on institutional processes. However, the choices countries make should be made on the basis of knowledge about real opportunities and threats and, as this chapter has sought to demonstrate, more experience may be needed before a definite assessment can be made in this respect. To collect the necessary empirical data to make well-considered choices, we propose that a systematic research agenda be developed, of which we present a first outline below. As we have argued in this chapter, comparative research and attention to the context should be key features of research on electronic elections.

- *A digital divide and voter turnout.* This is probably the most crucial issue. Is the divide likely to persist, and perhaps even widen, or will it diminish as ICT equipment becomes more and more widespread? This is not only a question of further spread of technology and

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reductions in the price of equipment, but also a question of making the technology really user-friendly. But even then, there may be people who decide to opt out, for instance because ICT does not benefit them. It is also a question of public policies and efforts with regard to the training of users. And of course, the core question here is whether or not online voting will affect voter turnout. Will it, or will it not? What are the impacts, and under what circumstances? Perhaps turnout of certain groups will be affected (the educated and well-to-do?) while others remain untouched by the new opportunities? In the latter case, the digital divide may actually widen.

- *Trust in online voting.* This issue is related to the general legitimacy of, and trust in, political systems and governments. Research may focus on two sets of questions: How do factors that generate (or weaken) trust in voting procedures, including online voting, compare to factors that generally generate trust in political institutions? Under what conditions are voters and electoral authorities willing to face some measure of risk in voting procedures (as they are in for example Estonia)? Will online voting actually increase the level of trust in elections and institutions in some segments of the electorate?
- *Secrecy.* Secrecy is meant to guarantee anonymity in relation to the state administration and also to help keep one's vote to oneself and not have to share it with other social groups, such as the family or employers (privacy). Because the question of secrecy and privacy is important in mail-in voting, an analysis of existing postal voting habits can be used as an indicator of the effects of online voting. The problem of early voting is also relevant in Internet voting, so advance voting in general should be evaluated.
- *Voting and social capital.* This issue deals with the context and the situation in which the ballot is cast. As mentioned above, to many voters the traditional way of voting is an opportunity to express identity and to confirm social and political status. Related to this issue is the question of the extent to which voters prefer to involve others in their decisions – including technical help – or desire full privacy throughout the process of choice and reflection. Voters may be more varied in their habits and preferences than is conventionally recognized.
- *Internet politics and policies.* The decision-making process surrounding the initiation and implementation of Internet voting often bears the imprints of strong economic and political forces. The actors in these processes include not only bureaucrats, ministers and their

advisers, but also lobbyists who work on behalf of the ICT industries. How decisions on Internet voting and related issues are reached, and how the processes may vary, should form the subject of comparative cross-country research.

- *Internet voting practices and procedures.* The issue here is how Internet voting is actually organized and carried out. This may vary from country to country, and also within countries, for example in comparing local and national elections. What are the experiences of different countries and levels of government? What are the typical problems in arranging such elections? Are there some ways that are better than others? Is it possible to develop a set of best-practice criteria?
- *Citizen empowerment and political choice.* Online voting does not occur in isolation, its introduction is usually accompanied by a variety of electronic communication channels to enhance citizen access to relevant election and policy material. Political parties, furthermore, develop their own websites to have a presence on the net, especially during election campaigns. For those with access to the net these electronic channels are clearly a source of empowerment, as it reduces the cost of political communication and transactions, also for individual citizens. Other things being equal, one may assume that more and better information makes for more informed and rational political choices and thus an enhancement of democracy. Exactly how citizens make use of the net for political purposes and how it influences the choice process is, of course, a vital future research issue.
- *Varieties of e-democracy and trajectories of change.* Just as democracy is a multifaceted ideal of governance, it is also a dynamic form of governance evolving in response to crises, pressures, needs and interests. Consequently, democratic countries vary considerably in their institutional forms and procedures. ICTs may well add to this variation, helping to create new forms of governance and participation, as suggested in the introductory chapter. Not all forms may be seen as equally desirable by everybody. A destructive potential may also be inherent in some forms of ICT (for example e-mail bombardment). The essential feature of ICT – faster communications – is also likely to speed up the processes of political evolution. It was suggested in the introductory chapter that Internet voting is emerging as an element of wider trends of individualization, liberalization and automatization of electoral procedures. It has been pointed out above, however, that contextual configurations of individual countries influence the

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spread of such trends. Some countries, and even some regions within countries, may experience faster change than others. The comparison of trajectories of change is, therefore, another focus of research that we wish to put on the agenda.

The plea we make at this end of this book is that research on Internet voting and online elections should be carried out in a framework that is capable of grasping the wider democratic implications of these developments.

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