

VOTING ONLINE AROUND THE WORLD

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In 2000 there were a number of notable efforts in the United States to use Internet voting. In that year, two presidential primary elections—the Alaska Republican “straw poll” and the Arizona Democratic primary—included remote Internet access as one channel for voting (along with traditional by-mail and in-precinct voting). Then, in the November 2000 general election, eighty-three military personnel and overseas civilians in five jurisdictions nationally were able to cast official ballots using the Internet, by participating in the Voting Over the Internet (VOI) project sponsored by the Federal Voting Assistance Program of the U.S. Department of Defense.¹

Since those heady days in 2000, the movement to use Internet voting in the United States has stagnated. In 2004 the Michigan Democratic presidential primary election did allow balloting over the Internet as one method of voting. However, in January 2004, the Secure Electronic Registration and Voting Experiment (SERVE), an Internet voting project sponsored by the U.S. Department of Defense that was to build on the success of VOI, was canceled when a small number of academic computer security scholars argued that any form of Internet voting is inherently insecure. The debate in the United States regarding the security of in-precinct electronic voting has created a political environment in which it is more difficult to initiate proposals for experimenting with Internet voting.

The concerns of some American computer scientists regarding Internet voting has not stopped the use of the Internet for voting outside the United States. In fact, interest in and experiments with Internet voting have been

exploding in Europe and Asia. Since 2000 Internet voting pilots have occurred in several European nations, including Switzerland, France, and the United Kingdom. In Estonia Internet voting has become a normal channel for voting in both local and parliamentary elections, alongside early voting and in-person Election Day voting. The experiences in these nations have provided information about Internet voting and the factors that affect Internet use as a voting platform.²

INTERNET VOTING IN THE UNITED STATES

The 2000 election year was the high-water mark for Internet voting in the United States: Internet ballots were cast in two presidential primary elections and five jurisdictions took part in the VOI trial in the November general election.³ VOI provided a baseline for moving forward with Internet voting in the United States because it targeted a limited population—overseas civilians, deployed military personnel, and their dependents—that was known to have difficulties voting through traditional means.⁴ It also leveraged existing interest among many election officials for serving these voters and leveraged Department of Defense dollars for the research and development of the system. This trial was a moderate success; however, it did provide a baseline for SERVE. SERVE would have allowed eligible military voters, dependents, and overseas civilians—often referred to as UOCAVA voters because of the federal law that enfranchises them—from fifty-five jurisdictions across the United States to vote using the Internet in the 2004 elections. However, the controversy over electronic voting in 2004 spilled over to the debate over Internet voting, and a report by four American computer scientists raising concerns about SERVE led FVAP to cancel the program, at the behest of the Department of Defense.⁵

Since the cancellation of SERVE, there has remained interest in using the Internet to enfranchise UOCAVA voters, and small-scale uses continue among political parties. The continued deployment of military personnel in Iraq and Afghanistan, combined with high levels of Internet connectivity among these voters, has led to continued interest in using the Internet to enfranchise voters. In 2004 Internet voting was used in Michigan's Democratic presidential primary. There 162,929 caucus votes were cast; of those, 29 percent were cast using the Internet.⁶ By contrast, in the 2000 Arizona Democratic primary, 42 percent of all ballots were cast over the Internet.⁷ Interest has been expressed by election officials in Alabama and Florida to conduct Internet voting trials in 2008 to serve military personnel covered by UOCAVA, although as of this writing it is not clear whether those projects will proceed in 2008.

INTERNET VOTING IN EUROPE: TRUE EXPERIMENTATION WITH A VOTING TECHNOLOGY

The patchy, disconnected uses of Internet voting in the United States can be contrasted with the more systematic efforts to use Internet voting in Europe. Since 2000, Internet voting trials have been conducted in Estonia, France, Ireland, the Netherlands, Spain, Switzerland, and the United Kingdom. Three of these countries—Estonia, Switzerland, and the UK—have conducted large-scale, concerted efforts to learn more about Internet voting and its impact on election administration, turnout, and political campaigns.⁸ These nations have all conducted Internet voting efforts in conjunction with robust evaluation efforts meant to identify what works and what does not. Finally, these nations have experimented with electronic voting under legal rubrics that provide clear guidance regarding how such pilots and experiments are conducted.⁹

The legal framework that governs the various pilot projects is critical for ensuring that these pilots can be successful. In the United States, there is a cacophony of individual federal and state statutes that do not provide any clear path for promoting technological innovation in election administration. In fact, legislation that has been enacted in many states and considered at the federal level explicitly requires a specific technology—a paper audit trail—that locks states into a specific technological solution and does not allow any innovation outside that solution. In most of the states that have adopted a paper trail, electronic voting innovations that are remote—outside of a polling place on Election Day—are completely banned because of technological requirements.

By contrast, the legal frameworks in many European nations are much more open to experimentation and learning what works in election reform. For example, consider the experience of the United Kingdom, where the government started conducting electronic voting pilots in 2002 that involved numerous technologies, including voting over the Internet, voting on precinct-based touch-screen machines, voting over text messaging systems, voting via the telephone, and voting using interactive digital television services.¹⁰ These experiments were conducted under the auspices of the nation's Electoral Commission (EC) in order to evaluate each reform and its impact on turnout, administrative efficiency, and trust in the electoral process. There have been several sets of pilot schemes implemented since 2002, with each set building on the results of the previous one. The pilot process allowed for a wide range of technologies to be tested, but in small, carefully chosen settings. Typically, multiple channels for voting were also used, which ensured that the impact of any problem that arose with any given voting system being piloted would be minimized.

Each of the pilot projects conducted in the UK is evaluated using a standard set of criteria that are contained in the statute creating the Electoral Commission and its mandate to conduct pilots. These criteria have been supplemented so that

a complete picture of the pilot projects can be developed. The pilot evaluations have given the Electoral Commission broad knowledge about the effects of the reforms on voters and on election administrators. In the voting pilots, it was critical to learn how the public-private collaborations would work, given that many new forms of voting involve contract negotiating and project management beyond what many of the jurisdictions had done previously. For example, the EC report on postal voting—a seemingly simple, non-electronic voting reform—states that new administrative capacities have to be developed by election officials, the political parties, and third-party contractors for this reform to be successful.¹¹ Many of these reforms require election officials to address the issues associated with contracting and procurement. Survey data for many of the pilots provided the Commission with information regarding public attitudes, such as concerns some voters have with the potential for fraud in the system, a finding that occurred with the postal voting as well.

The EC model is not unique to the United Kingdom or to the other nations previously noted; for example, Dutch experiments with Internet voting are authorized under an Experiments Act. The most developed legal framework to facilitate Internet voting, however, is in Estonia. There the national legislation provided a strong legal framework for Internet voting, first in local elections and then in parliamentary elections. Estonia's Digital Signatures Act allows for online authentication of individuals for governmental transactions and includes three specific Internet voting laws, one for each level of government: local elections, parliamentary elections, and referendum elections each has its own law governing how Internet voting can be used. Each law states when Internet voting can be conducted, the way in which it is to be conducted, and the way in which any problem with the system will be redressed. The Estonian system also has the benefit of having been tested legally. Once passed, these laws were challenged but were eventually upheld by the Estonian Supreme Court and are viewed by many as a model for innovation.¹²

Similarly, the Swiss government has a legal platform that supports experimentation with electronic voting in three cantons, Geneva, Neuchâtel, and Zurich. The Swiss also have a law that clearly states when Internet voting can be used—in referendum elections—and how the system is to be implemented. This clarity helps to build confidence in the system and develop continuity of use, something sorely lacking in the American trials of Internet voting.

The Impact of Internet Voting

Internet voting has been used only for a short period, but the impact of this technology can already be seen. For example, in Estonia use of Internet voting went from 2 percent (9,861 Internet ballots cast) in the 2005 municipal elections to 5.5 percent in the 2007 parliamentary elections (30,275 Internet ballots cast).¹³ Voters there are becoming more used to online voting as the technology

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is being used consistently from election to election nationwide. Survey data also suggest a logical pattern of voters moving toward more convenient platforms, away from polling place voting on Election Day to early voting at polling places to Internet voting. Evidence in Estonia suggests that, as many had hypothesized, Internet voting helps to mobilize younger voters to participate in the election process. It is also apparent that e-voting may help to bring more casual voters—those who vote in some elections or from time to time—into the electoral process. Critically, 10 percent of individuals who were e-voters in Estonia said that they probably would not have voted if the Internet voting channel had not been offered, strongly suggesting that Internet voting is moving people into the electorate who likely would not have voted otherwise.

As would be expected, Internet voters in Estonia use the technology primarily because they find electronic voting easy to use. Although only a small number of voters cast Internet votes overnight—between 11:00 p.m. and 6:00 a.m., a sizable number of voters cast ballots between 6:00 and 8:00 a.m. or between 8:00 and 11:00 p.m. Internet voting can work better for some voters with busy schedules or who will not be around on Election Day, which in Estonia is held on a Sunday. The people who do not vote using the Internet were most likely to state that there was a technological barrier keeping them from doing so. Either the voter did not have an Internet connection, which is more likely to occur in rural areas than in a major city given the prevalence of free wireless Internet in Estonian cities, or they lacked the card reader that voters are required to use to authenticate themselves online. (All Estonians are provided with identification cards that include a digital signature they can use for online transactions. However, using the card for this purpose requires a card reader that can be purchased for less than \$10.)

In his study of the Swiss experience with Internet voting, Alexander Trechsel found that, in its initial uses, Internet voting primarily has a substitution effect; voters who would have voted anyway still vote but do so using the easier Internet technology. In many ways, the impact of Internet voting resembles the impact of expanded early and absentee voting in the United States; these modes too make it easier for traditional voters to participate in the electoral process. Similar studies of Internet voting in the United Kingdom have likewise failed to detect the increased turnout hoped for from the technology. However, there may be benefits to the introduction of this technology that are marginal overall but are still very important. For example, Internet voting was used in the 2007 British elections and was used to enfranchise soldiers serving in Afghanistan. In Estonia, a small but important subset of voters entered the electorate solely because Internet voting was available.¹⁴

In the American context, Internet voting experiments could serve to enfranchise important populations that have long been underserved. Studies have found that serving deployed military personnel and overseas civilian populations through

the by-mail voting process has been difficult, and it is likely difficult for other nations to serve their expatriate and deployed military populations as well.¹⁵ France's experiments with Internet voting have explicitly attempted to serve its expatriate population because of the difficulties they face voting in the traditional voting context.

THE FUTURE OF INTERNET VOTING

The Council of Europe and the Organization for Security and Co-Operation in Europe are both studying Internet voting carefully. The goal of these ongoing studies is to learn how Internet voting can be deployed in a manner that is secure, auditable, and beneficial to all citizens equally. Both of these organizations funded studies of the Estonian election experience in order to help their other respective member states learn from it. These organizations recognize that the Internet and the digital society are the way of the future and that learning how to use this technology appropriately in the electoral context is important. The path for such learning is through experimentation and careful planning that allows the technology to be deployed consistently and repeatedly so that Internet voting is more than a mere curiosity. This experience in Europe has led Finland and Lithuania to explore how they can move to make Internet use a mode of voting in the next four years.

In Estonia, where the system has been used in two major election cycles, voters are now able to make the decision to use the Internet as their preferred mode of voting and continue to use this mode from election to election. Not surprisingly, the repeated use of the technology has reinforced usage among Internet voters but has also drawn traditional early voters or Election Day voters to the new technology. Continued use will allow other groups—including traditionally difficult-to-serve populations, such as the elderly infirm or individuals with disabilities—to learn how to leverage the ease of use and access to the ballot box offered by Internet voting. It also allows the government to learn how they can improve their system to better serve their voting population and to draw more voters into this system.

Today, it is clear that the United States will remain behind the curve in the development of and experimentation with Internet voting. Although there are states and localities that have expressed interest in conducting "one-shot" uses of Internet voting, there has been no concerted effort to study, experiment with, and learn about Internet voting anywhere in the United States. The lack of national interest in truly learning about voting technology can be seen in the repeated failure of the U.S. Congress to appropriate research funds to the Election Assistance Commission for research or to allow for and promote experimentation with voting technologies in national elections. Instead, election reform in the

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