The Road to Online Voting

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The dream of online voting is as old as the Internet itself. The road to achieve that goal has been long, marked by high-profile setbacks and less-noticed but still important progress. It is a path marked with deep skepticism and loud, security-focused critics. It is a journey which we are not close to finishing. Yet, as the late Nelson Mandela is credited with saying, "It always seems impossible until it's done."

More than 35 million Americans have disabilities,[1] which make voting harder, and another 3 million U.S. citizens live abroad.[2] Online voting would dramatically improve their ability to participate in our democracy. Already this year, West Virginia has taken an important step in this direction, opening the same electronic absentee-voting options to disabled voters as those available to members of the military and other citizens residing abroad.[3]

Looking further into the future, online voting could enhance our election system's resilience, helping diminish its current kinetic vulnerabilities. In recent years, for example, Hurricanes Sandy and Michael disrupted elections in 2012 and 2018, respectively. Imagine the havoc of an Election Day power outage in a major city or a coronavirus-like outbreak in the Fall.

The tension between the desire to expand access (and, not incidentally, to save money) while ensuring security is not new. We have seen variations of the same fight play out around every major voting-access reform in recent decades. Consider vote-by-mail, for example. It started as

an early 1980s pilot program in Oregon. After a dozen years, it was used statewide for the first time.[4] Since 2000, the Beaver State has run all of its elections by mail and is now one of four states to do so.[5] Roughly 25 percent of all ballots cast across the U.S. in 2016 were done so by mail.[6] Critics fretted that it would lead to ballot-harvesting or quiet coercion, but decades of experience have turned up vanishingly few, if any, examples of such problems.[7] At the same time, it has saved states money by closing precinct voting locations, while boosting turnout.

Vote centers are another, similar example: Larimer County, Colorado became the first locality to pilot them in 2003, shifting from costly traditional neighborhood-based precincts to locations which voters can choose to use according to their convenience.[8] Sixteen states now allow for the use of voting centers on Election Day, with others using them for early voting.[9] Again the shift saved money while boosting accessibility; and again critics contended that it opened the system to unacceptable risk of fraud because people could center-hop, casting multiple ballots. Technology solved that problem, however. At the precinct level, electronic poll books can notify all locations when someone voted at one. More broadly, the Electronic Registration Information Center, or ERIC, allows the 15 participating states and the District of Columbia to use official data (voter and motor vehicle registrations and Social Security death records, among other things) to keep voter rolls up-to-date.[10] Most recently, Oregon again blazed a new path in expanding voting-access by implementing automatic voting registration in 2016.[11] The reform uses technology to expand and improve the spirit of the 1993 "Motor-Voter" law, which allowed people to register to vote when interacting with Departments of Motor Vehicles. Since then, 16 other states and the District of Columbia have followed suit, generating impressive gains in the number of voters registered.

Many of the criticisms leveled at these advances – about ballot security and fraud concerns – are echoed in the attacks on online voting. These concerns can be legitimate. Indeed, there are four main challenges which must be addressed before using the Internet to cast ballots can become a viable choice. The first is security: Can we rely on the device upon which the voter casts their ballot, the network over which it is transmitted and the security of ballots which may be returned from anywhere in the world? The second challenge involves identity: How can election administrators be assured that the person submitting their ballot is not only a registered voter but actually who they claim to be? The third challenge is usability: If the technology requires training for voters, regardless of their circumstances, it is not likely to be widely adopted. Finally, any system for casting ballots online must be auditable from end to end: Voters must be able to see for themselves that their intent was correctly recorded and that their votes were received and accurately tallied in the final results while retaining the anonymity of the secret ballot. To be clear, however, while these challenges need to be addressed, doing so is an achievable goal, not an insurmountable barrier or grounds for ending the quest for reliable online voting.

Without question, the history of attempts at online voting is strewn with false starts. In 2004, for example, the Pentagon had to pull the plug on a $22 million program designed to let those serving overseas cast their ballots electronically.[12] "We made this decision in view of the

inability to ensure the legitimacy of votes, thereby bringing into doubt the integrity of the election results," a DOD spokeswoman explained at the time. The District of Columbia attempted an Internet-voting trial in 2010 only to terminate it when University of Michigan hackers penetrated the server,[13] causing it to play the school's fight song when ballots were cast.[14]

To dismiss the entire effort to expand vote-accessibility through secure and reliable online voting would be short-sighted, however, and would miss current and future technological developments which could directly address the challenges facing online voting.

Take smartphones: Between biometric authentication (fingerprint scanners and facial recognition) and hi-res cameras capable of verifying credentials like driver's licenses or passports, these devices have made substantial leaps forward in the process of voter-verification. The prevalence of smartphones (81 percent of American adults have them, according to Pew[15]) and the competitive nature of the market for them also helps. Apple and Google try to outdo each other by making their phones easier to use, more accessible, more secure and with their ability to push updates worldwide, can make elections more resilient to unanticipated events. Advances in blockchain technology permit secure and immutable recording of votes on multiple, geographically-distributed servers which verify the authenticity of the votes cast. Developments in cloud computing permit election officials to access advanced, up-to-date technology without having to invest time, staff and capital to maintain an online voting infrastructure and keep it current – a problem that they face with their current, episodically-used, voting equipment.

These technological advances are not currently in widespread use for voting – and they do not, in and of themselves, clear the way toward widespread online voting. But they do illuminate a path forward. It should be navigated with care but it should be trod.

How? First, a critical step – the right mix of skills and knowledge must be assembled. Any team in the online-voting field needs practical, hands-on experience in large-scale software development, quality assurance, computer security and IT operations. The team must also possess proficiency with federal, state and local election laws and voting systems regulations and certification requirements, among other things.

A second step is also crucial. Responsible election officials must be willing to conduct carefully controlled pilots of credible technologies and provide ongoing feedback in the service of continuous improvement. As mentioned above, this is how virtually all election innovations have been developed and, ultimately, fielded on a wide scale. Why? Simply put, live elections cannot be simulated in a laboratory.

The road to online voting should and needs be a deliberate process. The stakes are too high to rush down this path. But to refuse to move forward at all, to advocate that responsible pilots should be stopped, would be to deliberately keep the obstacles in place that prevent millions of Americans from fully participating in our democracy.

Endnotes:

[1] "How Voters With Disabilities Are Blocked From the Ballot Box," by Matt Vasilogambros, Pew's Stateline, February 1, 2018

[2] "DoD Releases Biennial Study of U.S. Voters Abroad," Federal Voting Assistance Program, September 12, 2018

[3] "Justice signs first bills of 2020 session," by Steven Allen Adams, The Weirton Daily Times, February 6, 2020

[4] "Oregon Vote-by-Mail," Oregon Secretary of State, Elections Division

[5] "All-Mail Elections (aka Vote-By-Mail)," National Conference of State Legislatures, October 24, 2019

[6] "The simple voting reform that works wherever it's tried," by David Roberts, Vox, May 24, 2018

[7] *Ibid.*

[8] "Use of Vote Centers on the Rise Nationwide," Pew, January 15, 2015

[9] Vote Centers fact-sheet, National Conference of States Legislatures

[10] "Election Registration Information Center," Pew website

[11] "Automatic Voter Registration," National Conference of State Legislatures, April 22, 2019

[12] "THE 2004 CAMPAIGN: VOTING; Online Ballots Canceled for Americans Overseas," by John Schwartz, The New York Times, February 6, 2004

[13] "D.C. vote-hackers publish their vote-hacking exploits," by Mike DeBonis, The Washington Post, March 6, 2012

[14] "Hacker infiltration ends D.C. online voting trial," by Mike DeBonis, The Washington Post, October 4, 2010

[15] "Mobile Fact Sheet," Pew Research Center, June 12, 2019