Voting Technology and the Law: From Chads to Fads and Somewhere in Between

Elizabeth M. Yang and Kristi Gaines

From the time we are born, we learn that there are rules and laws that govern our behavior. We learn that the crosswalk in front of the school is a safe place to walk and that cars are supposed to stop for children walking to school. As we begin to drive, we learn a whole new set of laws, ranging from how fast we can drive and when we can drive, to what kind of vehicles we can drive. Laws govern all aspects of our lives and are created to protect our rights of personal safety and liberty.

There are a myriad of laws governing our electoral process, ranging from voter registration, to campaign finance, to voting, and advertisements. A wealth of case law, statutory language, and administrative regulations cover these portions of the electoral process. The topic of voting technology and the law is not as cohesive because states are given some leeway in determining the manner in which they would like to conduct their elections. For instance, federal laws do not mandate the usage of any one piece of voting machinery. Instead, uniform guidelines are used to ensure a minimum standard to which states must adhere. States also vary as to the time and method of the election. Some states, such as Arizona and Texas, allow early voting, and Oregon now conducts its elections via mail-in ballots. Other states are experimenting on a small scale with internet voting. As in any instance involving technology, often there is a lag in the law, due to the uncertainty or instability of a product or process.

We live in an age where the internet has placed the world at our fingertips. We can literally plan entire vacations without leaving our homes, from airfare, to hotel, to rental car, to clothing, and guidebooks. We even take classes via the internet. We use automated teller machines to get cash. We do all of this because we believe the system we are using is secure. So why can’t we vote in a similar manner? Shouldn’t our voting technology match the technology we use to carry out our daily activities? A closer look at the current laws for voting and a brief history of the evolution of voting technology will hopefully serve as a solid starting point for discussion of the issue.

The Law and Voting

Voting is an integral part of American citizenship. It is a fundamental right and privilege of democracy. Over 200 years ago, when this country was first founded, a very limited part of the population was allowed to cast a ballot. Now, nearly all citizens over the age of eighteen are entitled to vote. The law has played, and continues to play, a great role in the evolution of voting. Laws determine who is eligible to vote, what procedures must be completed in order to vote, and finally which methods of voting machinery can be used.

Voting Rights

The Constitution originally bestowed the right to vote only on white males who either owned property or paid poll taxes. In the aftermath of the Civil War and the abolition of slavery, the Fifteenth Amendment eliminated racial barriers to voting. The women’s suffrage movement and the onset of World War I led to the Nineteenth Amendment, which granted women the right to vote. The civil rights movement of the 1960s also addressed historic obstacles to voting. In 1964, the Twenty-Fourth Amendment abolished the use of poll taxes. The Voting Rights Act of 1965 repealed historic requirements, such as literacy tests, that had been used to discourage voting. The Vietnam War served as the catalyst for the most recent extension of voting rights. In 1971, the Twenty-Sixth Amendment granted the right to vote to citizens eighteen years and older. Advances and events in American history, beginning with the Revolutionary War, helped expand the right to vote to include, today, almost all adults over the age of eighteen. And just as changes in our lives and society have changed the laws governing who can vote, so too have they influenced the laws governing how we vote.

Voting Procedures

The Constitution gives states the power to prescribe the “time, places and manner” of holding elections for members of Congress, although Congress may make or alter such laws as well. As a result, states have differing requirements regarding voter registration, voter identification, polling location and times, and other electoral matters. The ability of Congress to impact the rules governing federal elections can most easily be seen in the aftermath of the highly contested 2000 presidential election which resulted in the Help America Vote Act (“HAVA”) being enacted into law in October 2002. Confusion over ballot design, use of voting machinery, voter registration rolls and
post-election procedures necessitated the creation of certain uniform guidelines for voting systems, beginning in 2002.

In general, the process of voting encompasses several common steps. First, an individual must be registered to vote. In a few states, an individual may register to vote on the same day as the election. However, in most states, registration is required anytime from ten to thirty days before the election. Today, individuals may register online or at the same time as applying for a driver’s license. The registered voter must then appear to vote at an assigned polling place and present appropriate identification, depending on the state. The voter may then cast a ballot.

What happens if a voter has registered and met all the requirements, yet his or her name doesn’t appear on the registration list at the polling place or the information is incorrect? HAVA now requires that individuals be allowed to cast a provisional ballot. Election officials keep provisional ballots segregated and only count them in the final vote count if the voter’s registration is subsequently verified. In this way, an individual is not deprived of his right to cast a vote if an administrative or record-keeping error has been made.

Among other things, HAVA established many new requirements for voting procedures, such as computerized statewide voter registration databases and posting of voter information at each polling place.

Voting Machinery

Laws related to the right to vote and voting procedures are more comprehensive than those relating to voting machinery, primarily due to a lack of uniformity of voting. The new requirements of HAVA have had an impact on the selection of voting systems. In the 2004 elections, it is estimated that optical scan voting will rise to a little over 55.5 million (32.20 percent) and electronic voting will also rise to 30 million (28.94 percent).4

As these statistics illustrate, to date, there is no single preferred method of voting. A lack of uniformity within states and jurisdictions has led to the law governing these mechanisms to be non-uniform as well. HAVA thus focuses on defining standards that all the different voting systems must meet. Under HAVA, voting systems used in federal elections must 1) permit voters to verify ballot choices, notify of overvotes or undervotes, and allow the ability to correct the ballot, 2) provide for a manual audit, 4) have accessible voting for the disabled, 4) meet federal language accessibility requirements, and 5) meet Federal Election Commission “error rate” standards. In addition, each state must develop a uniform definition of what constitutes a vote and what will be counted as a vote. HAVA requires all states to be compliant by January 1, 2006. The law in this area is still changing as states and localities try to adapt to the new requirements of HAVA, which were enacted to protect the integrity of the electoral process.

Evolution of Voting Technology

The administration of federal elections is conducted at two non-federal levels. State law governs the procedure and the localities are charged with the actual implementation of the process. This diversity of administration has led to an equally broad range of voting equipment. Obviously, budgetary constraints impact the selection of voting machinery. But there are other considerations as well. Some jurisdictions derive a sense of pride and tradition by voting in the same historic manner, while others want the newest and “best” technology. Whatever the voting system, there are always pros and cons that must be considered. How reliable is the vote counting process—manual versus electronic? How secure is the process? What is the audit capability—paper trail versus electronic memory? The answers to these questions along with the necessary legal considerations provide a useful backdrop to the evolution of voting machinery and the reasons for its varied usage.

Paper Ballots

The mechanisms by which people have voted have developed throughout history, from the placement of small balls or marbles into specified containers in ancient Greece to the verbal expression of votes in early America. Paper ballots became common in the mid-nineteenth century. At that time, voters would write in candidates’ names on a piece of paper or they would use a pre-printed ticket from a political party on which they could simply sign their name. They would then manually deposit the ballot into the ballot box.
These methods had significant problems, such as difficulties in counting the votes because of illegible writing, not allowing the voter to choose candidates outside a certain party, creating opportunities for the “stuffing” of ballot boxes, and preventing anonymity for voters. These problems led to a movement toward government-printed standardized ballots in the late 1800s. While this alleviated some of the problems, scandals over improper vote counting and the labor-intensive counting process eventually led to the abandonment of paper ballots in most states. In the 2004 general election, less than 1 percent of registered voters will cast their vote by paper ballots.

**Lever Machines**

An early precursor to electronic voting, lever machines require a voter to pull selected levers assigned to candidates to indicate their choice. As the voter leaves the booth, the vote is recorded when the levers return to their original position and, as they do, an internal counter in the machine is advanced forward to record the vote. At the close of the polls, the number of votes cast for each candidate is indicated by the position of each counter on the machine. Because lever machines do not produce a record of each individual vote, a vote-by-vote recount is impossible. They are also vulnerable to mechanical breakdowns and tampering. For these reasons, among others, lever machines are no longer manufactured and are in the process of being phased out as voting mechanisms in the United States. About 12 percent of voters will use lever machines in the 2004 elections.

**Punch Cards**

Punch card voting mechanisms garnered national attention in the aftermath of the 2000 presidential election. In this process, a voter inserts a computer punch card into the machine under a ballot label. The voter then uses a stylus to “punch” through the space assigned for each candidate or issue, removing a rectangular shape from the computer card known as a chad. A computerized tabulating device counts each resulting hole in the punch card as a vote. While punch card machines increased the speed of vote counting and afforded the opportunity for recounts, the problems experienced in several Florida precincts during the 2000 elections demonstrated that it, too, suffered from significant problems. The most common issue occurred when a voter apparently didn’t “punch” the card cleanly enough, leaving merely an impression on the card or not completely severing the chad from the card. The question to be resolved then is, what is sufficient to indicate the voter’s intent? If the chad is hanging by one corner? By two corners? The resulting legal challenges and national confusion created by punch card voting in the 2000 election led Congress to encourage states to update voting technologies and phase-out punch card machines by 2006. Approximately 18 percent of voters will use punch card machines in the 2004 elections.

**Optical Scan Voting**

Optical scan voting or “marksense” systems tabulate votes based on the darkest mark detected on a ballot. This system utilizes a paper ballot that requires voters to make a mark by filling in an oval, rectangle, or circle next to a candidate’s name or issue, or completing an arrow connected to the candidate or issue of choice. The system is based on “dark mark logic,” where the computer selects the darkest mark associated with the candidates or issues and records it as a vote. The system is most easily compared with standardized tests, such as the SAT, where an individual’s vote is the result of “filling in the correct oval with your number two pencil.” The ballot cards are deposited into ballot boxes or fed by the voter into the tabulation machine. The benefit of this system is that there is a direct paper trail in the event of an audit. The speed of optical scan vote counting and the ability for recounts have been compared with punch card voting, without the problems associated with chads. This system is not without fault, however. There are problems if the computer cannot detect a mark because it is not dark or big enough, if voters make incorrect marks, or if voters change their minds and there are multiple marks on the ballot. As in punch card voting, these situations will result in a manual and subjective determination of the intent of the voter, if possible.

**Electronic Voting**

Electronic voting or direct recording electronic (“DRE”) technology is the high tech version of the lever machine. There is no paper ballot to be marked; instead, a voter makes the selection by pushing a button or touching a screen and the vote is recorded directly to the memory device of the voting machine. DREs were touted after the 2000 elections and the infamous hanging chads fiasco as a mechanism that could alleviate voter error in marking ballots and confusion about the intent of the voter. The ballots for DREs are either displayed as a very large printed ballot or on a computer screen that allows voters to see and verify their selections before submitting the ballot. DREs can also tabulate votes quickly and more accurately than a manual count. From this perspective the DRE is the perfect way to cast a vote, as the software eliminates the possibility for human error that has plagued previous forms of voting. But the same aspect of DREs that allows precision in voting and tabulation also illustrates the potential of its greatest weakness—the ability to reconcile or detect errors in the machinery. How do we know if votes are being recorded properly? Without a paper ballot, how do we perform an audit if there is no ballot? Concerns have been raised about the current structural weakness of the DRE, primarily due to the perceived fallibility of machines, either through error or human tampering, and a lack of a paper trail.

**Internet Voting**

Another form of casting ballots on the higher end of the technology spectrum is internet voting. This system allows voters to vote from any computer with internet access, either at a public polling place or at some other location. The internet has become a large part of our lives. We conduct all matters of business from a single connection to the internet without a second thought. The internet has also changed the world of politics and policy. Candidates, political parties, and independent issue groups use the internet to disseminate
information and solicit contributions. So why can’t we vote online?

In 2000, the Arizona Democratic party conducted the first legally binding primary over the internet. Arizona did not continue internet voting after the 2000 primary; the decision, however, was not based on fears of fraud, but rather issues with the company hired to conduct the election. Proponents of online voting believe that voter participation will increase if it is easier for people to vote. This statement is probably true, but it also leads to another reason against the instant embrace of internet voting—the “digital divide.” From an income, education, and disability perspective, access to and the skills needed to use the internet are not easily available to all segments of the population. Our laws require that methods of voting be as easily accessible from one voter to another. In 2004, the Department of Defense developed a pilot program for internet voting for troops stationed abroad, but then cancelled the initiative due to concerns of hacking by terrorists or others. As with DREs, the potential for human tampering is a major factor in the consideration of internet voting. Equally important is that the system must be accessible to all segments of our population.

HAVA and Voting Technology

The passage of HAVA was intended to encourage states to upgrade voting machinery and to develop new federal voting system standards in an effort to instill public confidence in the integrity of computer-based voting systems. However, the passage of HAVA has not resolved all of the issues surrounding voting technology. For instance, under HAVA, by January 1, 2006, states must have in place voting systems that produce a “permanent paper record with a manual audit capacity.”

There is some disagreement over how this provision should be interpreted. One interpretation allows for electronic voting machines to only produce a final print report of all votes recorded after the polls are closed. This interpretation does not require a separate hard copy record that can be verified by the voter at the time the ballot is cast. In this case, many argue that while the voter may be able to verify what is on the screen, there is no way to ensure that a machine correctly recorded the information on the actual paper record. For this reason, many are calling for a change in federal law to specifically require each voting machine to produce a voter-verified paper trail. Several states have already enacted their own laws to provide for this type of system. These systems would allow the voter to cast votes using an electronic screen or board. The machine would then produce a slip of paper that allows the voter to confirm immediately that her or his choices were correctly recorded. The “receipt” is then kept at the polling location as the permanent record of the vote. In a recount situation, the number of votes recorded by the electronic machine could then be compared to the votes on the paper records. Some have pointed out that this type of system creates other opportunities for technical errors—issues with individual printers for each voting machine for example—and will cause increases in waiting times at polling places as voters take more time to peruse the paper receipt.

Issues regarding manual audit capabilities also arise with technologies that are not direct recording electronic methods, such as lever machines and internet voting. Under HAVA, lever machines may no longer be used in federal elections as of January 1, 2006. Internet voting, however, is still in the process of development and audit capabilities are still a subject of ongoing debate and study.

Potential Issues for 2004

HAVA has begun a long process for election reform in the United States, beginning with the creation of the Election Assistance Commission (“EAC”), which is charged with helping states comply with the requirements of HAVA. The EAC was confirmed in December 2003, ten months later than originally scheduled. Initial changes to our systems of election administration began in December 2002 and will continue until January 2007. This is very much a work still in progress; as new systems are implemented, there still exists a potential for problems that must be resolved. For example, in the current 2004 election cycle, states are still tweaking their systems following the primary races held in early 2004.

The following list identifies some potential issues that might occur during the November 2004 election. This list is not meant to be definitive, but seeks to identify issues which have begun to raise concern on the part of some reformers.

- The success of new statewide voter registration databases

HAVA mandated the creation of statewide voter registration databases as a
Teaching Activities

James H. Landman

1 Ask your students to read the comparison of different forms of voting technology from the “Evolution of Voting Technology” section of this article. Then ask students to find out what type of voting technology is used in your community. Good sources for local voting information are your state’s secretary of state office, as well as your county or municipal government. What are the benefits of the voting technology used in your community? What are the drawbacks? Do students think their community should adopt a new voting technology?

2 One of the newest forms of voting technology, direct recording electronic (DRE) voting, has provoked controversy. A good introduction to the controversy is the Century Foundation’s Issue Brief, “Understanding the Debate over Electronic Voting Machines” (available online at www.tcf.org/publications/electionreform/VotingMachine.pdf).

Have your class read through the Issue Brief, then divide them into small groups of four to six students. Ask each small group to list the pros and cons of DRE voting. Half of the small groups should then identify what they think are the three strongest arguments for DRE voting, while the other half should identify what they think are the strongest arguments against DRE voting. Each group should be prepared to defend their choice of arguments.

Have each group appoint a representative. Ask the representative of each group in favor of DRE voting to present the group’s arguments to the class, then ask representatives of the groups against DRE voting to do the same. Conclude the activity by asking the class to vote on whether they think the benefits of DRE voting outweigh the drawbacks.

3 Tell your students to imagine that they have been asked to advise the governor of the state on a new proposal to permit internet voting in the state. Among the issues the governor wants your students to address are:

- Can a system of internet voting be developed that conforms to the requirements of the Help America Vote Act of 2002 (HAVA)?
- Are there any security risks associated with internet voting? If so, how might these be addressed?
- Do you think there are any drawbacks to allowing people to vote from their home instead of coming to a community polling place to cast their votes?
- Are there any other issues the governor and state legislature should be aware of when considering internet voting?


Divide the students into working groups of eight to ten students each. Within each group, two to three students should be assigned to focus on each of the questions posed by the governor. After researching their question, students should share and discuss their findings with other members of the group. The group as a whole should then prepare a final report to the governor that addresses each of the four questions posed and offers a final recommendation on whether the state should pursue internet voting at this time. Finally, the groups should present their reports and recommendations to the class.

4 Discuss with your students opportunities for them to get involved with the 2004 elections. Possibilities include:

- Serving as an election official at a local polling place. More than thirty states allow young people under the age of eighteen to serve as election workers. A listing of those states and additional information is provided by the National Association of Secretaries of State on its “New Millennium Young Voters Project” website, www.stateofthevote.org.
- Working on a voter registration initiative in your community. A number of organizations actively seek the participation of young people in voter registration drives. For more information, see the “Young Voting Initiatives” websites listed in the Resources section of this article.
- Setting up a mock election at your school. Even if your students are not old enough to vote officially, a mock election enables them to learn about the election process firsthand. For more information, visit the National Student/Parent Mock Election website at www.nationalmockelection.org.

James H. Landman is associate director of the ABA Division for Public Education in Chicago, Illinois.
means of providing a uniform list that is maintained at the state level. A majority of states concerned about the availability of federal funding and the delay of the creation of the EAC have applied for a waiver from compliance until January 1, 2006. Databases have traditionally been kept by localities, so depending on the size of the state, integrating all of the information may be a daunting task.

- **The ability of voters to understand and use newer voting technology**
  One of the main elements of HAVA is the availability of funding for localities that utilize punch card and lever voting mechanisms to purchase alternate machinery that complies with the national voting system standards. Localities that have used less technical systems of voting may now be faced with machinery at the opposite end of the technology spectrum, such as machines that resemble automated teller machines, where all of the choices appear on one or several screens and voting is accomplished by touching a button on the screen. There are fears that such a radical change in voting may be confusing and intimidating to some voters, in spite of voter education programs and clearly posted instructions.

- **The ability of voters to use provisional ballots**
  One of the main issues regarding the administration of the 2000 election was that voters who believed they were properly registered, but whose names could not be found on the election rolls, were categorically denied the right to vote. HAVA created the concept of the provisional ballot, but left a large amount of latitude to the states in the implementation of the system. The 2004 election will mark the first time that many voters will be allowed to vote provisionally, so it remains an as yet untested area of the law for several states and localities.

- **Manual audits**
  The requirement of manual audit capability for direct recording electronic technologies is not specifically defined by HAVA. In theory, the ability of a DRE to record each individual action is sufficient for audit purposes according to HAVA. Most machines do not currently create a physical paper record of each vote cast. Instead, the computer keeps a record of actions taken by the machine that is stored on the memory disk of the voting machinery, which can be printed for purposes of an audit. Some question whether a paper trail is feasible or necessary if the computer keeps a record of activity of the machine. Others counter that machines are fallible and a paper trail is a necessary requirement for audit purposes. Unfortunately, it will likely take at least one election cycle to determine whether or not it is necessary for a voter-verified paper trail or if a paper record of each action of a machine will be sufficient for audit purposes.

- **The success of development of uniform guidelines of counting votes**
  Recounts during the 2000 election cycle garnered much national attention. Canvassing boards, entities charged with administering recounts, were responsible for determining the intent of the voter if a machine could not
detect a vote. This led to the hanging chad dilemma, discussed above, and others which essentially created subjective instead of objective criteria for determining the intent of the voter. HAVA created a requirement that all states develop uniform guidelines for counting votes as a means of creating a more objective environment that can be applied across localities. States have until January 1, 2006 to comply with this requirement so it is possible that some members of local canvassing boards will again find themselves without objective criteria in evaluating the intent of the voter.

Conclusion
Our democratic society is based on the integrity of our electoral process. The success of our system of elections is based on three very important premises: the secrecy of the ballot, safeguards against fraud, and safeguards against voter intimidation. Although in our daily lives we use all kinds of technology, our electoral process is not the best place in which to experiment. When mistakes are made in our use of other technologies there are relatively easy remedies. We can return defective merchandise. We can cancel accounts and create new ones. Canceling an election is not an acceptable solution. The price is simply too high. No type of voting mechanism is perfect, each has vulnerabilities that may be due to mechanical failure or human error. The law and legal challenges to elections play an important part in ensuring integrity of systems and instilling confidence in the public that elections are conducted in the fairest and most effective means available.

Notes

Elizabeth M Yang serves as director for the ABA Standing Committee on Election Law and associate director for the Division for Public Services. Kristi Gaines serves as legislative counsel for the ABA Governmental Affairs Office.