The Prospects of I-voting in America

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(Abstract)

The prospects for the future of voting in the United States include the likelihood of internet voting and its potential to alter voter participation. This thesis provides a critical overview of past experiments, current studies, and the possible consequences of implementing voting over the internet. As internet use increases for education, personal communication, business and commerce, the assumption is that the public and elected officials will view the internet as the practical venue for local, state, and national elections. The potential consequences of utilizing the internet for voters to cast their ballots from personal computers from remote locations, as one future process of voting, are vital to the decisions regarding electronic elections. Challenges inherent to the technology and social consequences concerning internet voting are paramount to the debate. The internet voting process, perceived as convenient with the possible consequence of halting or reversing a declining voter turnout, must be balanced with potential risks to internet voting security and reliability.

With emphasis on reports from the California Task Force and the National Science Foundation, as well as current literature regarding electronic voting, research is cited designed to address the issue of internet voting. The history of the United States to enfranchise more of its citizens and eliminate barriers that have kept voters from the polls is discussed in the context that there has been a national objective in extending the right to vote and making the ballot box accessible to all adults. Implementing a voting process that has the potential to give more voters access to elections can be viewed as a natural extension of that American legacy, and is therefore important to research and develop.
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Introduction and Purpose

This current investigation examines the feasibility and readiness of the United States’ evolution toward the use of computerized, online voting, hereafter referred to as internet voting or “i-voting”. I-voting will be evaluated in terms of its effects and its implications for the future of the American political and election processes.

This study first discusses historical practices that inhibited voting. Research is then provided on the expansion of USA voting rights. These two historical perspectives help display this country’s agenda and constant struggle to extend enfranchisement to its citizens. Similarly, this national goal to increase voter participation is reviewed in the context that today this country is facing a continual decline in voter turnout. In order to reverse this trend, is the future of voting in America one of implementing the convenience and excitement of i-voting, a process that could increase the likelihood of an electorate willing to exercise its right to vote? Could this not-too-distant election future halt a trend of declining voter turnout? If this nation implements i-voting, what are the consequences of such a monumental structural and technological change?

I-voting has its pilot attempts, most notably the Arizona Democratic primary in the spring of 2000. The literature reveals that the Arizona experiment, limited in scope, was arguably a technological and social success. Other USA elections as well as campaigns in other countries have also experimented with i-voting, providing some examples for judging their respective successes or failures. More i-voting attempts are scheduled for future elections. These experiments should be evaluated on a case-by case
basis. Their success and failures may indicate i-voting’s national potential, and spur necessary debate as to the future role of i-voting. With each new successful trial, the future of i-voting gains momentum. As the public is made aware of the concept of voting from home or work, i-voting becomes more attractive and public and political pressures increase on legislators to implement i-voting. It is vital that research and development of i-voting technology and social concerns continue to be deployed so that officials will have a clear understanding of the convenience and effectiveness of i-voting. Simultaneously, officials must be aware of the potential hazards of moving the nation into internet accessible voting.

If the technological and social challenges are to be overcome, i-voting has the potential to enhance what this country has attempted to achieve systematically throughout its history: an all-encompassing and accessible process of casting ballots that is available for the entire electorate. It is possible that the excitement and convenience of voting from one’s home, place of employment, or even a sidewalk café, could revitalize the American election system. The research here outlines the United States’ struggle to enfranchise voters. Legislation designed to eliminate barriers to voting is cited. This analysis is important when viewed as a continual struggle to foster increased voting participation by allowing an ever-increasing number of citizens access to the ballot box. This result also lends itself to studying i-voting as a potential cure for a non-voting electorate. As legal barriers for most all voters have been systematically eliminated, the conclusion is that it is not only inherently just for all to be able to participate in the democratic process, but also vital to the success of this democratic nation. This has been,
and continues to be, a national priority and a national objective, which i-voting has the potential to address. Many are embracing i-voting, while others remain skeptical.

Nationally, many concerns have been generated by the statistics cited in this study which indicate consistent voter participation decline since 1960. Recent elections resulted in turnout percentages where more eligible American voters have selected not to vote rather than those who have elected to cast ballots. If this trend continues, an ever-increasing minority of voters will elect government representatives for the majority, truly an ideal not grounded in the modern American philosophy of governing. With this in mind, this study relies on the popular belief that a greater number of participants on Election Day is important and desirable. It will be shown that increased voter participation has been a legislative and social concern in this country, popularly labeled the “get out the vote” campaigns.

This study will reevaluate the implications of evolving to i-voting. I-voting has the ability to generate renewed voter participation. The importance of increasing voter participation and its implications for this country’s political future are at the heart of the debate. Should the implementation of i-voting increase voter participation, and there are many indications that it will, is that essential to a stronger and better America? Despite a legacy of national attempts to increase enfranchisement, there are reasons why increasingly fewer voters have participated. If i-voting does increase participation, or at least slow the downward trend, what will be the costs? Each historical voting procedural change in this country involved ramifications for the electors and the elected. I-voting will need to be evaluated with this perspective, as a process that can result in a stronger electorate in terms of turnout; but, it also must be evaluated as consequential, possibly
even harmful, to the future of American politics and elections. Enhancing convenience and access can be viewed as a worthy goal. At the same time, there are other questions to be solved, most notably equality of access, ballot security and secrecy, and costs. There are trade-offs when making decisions about i-voting, and the decisions will need to accommodate both i-voting’s worthiness and its problems. Ultimately, the question remains, should America, as it becomes more cyber-dependent, move voting into this venue?

This study also reviews past and current federal legislation and appropriation vital to the evolution of this country’s voting processes. In turn, a future of more federal government involvement to universalize aspects of voting is examined and studied. The debate over federalism and the extent to which states will be required to relinquish jurisdiction and power to the federal government due to federal legislation and appropriation is reviewed. As more voting requirements have been federally mandated, debate has surfaced about such issues as national ballots and national registration procedures. States may balk at nationally-mandated i-voting, especially voting for state and local elections.

Based on the history of American elections and current developments in i-voting procedures, a potential future i-voting election will be suggested in this study’s final chapter. A future election scenario and an i-voting process are offered. It will be argued that the technological and social challenges appear to be solvable and that an i-voting system offers benefits that make its gradual implementation desirable. This study will conclude that i-voting has the potential to replace a dwindling electorate with an increasingly participatory bloc of voters. Even at the risk of potential hazards, evolving
to i-voting is the preferred course of action. This study recommends that the future of American elections is a future that incorporates i-voting.
Chapter One: The American Enfranchisement Experience

Once a people begins to interfere with the voting qualification, one can be sure that sooner or later it will abolish it altogether. That is one of the most invariable rules of social behavior. The further the limit of voting rights is extended, the stronger is the need felt to spread them still wider; for after each new concession the forces of democracy are strengthened and its demands increase with its augmented power. The ambition of those left below the qualifying limit increases in proportion to the number of those above it. Finally, the exception becomes the rule; concessions follow one another without interruption, and there is no halting place until universal suffrage has been attained.

From Alexis de Tocqueville’s *Democracy in America*, pp. 52-53

De Tocqueville’s words seem to forecast the American experience of enfranchisement. At our nation’s founding, access to the vote was severely restricted. The chronicled history of voting in the United States is one of a struggle for increased voting access, truly an American legacy. The limitations of the now-infamous “white male land-owners” voting qualifications that were prevalent in a majority of the 13 original states determined widely-accepted voter turnout percentages that ranged in the low single-digits in this country’s earliest elections. The words of de Toqueville’s predicted progression of increased enfranchisement are reminiscent of an unfolding legacy, initiated soon after nationhood and continued throughout the next two centuries. The intended outcomes of increasing voter eligibility and access are not without their unintended consequences. The right to vote has been extended to all citizens. Yet, voting was not always accessible or utilized by enfranchised eligible voters. However, this country’s history of civil rights progress depicts efforts to allow all citizens the right to vote and to offer the best possible chances to participate.
Changes in the early nineteenth century gave propertyless white men the chance to take part in elections. As an aftermath of the Civil War, African American males were granted the right to vote by the Fifteenth Amendment to the Constitution. United States female suffrage became universal with the passage of the Nineteenth Amendment in 1920. The Voting Rights Act of 1965 was designed to remove obstacles that had continued to inhibit and disenfranchise “undesirables”, primarily African American voters. And, largely as an appeasement to many of the soldiers who died as disenfranchised eighteen through twenty year old draftees of the Vietnam War, the Twenty-Sixth Amendment gave universal suffrage to all eligible Americans who had reached their eighteenth birthday.

Today, nearly 205 million American adults are eligible to vote. This large number is a direct result of years of struggles for suffrage, modifications of voter eligibility, and elimination of restrictions generally imposed by state laws. Over the years, elimination of property, race, and gender exclusions, as well as tax, literacy, and social requirements, have been realized. As Harvard historian and political scientist William B. Munro stated in 1928, “One (voting) limitation after another has been swept away by constitutional amendments and laws—religious texts, property qualifications, race discriminations, and finally exclusions on grounds of sex” (Munro 1928, 147-48). For the advance of American democracy, this is an important progression of events.

While drafting the Constitution in Philadelphia in 1787, the authors left no doubt they had competing interests when it came to the power and ability of the people to elect their representatives. They were seemingly willing to attempt a system wherein “the people” would have some empowerment. Ultimately, trust of the “American voter” was
not a dominant feature of the US Constitution that was ratified a few years later. The only directly-elected members of this new national government were to be the members of the House of Representatives. Senators were to be sent to Congress by state provision, most states commonly adopting the process of appointment by their state legislatures. This process of selecting Senators expired by passage of the Seventeenth Amendment in 1913. It provided for the direct election of all USA Senators. This, as well, is another example of the evolving, re-occurring theme to develop a democracy that empowers the people by allowing them to elect those who would govern them.

The president and vice president were to be formally elected by electors from each state. This system know as the Electoral College was primarily a “filter”, a safeguard designed to allow the more “politically-aware” electors to overturn the popular vote, should the people make mistakes in their decisions every four years when casting votes for these two most prominent offices of the national government. This system, too, has been altered so that states have requirements that bind electors to candidates. Through a winner-take-all system in forty-eight of the fifty states plus the District of Columbia, based on each state’s popular vote, electors are entrusted to vote for the candidates they were selected to represent, not simply as they personally would vote. The other two states, Maine and Nebraska, may actually give more credence to their popular vote by potentially dividing their electoral votes for presidential and vice presidential candidates, a process potentially more representative of the popular vote. The progress made in the process of binding electors to the popular vote is another example of movement toward increased popular sovereignty. Despite this progress, the presidential election of 2000 highlights for the fourth time in this country’s history how
the Electoral College process reverses the people’s choice by “majority rule” (or more concisely, plurality rule), with the Electoral College election of a president who failed to be voted for by a plurality of voters. This election prompted many to call for the abolitionment of, or at least a major revision of, our Electoral College system toward a more polity-responsive process. Should any proposed change occur, it could be viewed as another step toward altering our election processes to empower the voters and making their balloting selections the primary focus.

The struggle for increased American suffrage has been no easy task. In 1789, it is presumed that not one in fifteen adult white males could vote in various states. Ben Franklin criticized this situation by saying “a man’s only property might be a jackass. If a man’s jackass dies, he should then lose the right to vote. In whom is the right of suffrage, in the man or in the jackass” (Smith 2000, 148)? Originally, states had the right to establish all suffrage requirements. As Franklin was alluding to, ten of the thirteen original states established property requirements. Maryland’s state Constitution, passed in 1776, extended voting rights to persons with a “freehold of 50 acres or property value above 30 pounds”. In Massachusetts, voting required a “freehold estate with annual income of 3 pounds . . . (and the) property must be owned in the same town as residence to vote for House”. Virginia required a “freehold . . . in at least 50 acres of land, if no settlement be made upon it, or 25 acres with a plantation and house thereon, at least 12 feet square . . .” (Keyssar 2000, 330-5).

State property requirements systematically diminished and eventually vanished. From 1800 through 1855 the number of states in the union increased from thirteen to thirty-one. During this same period, the number of states with property requirements
declined from the original ten to three, or from approximately 75% to 10%. These three remaining states were virtually propertyless. New York’s property requirement by 1855 only applied to, and was designed to restrict, African Americans. Rhode Island’s property requirements only applied to non-native born Rhode Islanders. South Carolina offered a residency alternative that was designed to allow the most desirous of propertyless voters the opportunity. By the mid-nineteenth century, all white adult male citizens had essentially been enfranchised with the elimination of property restrictions imposed by the states (Keyssar 2000).

The chronology for states to legislate voting qualifications based on race initially developed in the USA in an oppressive direction. In 1790 only three of the thirteen states implemented race exclusions (these states were Georgia, South Carolina, and Virginia). By 1820 the number had grown to fourteen of twenty-three states, and by 1855 to twenty-five of thirty-one states. This number of states does not include the aforementioned New York property requirement for “men of color” (Keyssar 2000).

With the passage of the Fifteenth Amendment in 1870 allowing black males the right to vote, states increasingly created suffrage rules and regulations that were designed to create roadblocks for voters of diverse ethnic backgrounds. Residency requirements, poll taxes, literacy tests, and immigrant exclusions, continued to dissuade or forbid male non-white voters from the right to vote. Many of these blatant exclusionary state voting laws were written and passed specific to ethnicity. For example, Native-Americans were prohibited from casting ballots by laws passed in nineteen states. Many of these states’ laws read much like Idaho’s 1889 Constitutional provision, which became effective in 1890 when Idaho was granted statehood. It stated, “(the right to vote) excludes Indians
not taxed, who have not severed their tribal relations and adopted the habits of
civilization” (Keyssar 2000, 385).

More barriers to unimpeded voting were implemented mainly in the southern
states, but also gained support outside the south. The practice to restrict and prohibit
non-white suffrage rights actually grew in this country from the end of the civil war until
the mid-twentieth century. In 1883, Texas passed the charge of a $1.00 poll tax,
commonly followed by other southern states like Alabama, Arkansas, Florida, Georgia,
Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, and Virginia. The
belief is that these poll taxes, aimed at the indigent population, were designed primarily
for the high percentage of poor African Americans residing in the South. However, other
non-southern states also had similar poll tax requirements. New Hampshire’s law, passed
in 1913, initiated a poll tax regulation. It read, “(there shall be a) Poll tax of $2 for every
male inhabitant between age 21 and 70 except paupers, insane persons or others exempt
by law” (Keyssar 2000, 357).

Eventually, passage of the Twenty-Fourth Amendment in 1964 eliminated, as a
condition for voting, any state poll tax, or any other monetary voting requirement. The
Voting Rights Act of 1965 expanded the language abolishing poll taxes by stating in
Section 10(a), “Congress declares that the constitutional right to vote is denied or
abridged in some areas by the requirement to pay a poll tax as a precondition to voting”
(Prentice Hall 2000, 5). Subsequently, the four remaining states with poll tax
requirements after 1964, Alabama, Mississippi, Texas and Virginia, had their laws
eliminated by the 1966 court case of Harper vs. Virginia Board of Education. The
Supreme Court’s majority opinion stated there was no reasonable relationship between
the act of voting and the payment of a poll tax. With the high court’s decision came the final repeal of any state’s poll tax and the intentions to disenfranchise.

The most advancing national legislation to abolish race inhibitors from the ballot box was the signing into law of the Voting Rights Act of 1965. This law clarifies that it is an act intending “to enforce the Fifteenth Amendment to the Constitution of the United States and for other purposes” (Prentice Hall 2000, 1). The Fifteenth Amendment had, by law, granted African American males universal suffrage. Yet, in doing so, it had ostensibly prompted a backlash movement of subsequent laws and regulations created by state governments to attempt to deny African Americans and other races access to the ballot box. Congress, determined to increase this country’s civil rights, extended what the Fifteenth Amendment was lacking. In section 2 of the 1965 Voting Rights Act it was declared that “no voting qualification or prerequisite to voting, or standard, practice, or procedure shall be imposed or applied by any State or political subdivision to deny or abridge the right of any citizen of the United States to vote on account of race or color” (Prentice Hall 2000, 1, italics added).

This same piece of legislation outlawed any “tests or devices” to serve as prerequisites to voting, most notably the widespread practice known as “literacy tests”. An Alabama literacy test required written responses to such questions as “will you bear arms for your country if called upon to do so” (National Voting Rights Institute December 26, 2001, 3)? This same “literacy” test required a voter to “name some of the duties and obligations of citizenship” (National Voting Rights Institute December 26, 2001, 3). Other states had similar literacy requirements. These tests were intended to
deny uneducated and non-traditional voters the chance to vote, once again usually aimed at disenfranchising African Americans in the south.

The Voting Rights Act of 1965 also abolished English-only requirements, as was stated in Section 4(e): “. . . (For) language (whose user) was other than English, it is necessary to prohibit the States from conditioning the right to vote of such persons on the ability to read, write, understand, or interpret any matter in the English language” (Prentice Hall 2000, 2). With a growing population of non-English speaking citizens in the United States, this provision of the act has had far-reaching implications for allowing more citizens access to the ballot box. Once again, the intent is to allow more to vote, to get more to the polls on Election Days.

This defining legislative moment in 1965 to increase universal voting rights left no doubt about the national government’s resolve to force the states’ compliance outlawing poll taxes, literacy tests, and English-only requirements. Section 11(a) states, “No person acting under color of law shall fail or refuse to permit any person to vote who is entitled to vote under any provision of this Act or is otherwise qualified to vote . . .” (Prentice Hall 2000, 5). Sanctions against any who should violate the Act are set forth in Section 12(a). “Whoever shall deprive or attempt to deprive any person of any right secured by section 2, 3, 4, 5, 7, or 10 or shall violate section 11(a) or (b), shall be fined not more than $5,000, or imprisoned not more than five years” (Prentice Hall 2000, 6).

The national government declared its very serious intentions of expanding the electorate and eliminating any racial barriers in 1965, while taking the initiative of making voting rights and practices more of a federal issue and within federal jurisdiction. The Voting
Rights Act of 1965 did more to empower, guarantee, and hopefully maintain the vote to all enfranchised groups than any other single American law.

The suffrage movement for women was burdened with its own challenges. Women were members of all those at one-time-or-other non-enfranchised groups: the propertyless (only their husbands in many cases could own property), African American women (when no African American could vote), Native American women, the illiterate, and the poor. Realization of voting for women naturally had to “lineup” behind many other suffrage-seeking disenfranchised groups. Women were forced to fight against political and cultural stereotypes. They were many times viewed as political illiterates, a population that would be sullied by the experience of becoming politically savvy and exercising the “dirty” involvement of casting a ballot.

At the outset of the women’s suffrage movement at Seneca Falls, New York in 1848, very few would take serious representatives of half this country’s citizens concerning its enfranchisement. The general sentiment was that women were meant to be protected by men, not empowered by them. Suffragists felt that as others gained the right to vote, the arguments used in favor of these groups’ enfranchisement were equally compelling for their cause. The defining moment early during their struggle when suffragists expected enfranchisement was at the adoption of the Fifteenth Amendment. Surely, they thought, as African American men were gaining suffrage in the mid-nineteenth century, so too would the “progressive” Republican Party simultaneously realize the natural inclusion of female suffrage. Nevertheless, the ratification of the Fifteenth Amendment struck a hazardous blow to the suffragists’ movement. By implication, the absence of gender language from the Fifteenth Amendment reinforced
that women shall remain disenfranchised. The hopes of the suffragists, stemming from
the rise to power of what they viewed at the time as a dominant and seemingly favorable
Republican Party of the 1870’s, were summarily dashed.

Female suffrage increased in some states and territories from the end of the
nineteenth century up to the passage of the Nineteenth Amendment in 1920. By 1918
full enfranchisement of women had materialized in twenty-one of the forty-nine states
and territories (Hawaii not as yet included). Another seventeen states were allowing
female suffrage in presidential elections by 1919. The Nineteenth Amendment forced all
remaining states to accept the long-overdue full inclusion of women as voters.

Much can be learned from the women’s suffrage movement. Although it did take
longer than a half century for women to acquire the right to vote, the optimism that
suffrage advocates felt in the 1860’s was idealistically grounded in their own ideological
vision and limited experiences. Supporters of women's suffrage sincerely and deeply
believed not only in their own cause, but in the power and righteousness of their simple
arguments. They felt that they were capable and willing voters, and were ultimately
supporting a sensible cause, similar to the arguments of that era to abolish slavery and
grant African American men the right to vote. Women, more than possibly any other
disenfranchised group seeking its voting rights, embraced the philosophical demand that
_all_ citizens should have access to the ballot box. They held onto the belief that the male-
dominated political structure would eventually be forced to come to this realization, as it
had with the propertyless and African American men. Women paved the way,
philosophically, for the ideal that voting is important for all, and should be naturally
accessible to all.
Since many young people fought and died during the Vietnam War, the most recent enfranchising movement was realized in 1971. States had established their own voting age requirements until the passage of the Twenty-Sixth Amendment gave all eligible USA citizens reaching their eighteenth birthday the right to vote. Once again, this federal decision superseded a traditional state power, granting a deserving group the right to vote. The Twenty-Sixth Amendment once again moved this country toward increased jurisdiction of national laws over state qualifications when making decisions concerning voting.

The history of enfranchisement in the USA as it unfolds reveals a struggle for, and, slowly yet decisively, a commitment to, the acceptance of enlarging an electorate by alleviating obstacles that have stood in the way of potential voters. There has been a continual struggle to make popular sovereignty, as exercised through the ballot box, more universally-accessible. Historically, these voting changes were generated for mass numbers of Americans to be included in the polity. Other aspects of this movement have removed obstacles designed to disenfranchise millions who had gained suffrage. And, all phases of the voting rights’ movements have resulted in elevating the belief that the ballot box must be guaranteed, accessible, and ultimately convenient for all.

Easier methods of registration have been proposed and implemented in various states. Oregon has eliminated the local polling place in favor of a mail-in, or absentee ballot, system. The immediate future polling convenience would be the method of accessing the ballot box from home or work over the internet. Other countries and some states have implemented internet voting, including the ability to vote from one’s personal computer. Each move toward increasing enfranchisement, to allow more of the public to
have access and convenience to the ballot box, strengthens this country’s system of democracy. In 1870, Republican Charles Sumner declared that the ballot was "the great guarantee and the only sufficient guarantee of human rights” (Keysar 2000, 184). The ballot’s importance, as evidenced historically, and relied on in the future, depends on its universal access.

I-voting has the potential to add convenience for most Americans, yet certainly not all. Should i-voting become the accepted means of voting in the future, attempts must be made to alleviate inequalities that could exist between computer haves and computer have-nots. Implementing remote i-voting must be accompanied by both on-site i-voting capabilities as well as mail-in ballots. Continuing these two current practices will guarantee voters the same accessibility that currently exists, yet adding the convenience of voting from a PC. There may be an actual split between i-voting usage and other methods of voting. However, the so-called “digital divide” should not develop as it relates simply to voting access. With or without personal computer access, voters should be allowed to continue to vote at their traditional polling sites or by selecting mail-in ballots.

However, convenience does not necessarily mean equality in the process of voting, whether it consists of i-voting or the traditional, current paper balloting at polling places. All voting procedures have inherently unequal access. Today anyone without transportation may find it more difficult to travel to a polling place. Some voters work long hours and find it difficult to make the time to get to the polling place, while others may have the luxury of extended lunch breaks or work days that allow them time to get to and from the polls. Remote i-voting has the potential to decrease these prior inequities,
yet may, in its own form of convenience, generate new ones. As with all new forms of voting, hopefully the improvements will outweigh the deficiencies.

What is essential today in the USA is a revitalization of what many have fought to gain over two centuries, the power to maintain a system of governing in which voting for elected representatives remains the key element. The legacy of, and struggle for, popular sovereignty must continue to evolve, expand, and empower the people. I-voting has the capability to move this country’s voting process in a direction that may increase access for voters to exercise their privilege and right to vote.
Chapter Two: The Decline of the American Voter

It is one of the peculiar intellectual accomplishments of democracy that the concept of the insoluble becomes unfashionable—nay, almost infamous. To lack a remedy is to lack the very license to discuss the disease. The causes of this are in the nature of democracy itself. It came into the world as a cure-all, and it remains primarily a cure-all to this day.

From H.L. Mencken’s “Notes on Democracy”, p 549

In this country the debate lingers concerning decreased voter participation and the impact that trend has on the American Dream of participatory, representative democracy. Post-election results from across the country decry low voter turnout. “Voter turnout hits record low in state” is a headline from a California newspaper that alludes to that state’s voting maladies. This type of news story has become all too familiar. “Only 36% of eligible CA voters in the 2002 November general election exercised their privilege at the polls” (Telegram Tribune, November 27, 2002, B7).

Despite the drama of a “race too close to call” played out during the presidential election of 2000, participation by eligible voters on Election Day in the United States continued its descent, a decline prevalent since the 1960’s. Attempts have been proselytized to disparage the widespread belief that voter turnout is actually on the decline. One such hypothesis exists in Michael McDonald and Samuel Popkin’s *The Myth of the Vanishing Voter* (McDonald 2001). Their findings are not compelling. Sheer statistics display a steady decline. Even during the 2000 presidential election, predicted to be a close race on the eve of election day, where, as never before in a national contest could it be argued that “every vote counts”, only half of eligible voters
went to the polls that November. The overwhelming research and studies support this steady decrease in voter participation. Whatever suggestions exist as to the reasons why, the results are clear. Among democratic nations today, the USA ranks at the bottom of voter involvement (Crotty 1991). “We are reminded each election year that fewer voters show up at the polls in America than in most other democracies: our turnout rate ranks us just above the cellar-narrowly besting Switzerland, but below all twenty-two other established democracies” (Putnam 2000, 31).

Verification of this trend of declining eligible voter turnout is found in statistics published following each election. USA primary voting, as reported by the Committee for the Study of the American Electorate, declined from a high of 32% in 1966 to a low of 19% in 2000 (Smith 2001). The International Foundation for Election Systems Voter Turnout identified 10 developed democracies, listing the United States as having the lowest participation rate, averaging 50% over the 4 most recent decades (Smith 2001). Most indicative of the USA downward trend is from the Statistical Abstract of the United States conducted by the Federal Election Commission. Statistics show a decline in eligible voter participation in the USA from a high of 63% in 1960 to a low of 51% in 2000 for presidential election years (see Table 2.1), and a decline from a national high of 45% in 1962 to a low of 33% in 1998 in non-presidential election years (see Table 2.2). Robert Putnam in Bowling Alone relates these statistics to their important consequences. “Participation in presidential elections has declined by roughly a quarter over the past thirty-six years. Turnout in off-year elections is down by roughly this same amount” (Putnam 2000, 32). “Like a fever, electoral abstention is even more important as a sign of deeper trouble in the body politic than as a malady itself” (Putnam 2000, 35).
Table 2.1: Presidential Voting Years: Turnout percentages of all eligible USA voters:

<table>
<thead>
<tr>
<th>Year</th>
<th>Percentage of Eligible voters who cast ballots</th>
</tr>
</thead>
<tbody>
<tr>
<td>1960</td>
<td>62.8%</td>
</tr>
<tr>
<td>1964</td>
<td>61.9%</td>
</tr>
<tr>
<td>1968</td>
<td>60.9%</td>
</tr>
<tr>
<td>1972</td>
<td>55.2%</td>
</tr>
<tr>
<td>1976</td>
<td>53.5%</td>
</tr>
<tr>
<td>1980</td>
<td>52.8%</td>
</tr>
<tr>
<td>1984</td>
<td>53.3%</td>
</tr>
<tr>
<td>1988</td>
<td>50.3%</td>
</tr>
<tr>
<td>1992</td>
<td>55.1%</td>
</tr>
<tr>
<td>1996</td>
<td>49.0%</td>
</tr>
<tr>
<td>2000</td>
<td>50.7%</td>
</tr>
</tbody>
</table>

(US Bureau of the Census, Statistical Abstract of the US 2001)

Table 2.2: Non-Presidential Voting Years: Turnout percentages of all eligible USA voters:

<table>
<thead>
<tr>
<th>Year</th>
<th>Percentage of Eligible voters who cast ballots</th>
</tr>
</thead>
<tbody>
<tr>
<td>1962</td>
<td>45.4%</td>
</tr>
<tr>
<td>1966</td>
<td>45.4%</td>
</tr>
<tr>
<td>1970</td>
<td>43.5%</td>
</tr>
<tr>
<td>1974</td>
<td>35.9%</td>
</tr>
<tr>
<td>1978</td>
<td>34.9%</td>
</tr>
<tr>
<td>1982</td>
<td>38.0%</td>
</tr>
<tr>
<td>1986</td>
<td>33.5%</td>
</tr>
<tr>
<td>1990</td>
<td>33.1%</td>
</tr>
<tr>
<td>1994</td>
<td>36.0%</td>
</tr>
<tr>
<td>1998</td>
<td>32.9%</td>
</tr>
</tbody>
</table>

(USA Bureau of the Census, Statistical Abstract of the USA 2001)

Ruy A. Teixeira states, “... the decline in voter turnout since 1960 has been substantial and serious and is no way merely an artifact of available data” (Teixeira 1992, 57). Some theorize that our nation’s declining turnout at the polls is a result of our legacy of attempts to disenfranchise voters. Decline in turnout may be seen as the result of “political repression”. The legislating of poll taxes, literacy tests, cumbersome registration requirements, and English-only ballots, inhibited and/or prohibited many American voters. These attempts to disenfranchise generally targeted ethnic groups and low income groups. The political intent of these obstacles seems obvious. Demobilizing
and disenfranchising the undesirable voter from the end of the civil war through the depression was a movement to selectively alter election outcomes. Likewise, during the 1920’s, registration laws became a major deterrent to voting. Many states instituted yearly registration, which were absurd laws conveying an intention of making voting inaccessible rather than to facilitate voting (Avey 1989).

Yet, as has been pointed out in chapter one, a great national effort was put forth in the USA to eliminate these obstacles to voting. Literacy tests and poll taxes were eliminated. Registration requirements have been eased, facilitating access to the ballot box. Relaxation and elimination of legal obstacles certainly have increased voter participation rates following the 1920’s depression era through the 1960’s. As Michael J. Avey points out, “There has been a substantial easing of demobilization (of voters) since the early twentieth century. While demobilization factors have been extremely important in causing turnout to decline drastically in the early part of the century, today the impact is much less clear” (Avey 1989, 52). Subsequently, the debate has raged as to what the variables might be that constitute declining voter turnout rates after the 1960 presidential election. Thus, the begging question has become, why this decline in voting participation during a time when national policies were decreasing legal voting obstacles?

Throughout our history, even once voting rights were extended, participation has eventually waned. A variety of reasons, most inter-related, may be to blame. The demise of the political party structure is one factor that has contributed to voting decline. Social factors, like confidence and trust in government have added to voter abstention. Events with political fallout, events like political assassinations, Vietnam, Watergate, and the Monica Lewinsky (and related) scandals, may have deflated voter turnout. Cynicism and
alienation toward government officials and their policy decisions have undoubtedly kept many voters from the polls. Yet it must also be pointed out, that many voters are kept away due to inconvenience, especially with today’s rushed lifestyle for many Americans. “Soccer Moms” and “Workaholic Dads” may find it too inconvenient to show up on Election Day by getting to a polling site, waiting in line, casting a ballot, and rushing off to their next appointment. Ostensibly, voters are preoccupied with more immediate and closer-to-home concerns. Ron Hirschbein concludes,

In times past, citizens voted because they were captivated by the illusionary instrumental efficacy of a single vote. Strong in the faith that voting empowered individuals to govern themselves, or (more modestly) that their voice was heard since “every vote counts,” citizens played their part in the electoral drama. This faith is difficult to sustain in a mass society governed by powerful, inaccessible elites—leaders who do not elicit trust, let alone confidence (Hirschbein 1999, 3).

This country’s voting decline is attributed to many voters’ perceived statistical value of their single vote, the all-too-common complaint that “my vote doesn’t count anyway”. This was arguably invalid, as has been pointed out, in the 2000 Bush-Gore race. Yet, this attitude has permeated the American voting mentality. Following this hotly-contested presidential race, voter turnout continued to slide in the 2002 elections.

The future of the nation’s voting attitude would be better served if it evolved to the belief that the expressive value of a vote is far more important than its instrumental value. The desire and interest to vote and be a part of the electorate must supersede the mathematical probability that any single vote makes a difference. Single votes have rarely, if ever, made the difference here or abroad, and yet higher percentages of participation by eligible voters have previously existed, and do exist in many
democracies today. The deduction is that the essence of participating should be the expressed value of having participated, coupled with the attitude that voting is an important American (and representative democracy) participatory behavior. It is paramount to view voting as a realization of the concept, and quite possibly the tradition, that voting is part of our sacred ritual of popular sovereignty, and vital to our system of governing.

To participate on Election Day is to commune with others in this sacred ritual. One voter deciding not to vote is statistically inconsequential. The bloc of eligible voters deciding not to participate is both statistically and attitudinally potentially harmful. To abstain leaves the individual non-voter more remote from the process and the policies enacted by those elected. Young eligible voters abstain the most. “This generation gap in civic engagement, if it persists, will further depress political participation in the future” (Putnam 2000, 37). Self-selected non voters ultimately disempower themselves.

Continued and repeated abstention can generate established and contagious abstention, resulting ultimately in this country’s continued decline of voter turnout. Alternatively, increased participation could be just as contagious.

How, then, do we reverse the trend? The potential to mobilize the vote seems essential in our representative democracy. As most policy deterrents that demobilized the voters were eliminated during the later half of the twentieth century, and as a consequence, access was increased, subsequently voting turnout declined steadily during the 1960-1996 period and still remains unacceptably low today. Moreover, this decline is occurring during decades when overall USA educational levels have been increasing, strides in civil rights have been achieved, and there has been an increase in public access
to the news of politics and policy decisions. Likewise, these opportunities for the polity to be more informed and involved should increase in the future. All these societal changes should be variables that would arguably increase, not decrease, voter participation. So, the question remains, why is the United States sustaining this decline in voter turnout?

Possibly one potential indication may be contained in the set of voters who have the lowest voter turnout today, the 18-24 year old voting bloc. Ironically, this group of voters, that at least in numbers of years to be affected by elections and subsequent policies, has the most to lose or gain, participates the least. The youth of this nation, by sheer low turnout numbers, seem disconnected to the ballot box. This may be due to unique lifestyles, sheer apathy, or even popularly-driven alienation. Whatever the cause, many in this age range do not vote.

However, the 18-24 year olds are not the least educated group. The youth of this nation are not the furthest removed from being exposed to information and discussion of the political process, since graduating seniors from high schools across America are introduced to public policy, politics, and voting in various types of civics courses. Those students who continue on to post secondary education are also required by most colleges and universities to enroll in and complete a general survey course in government and politics. These opportunities should be viewed as encouragement toward becoming politically active and voting. Nonetheless, the 18-24 year old voting bloc continues its decline and represents the lowest turnout by age of any bloc casting ballots on Election Day (see Table 2.3).
Feeling disconnected and foregoing voting from the outset of voter eligibility may become a bad habit to break. I-voting has the potential to reverse this trend among the youth of the nation. “Proponents of internet voting suggest it could increase turnout, particularly among younger voters who are familiar with Internet technology” (Coleman, February 22, 2000, 1). Capturing this essential bloc of voters is of fundamental interest for increased voter participation, and i-voting offers a promising venue to accomplish it.

**Table 2.3: 2000 election voter turnout by age groups:**

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Percentage of Eligible voters who cast ballots</th>
</tr>
</thead>
<tbody>
<tr>
<td>18-24</td>
<td>32.3%</td>
</tr>
<tr>
<td>25-34</td>
<td>43.7%</td>
</tr>
<tr>
<td>35-44</td>
<td>55.0%</td>
</tr>
<tr>
<td>45-54</td>
<td>62.3%</td>
</tr>
<tr>
<td>55-64</td>
<td>66.8%</td>
</tr>
<tr>
<td>65-74</td>
<td>69.9%</td>
</tr>
<tr>
<td>75 &amp; up</td>
<td>64.9%</td>
</tr>
</tbody>
</table>

(USA Bureau of the Census, Statistical Abstract of the USA, February 27, 2002)

Today’s factors for declining turnout remain a mystery to many researchers. If the legal and procedural barriers have been virtually eliminated, the next obvious areas to look for blame are at non policy-related barriers. Decline is not just a matter of fewer people navigating a treacherous registration process, since even those registered are exhibiting a propensity to forego the polling place (Teixeira 1992). The overriding and most obvious answer seems to be contained in this long-held belief about turnout. “A modest raising of the inconvenience of voting should sharply reduce turnout; likewise, a modest rise in the perceived benefits should sharply increase it” (Avey 1989, 53). The modern, immediate focus should be, then, on convenience and benefits, not on legal obstacles. Once convenience is realized, it follows that more will eventually participate. Simply increasing participation as a perfunctory behavior is treacherous. One must
contend with the idea that more is not necessarily better. The hope is, that with increased participation, attitudes will change, and more voters, especially young voters, may experience personal pride and even rewards in becoming part of the process. Just as the enfranchisement of specific groups has not automatically led to sustained political activity, there is no guarantee that i-voting will produce a sustainable increase in voter turnout. What does seem inevitable is that turnout is low and on the decline, and remains likely to continue under the status quo.

Although all barriers to voting and the resulting low voter turnout are many times suspected of being a simple consequence of apathy or alienation, there must be concern in this country over those, especially the youth, who choose not to vote. Making voting, simply in its process, part of someone’s daily norm, can generate a willingness to participate, and the internet has the opportunity to provide that, especially for the youth of this nation. Jim Adler, founder of VoteHere.net, agrees that especially the 18-24 year old voting bloc can experience a surge in casting ballots. “Our political institutions don’t resonate with youth, but the internet really does” (Rosen January 24, 2000, 2).

To mitigate the reasons for the absence of this bloc of non voters, or for that matter, any non voters, as simply a matter of apathy, and succumb to the belief that non-participation is just an American fact of life, is to bury one’s head in the sand. Apathy and alienation are not innate characteristics. They are born and fostered by many means and experiences. To attempt to figure out the multitude of individual reasons for their existence and increased inefficacy is difficult, most likely even futile. To attempt to correct this downward trend is reasonable and seemingly achievable. Keeping in mind our nation’s history of obstacles to voting and related voter turnout, the will to increase
participation is directly related to the polity’s access to the ballot. To accommodate both ease in registration and the methods of casting ballots is to reverse our downward trend and allow the greatest potential for increased voter turnout. Still today, casting a ballot is inconvenient for many. Inconvenience breeds abstention. Convenience breeds participation. The most immediate possibility to reverse this American trend exists in the development and implementation of internet voting.

As the electorate continues its momentum of distancing itself from the voting booth, the need to implement i-voting becomes increasingly essential. There must be a method to link the traditional nonvoters to the ballot box, if not initially via policy and/or attitude, then by process. Voting through the ease and fascination of a computer and the internet could prove to reverse this country’s downward spiral of voter participation. I-voting provides the opportunity to capture many reluctant American voters. This is seemingly no more possible and probable than with the 18-24 voting bloc, a bloc increasingly (and nearly universally) computer-literate as well as computer-fascinated.

In the USA, computer fascination, although strongest among the youth of the nation, is increasingly prevalent throughout all ages, classes, and income levels. Retired persons are increasingly using computers. Many Americans pay their bills, shop, and order travel itineraries over the internet. Ironically, as less Americans are voting, more are surfing the web and utilizing the internet for daily pleasure and personal business. Computers are a major component of the modern classroom, and, by all indications, familiarity and acceptance of computers and the internet will grow exponentially.

The acceptance of, movement toward, and eventual implementation of web voting could prove to be that easy access and the modern polling ritual that can reverse the
declining and vanishing electorate. Once recaptured into the habit of voting, non-voters become susceptible to entering the world of politics and developing not only the desire to vote, but hopefully the attitude that to take part in this essential American ritual is important. Eventually newfound voters could develop pride as active participators. With increased voter participation, a more meaningful consequence of their involvement may be generated. Possibly, this can create an outcome of not only increasing the numbers of those participating in the act of voting itself, but the subsequent interest in what and who voters are voting for, and what their votes mean to themselves and to this representative democracy. First, you provide the opportunity. Second, you bring them into the fold. Ultimately, they may become a frequent, if not lifelong, members of the process, and take more pride and ownership in having participated.
Chapter Three: Arizona’s 2000 Democratic Presidential Preference Primary: An I-Voting Groundbreaker

The results show that, if implemented responsibly, an election that includes Internet voting can be used to improve voter access to the election process.
Mark Fleischer, Chairman of the Arizona Democratic Party, 2000
From Jason Howard’s “Minority Vote in Arizona Presidential Preference Primary Strengthened by High Voter Turnout”, p 1.

The history of American democracy and American enfranchisement is a history of what could and what should. The right to vote has expanded, while the roadblocks set to prevent such, have been systematically eliminated. Despite this progress, recent history displays a steady decline in eligible voter participation. The time has come to thoroughly investigate and analyze whether internet voting will become the standard procedure for American voters, and what the consequences of i-voting will be.

Many Arizonans can attest to i-voting and its accommodating process from the Democratic presidential preference primary held in that state in March, 2000. This election produced the first binding political election that included the process of remote i-voting. Arizona voters were allowed to cast ballots from home, work, or any venue where they could access the internet over a four day period, Tuesday through Friday. In this election the opportunity for voters to cast ballots via the absentee ballot as well as at traditional polling place venues was retained.
What is important about this Arizona election is whether or not internet voting influenced voters’ behavior. The research suggests significant changes in Arizona turnout, as well as attitude. Against all odds, Democrats turned out in record numbers. “State Democratic leaders (were) anxious to reinvigorate their party . . . in a state where the governor, both senators and five out of six House members are Republicans-and registered Republicans outnumber Democrats nearly 2-1” (Mathews September 4, 2000, 1). If the resulting increased participation was politically-driven in Arizona, the impetus for increased participation for a healthy America in the future needs to be generated by a clear national objective. Implementing i-voting as a balloting process that could capture the voters’ interest and participation, as it seemingly accomplished in Arizona

Arizona presents a very interesting case study. Results from the Democratic presidential preference primaries of 1996 and 2000 provide valid comparisons. In each contest, the main candidates Bill Clinton and Al Gore, respectively, ran essentially unopposed. In 2000, Bill Bradley, Gore’s only viable opponent, had withdrawn by the March 7 primary starting date. Both elections had the potential to draw extremely low percentage of voters with essentially uncontested presidential nominees. “It didn’t matter that folks essentially left to vote for Gore, Gore, or Gore after Bill Bradley retreated from the (2000) presidential election last week, rendering remaining democratic races like the one in Arizona all but meaningless. People voted anyway” (Burke March 12, 2000, 1). “This turnout was twice as large as in any other Democratic primary since 1984” (Kantor March 15, 2000, 1). Mark Fleischer, chair of the Arizona Democratic Party, was convinced the reason for the substantial increase in the 2000 turnout was due
to the inclusion of i-voting. “When it’s easy, fast, and fun, people will vote” (Burke March 12, 2000, 1).

This 2000 election provides empirical data that can examine the role and effects of i-voting on an electorate. Data from similar past Arizona elections can be used as comparison data to draw conclusions as to the potential of increased voter participation. Data can provide a critical examination of the effectiveness of the technology and its perceived benefits for voters who utilized this unique methodology. In turn, the Arizona experiment provides one potential test case with the ability to identify and resolve important issues facing the future of i-voting. Although relatively small in scope, it was a bold attempt that can provide some analysis for conducting i-voting on a larger, possibly even national, scale.

In 1996, only 12,884 of 800,000 registered Arizona Democrats turned out. By March 11, 2000, 86,907 Arizona Democrats had cast their primary ballots (Done February, 2002). This overwhelming increase was due to two procedures. Whereas the turnout numbers remained steady at traditional-only polling place locations, the inclusion for 92 hours of remote internet access, followed by on-site internet voting during the traditional polling hours, accommodated nearly 40,000 “new” participants. Mail voting, also convenient for voters, increased from 233 in 1996 to nearly 33,000 by 2000 (see table 3.1). Similarly, convenience seemingly increased turnout. Fleischer commented, “In comparison to both 1992 and 1996, voter turnout increased significantly . . . making this the most accessible election ever, increasing voter turnout by more than 600%” (Howard March 27, 2000, 1).
Table 3.1: **Voting Turnout in the 1996 and 2000 Arizona Democratic Presidential Preference Elections**

<table>
<thead>
<tr>
<th>Ballot Type</th>
<th>1996</th>
<th>2000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Off-site internet</td>
<td>N/A</td>
<td>35,768</td>
</tr>
<tr>
<td>On-site internet</td>
<td>N/A</td>
<td>4,174</td>
</tr>
<tr>
<td>Paper</td>
<td>12,651</td>
<td>14,217</td>
</tr>
<tr>
<td>Mail</td>
<td>233</td>
<td>32,748</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>12,884</td>
<td>86,907</td>
</tr>
</tbody>
</table>

(Done February, 2002, 8)

Many Arizona internet voters reported their 2000 internet voting experiences as a positive experience. An enthusiastic Marty Harper, casting his ballot from home on the third day of internet voting, commented, “It was really easy, and kind of fun. . . It took about five minutes (compared to his usual 40 minute, roundtrip drive and wait at the polling place) to get in, to fill out the information, to vote and to print out the certificate” (Raney March 10, 2000). Along with the convenience and time saved for thousands of voters, the environment and economy benefited by reducing the numbers of voters who traditionally would have driven to and from the polling sites.

To validate these attitudes, the University of Arizona conducted a follow-up survey in the spring of 2001. Sending out questionnaires randomly to Arizona residents, registered and unregistered voters, the university received back 495. Respondents were, within statistically insignificant variations, a representative sample of both Arizonans and the overall USA population. (The one statistical exception was the category of level of education, where 65% of respondents reported holding a bachelor’s degree or higher, considerably higher by 20% than Arizonans and the general USA population) (Done February, 2002).
The results of the university’s survey clearly indicate a strong desire for increased participation with the potential inclusion of internet voting and registration.

Respondents at the time of the survey who were unregistered displayed a significant increase in their willingness to register over the internet. Of unregistered Arizonans completing the survey, 23% replied they would not register, 15% responded not sure, but 62% declared that they would register over the internet if made available. Relating this to the context of the entire USA population, if 62% of the unregistered USA voters would register online and subsequently only half of those would actually cast ballots, this would increase USA turnout during a presidential election year by approximately 12 million voters, or roughly 12% (Done February, 2002). The survey’s responses indicate that online registration alone has the potential to increase voter turnout.

Respondents in the university’s survey also reported that 42% would vote online if that were made available. This 42% of survey respondents corresponds to the actual number of Arizona Democrats who did vote (41%) via the internet during the 2000 Democratic Presidential Primary. About half of these respondents reported they are typically non-voters. During the 2000 presidential election 105 million votes were cast. Transferring the responses to the USA general population, it is believed that there would be an increase of voter participation of about 21%. This percentage increase projects to a national turnout of 130 million eligible voters for a presidential election, increasing participation from 50% to 71% (Done, February, 2002). These projections overwhelmingly support the theory that voter turnout, as was witnessed in the Arizona 2000 primary, could significantly increase with internet accessibility.
Table 3.2: Percentages of respondents who would have voted on the internet in the 2000 election, a study conducted by the University of Arizona, spring, 2001:

<table>
<thead>
<tr>
<th></th>
<th>No</th>
<th>Not Sure</th>
<th>Yes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total of all Respondents</td>
<td>38.3</td>
<td>19.5</td>
<td>42.2</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>38.4</td>
<td>19.0</td>
<td>42.6</td>
</tr>
<tr>
<td>Male</td>
<td>38.2</td>
<td>20.0</td>
<td>41.8</td>
</tr>
<tr>
<td>Ethnicity</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Native American</td>
<td>33.3</td>
<td>33.3</td>
<td>33.3</td>
</tr>
<tr>
<td>Asian</td>
<td>30.8</td>
<td>30.8</td>
<td>38.4</td>
</tr>
<tr>
<td>Black</td>
<td>50.0</td>
<td>16.7</td>
<td>33.3</td>
</tr>
<tr>
<td>Hispanic</td>
<td>36.6</td>
<td>22.0</td>
<td>41.5</td>
</tr>
<tr>
<td>White</td>
<td>38.4</td>
<td>18.8</td>
<td>42.8</td>
</tr>
<tr>
<td>Education</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grade School</td>
<td>43.8</td>
<td>31.2</td>
<td>25.0</td>
</tr>
<tr>
<td>High School/GED</td>
<td>43.7</td>
<td>15.2</td>
<td>41.1</td>
</tr>
<tr>
<td>College</td>
<td>35.2</td>
<td>21.3</td>
<td>43.5</td>
</tr>
<tr>
<td>Income</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prefer not to answer</td>
<td>45.0</td>
<td>19.5</td>
<td></td>
</tr>
<tr>
<td>Less than $30,000</td>
<td>40.0</td>
<td>21.3</td>
<td>38.7</td>
</tr>
<tr>
<td>$30,001-$60,000</td>
<td>41.2</td>
<td>18.4</td>
<td>40.4</td>
</tr>
<tr>
<td>$60,001-$90,000</td>
<td>29.5</td>
<td>17.9</td>
<td>52.6</td>
</tr>
<tr>
<td>More than $90,000</td>
<td>22.4</td>
<td>23.9</td>
<td>53.7</td>
</tr>
</tbody>
</table>

(Done February 2000, 12)

What, then, made the Arizona 2000 internet experience so successful and this country’s best template for future voting success? The data imply that the ease and convenience of voting from remote locations, most commonly home and work, coupled with the availability and fresh vitality of voting from polling places using computers, as well as mail-in balloting, increased voter participation.

Not leaving the desired result of increased participation to chance, Arizona party leaders and its selected company, election.com, prepared the voters with a pre-election outreach program to enable success. Two months prior to the 2000 primary, all registered Democrats were mailed information outlining all possible modes of voting in
the upcoming presidential preference primary. Voters were provided directions in both English and Spanish for casting their votes by four available procedures. First, they were notified how to vote by mail, or absentee ballot, and how and when to request this type of ballot. Second, voters were given a traditional polling location where they could vote on paper. Third, they were informed that if they did show up in person at their assigned polling location, they could select the traditional paper ballot, or could alternatively select computers at these same locations to vote on the internet. Fourth, voters were given the option to vote from a personal computer from a remote location using a seven-digit alphanumeric personal identification number (PIN).

Remote voting took place 4 days immediately prior to site voting, and once a PIN had been used from a remote location, that voter’s availability was locked out from that election’s balloting. Thus, a voter could not vote more than once, even if attempting to do so by different voting methods. An initial remote internet vote, followed by a repeated attempt at a polling place location the day after remote voting had ceased, was not possible. Arizona officials and election.com also provided help-desks and “hotlines” during election windows for any voters who were still dazed and confused by their options and the procedures.

Most remote computers were compatible with the voting system in Arizona. Those voters with relatively older home computers that did not meet the standards of security and privacy features required by election.com, were provided web browsers with the ability to upgrade the inadequate home systems. “A secure socket layer communication link between the voting server and the remote internet voting clients was established with digital signatures. Secure socket layer technology is the same type of
connection used for most banking and commercial internet transactions” (Done February, 2002, 8). Further protection was implemented by using a series of redundant servers and electrical power systems (Done February, 2002).

Protections and secrecy for each voter’s submitted ballot were also in place. The database design contained separate tables for voter identification and voter results. Once an internet vote was cast, the identity of the voter was stored in one table, the results of the ballot in another. The two tables could no longer be merged, securing voter secrecy. The data bank stored those who had voted, not how they had voted. The data bank listing who had voted was utilized to lockout any subsequent votes by that same person. The data bank that stored the votes as submitted by all voters was used to count results of the cast ballots. Both tables were encrypted for security. A series of checks and balances ensured security and privacy. Technologically, the Arizona experience was conducted without flaws. There was no failure to protect privacy and security, no outside intrusion, no chance of multiple balloting.

Arizona provides this country’s best test case for future progress in USA voting procedures. Not only was Arizona a success, but the results display that the technology implemented for the primary proceeded without flaws. Follow-up surveys convey many of the voters are convinced i-voting was successful and are receptive to its future use. “As the Arizona experiment showed, a significant number of voters do trust the new technology, turnout was boosted, and the security of the system was not fatally compromised” (Gibson 2001-02, 581).

Other attempts have been made and will undoubtedly continue to be made for online voting. Thurston County, Washington, tested internet voting in February of 2000
for a non-binding primary. This county includes the cities of Tacoma and the state capital, Olympia. Voters were given an eighteen-day voting window up-to-and-including election day. For this “test”, 3,638 people voted online. The most promising voter responses as reported by Thurston County election manager, Kimberley Wyman were based on a follow-up study. According to Wyman, 91.5% of the nearly 4,000 polled, they reported they would vote again online, with 93% stating they felt their votes were secure and accurate, and 66% judged online voting to be much easier than voting at the polls or voting by mail-in ballots (Mathews September 4, 2000).

Another bloc of voters where the convenience of i-voting seems a natural fit is for uniformed and overseas citizens. Traditionally, paper absentee ballots have been the mode of balloting for Americans overseas. Numerous bills have passed Congress to entitle and ensure, especially for military personnel, accessibility to elections. Many of these federal laws, the Soldier Voting Act of 1942, the Federal Voting Assistance Act of 1955, through the Uniformed and Overseas Citizens Absentee Voting Act of 1986, have established procedures designed to guarantee accessibility; however, in many cases these procedures have overstepped traditional safeguards and regulations. Normal registration requirements were many times bypassed, as were other local and state regulations (Coleman April 2, 2002). Mailing procedures and inequities have always been a concern for overseas voters. Deadlines for counting votes from overseas personnel are oftentimes extended or even neglected. These voting procedure discrepancies were evident during the 2000 Florida presidential election fiasco. Internet voting could provide the best process for successfully accommodating overseas voters.
As a pilot program, overseas voters were allowed to vote online during the 2000 election. This initiative by the Department of Defense to allow men and women stationed overseas to vote online was supported by 79% of that voting population (PR Newswire April 7, 2000). Although very limited in scope as to the number of voters who actually did participate online in 2000, the obvious intent is to not only make access more compatible, but simultaneously eliminate, if not solely for geographic concerns, difficulties inherent in receiving, completing, and mailing paper absentee ballots.

Recognizing these inherent difficulties, and their potential remedy, the 107th Congress passed the Defense Authorization Act, signed into law by President Bush on December 28, 2001. It establishes continued support for the online voting pilot project that had been implemented for the 2000 elections. Within this same bill are national regulations that participating states must adhere to, extending the jurisdiction of the federal government’s involvement in administering presidential elections, mandating national standards for state and local elections. For 2004, the Defense Department will implement SERVE, short for Secure Electronic Registration and Voting Experiment, which will allow military personnel, as well as civilians overseas, to vote online. The DOD has contracted with Accenture’s new eDemocracy business unit to provide this online service. Displaced military personnel and their families, as well as other overseas Americans, can register and vote over any Microsoft Windows-based computer via the internet from anywhere in the world (Reed July 3, 2003).

Polli Brunelli, director of the voting-assistance program for the DOD, is making every attempt to expand the numbers of online voters in 2004 over those in 2000. “By Congressional mandate (i-voting) must reach many more voters during the next election
in order to justify its continuation. We hope to attract as many as 100,000 voters in
2004” (Albanesi June 20, 2003, 1). States that are expected to participate in SERVE
are Arkansas, Florida, Hawaii, Minnesota, North Carolina, Ohio, Pennsylvania, South
Carolina, Utah, and Washington (Caterinicchia, June 3, 2003).

Overseas i-voting provides a closer look into the future. Not only is the
availability of the internet as a method of casting a ballot legislated as a correctional
procedure for inadequate voting and counting of votes, but it is also viewed as a more
convenient means for overseas voters to participate. And, as the federal government
becomes more involved in establishing and regulating voting for overseas personnel, so
too is the stage set for a larger influence by the feds in all state and local elections, if not
by funding alone, by guidance and confidence as well. As Arizona’s experience
exhibited, states can successfully implement internet voting. Likewise, the federal
government, with precedents like its involvement and direction with overseas voting, is
primed to research, develop, and evaluate the potential future of internet voting.

Other countries have forged into the world of internet voting. Estonia has
prepared for online elections for its 2003 general elections. After watching its decline
from 75% voter turnout in its first post-independence election in 1995 to just over 50% in
its 1999 election, Estonia will implement i-voting which it believes will reverse its
downward trend. The intent, as reported by Estonia’s ambassador to London, is to
augment paper balloting with electronic voting, much like Arizona’s 2000 democratic
primary. Expectations for i-voting have Estonians confident the 2003 internet election
will restore participation to previous levels (Left March 28, 2001).
The United Kingdom has also implemented i-voting. This country, too, is reporting concerns about increasingly low voter turnout, and, by all indications, many view i-voting there as a likely remedy. The 2001 general election recorded the UK’s lowest turnout since 1918 (Rogers April 4, 2002). Sheffield County in England successfully included internet voting in its 2002 elections. A study by TOUCH of the UK showed that 75% of Sheffield County voters were more likely to vote in the next general election if they could vote online (Rogers April 4, 2002). Swindon residents in Sheffield County had another opportunity to vote online in their May, 2003 local elections, and 94% of the 15,000 online voters in a survey reported that they had every confidence and desire to graduate to online voting in a national election (Jellinek June 20, 2003).

The UK was presumed to be on the fast track toward national internet voting access, but recently the British government has, at first glance, seemingly moved to a slower, more cautious approach. Although the success in multiple elections in Sheffield County was setting the UK’s boded well for a future course toward expanded i-voting, concerns about the “digital divide” and technological breakdowns are slowing this country’s i-voting progress. Officials in the UK, despite their reported successes, are cautious about, yet committed to the potential of increased participation with i-voting (Jellinek November, 2002). Currently, the UK has plans to forego i-voting for their 2004 local elections.

The UK’s scrapping of plans for a countrywide local electronic voting election for 2004 has more to it than concerns over technology, however. The British government was substantially influenced by the inclusion of European elections to be held at
relatively the same time as that country’s local elections. “(Holding) elections for the European Parliament on the same day in May (later changed to June) 2004 as the UK council elections . . . is almost certain to scupper e-voting trials because laws permitting e-voting for local elections do not extend to national polls . . . “ (Jellinek, November, 2002, 3).

Switzerland ranks lowest in voter turnout of the 23 developed democracies in the world. This is due largely in part to Switzerland’s system of direct democracy. The Swiss are asked to vote on average five times a year on a variety of propositions as well as candidates. Swiss officials are coming to the realization that their future of voter turnout may depend on the development of i-voting. Their belief is that the ease and access of remote internet voting will illicit increased voter participation. Following a January, 2003 online vote in Anieres, the chief of the Swiss government’s political rights division commented, “after the test run in Anieres, it will take 10 years to provide a working system on the federal level” (Langley January 12, 2003, 2). By all indications, Switzerland is another modern democracy committed to future elections that include i-voting.

The future trends for voting in most all modern democracies will likely mean investigating, attempting, and possibly converting to i-voting. As more countries experiment, modify, and find success, more countries may follow. Technological challenges are being researched and developed in multiple countries, by multiple private and governmental bodies.

The convenience and use of internet voting is increasing with overseas American voters. Other countries are implementing electronic voting, some locally, some
nationally, to increase voter accessibility and voting turnout. Technological solutions are bound to develop with increased research and ingenuity. Arizona and other venues have exhibited, and continue to exhibit, that the future of voting may very well exist in the same informational and convenient technological future that surely most modern societies are becoming more and more familiar with, the world of cyberspace. The time and place for internet voting seems be gaining momentum as the future process for elections.
Chapter Four: Technology and I-Voting: Voter Identification, Accessibility, and Security

Almost all of these scenarios envision frequent national referendums over the Net, along with elections shifting from polling places to home computer terminals or digital TVs with Web connections. People will shed the inconvenience of leaving their homes, waiting in lines . . .

From Richard Davis’ *The Web of Politics: The Internet’s Impact on the American Political System*, p xiv.

To establish itself as the future of voting, the internet venue has technological challenges that must be met. Election.com provided technology that was successful in Arizona. VoteHere.net successfully conducted student body government elections at Kansas State University in March, 2000. Over 19,000 university students were given access to a custom ballot page. Vote Here interfaced with the university’s Access Technology System which was programmed to authenticate each enrolled student for access to the ballot. Once students voted, they were locked out from re-voting. Once votes were entered, they were encrypted, sent to VoteHere’s secure location to be decrypted and tallied (Caterinicchia April 3, 2000). Whether voting from remote locations involves creating a voter data base and providing access through a Personal Identification Number (PIN) (a one-time code as Election.com did in Arizona), or whether internet voting utilizes an existing data base with existing PINs as VoteHere.net did at Kansas State, the technology for voter identification and the ability to lock out any chance for users to re-vote, or multiple vote, is essentially developed and ready.
Using existing PINs could most likely be managed by the creation of a national smart card, ID card, or some sort of pre-existing system that itself may be in place in the USA in the near future. This identification system could be designed for many uses, including voting. At some point during the development of internet voting, the process may utilize some national identification system. However, with or without such a national identification system, one-time PINs can be generated that are either sent via paper mail (as in Arizona), or over the internet (either visiting a site or receiving an email) with appropriate security safeguards in place. Electronic retrieval of PINs can be dependent on additional personal information like social security numbers, birth dates, and/or mothers’ maiden names. Some have even suggested that these personal identifiers could be used to access ballots, and, like other internet transactions, would be secure, bypassing the need for a separate PIN for voting. Any technologically secure method would suffice. Advances in technology today have created relatively secure systems. Future technology will undoubtedly evolve to even more secure systems, possibly fingerprint signatures and/or retina scans.

Critics argue that there are diminished chances of success in correctly identifying voters and authenticating their votes with i-voting than have existed with traditional methods of voting. The current system of notifying voters by mail is no more secure. Maintaining the secrecy of voters’ identities and designated polling places through USA mail contact is no more secure than sending a PIN via USA mail. Using someone’s designated PIN to vote could be dependent on other private information needed as a personal identifier.
Additional arguments against internet voting include the security of actually “seeing” a voter at a polling place, as opposed to no administrative contact with voters. Once again, authentication can be breached by someone who has attained the most basic information. For example, in California, voters’ identification has been traditionally authenticated at the polling site by simply asking a voter’s address. This undoubtedly is a piece of information easily acquired by someone attempting to “steal” another’s vote. The likelihood of any polling official having recognition of voters to intercept impersonation is far-fetched.

Since many voters are selecting the convenience of voting at home by requesting an absentee ballot, security issues of who actually receives and fills out mail-in ballots are no different than who may actually go online on a computer and cast a ballot. In 1996, 20% of California votes were cast by the absentee, mail-in option (Alvarez November 1, 2000). The California Internet Voting Task Force reported, “... it is technologically possible to utilize the internet to develop an additional method of voting that would be at least as secure from vote-tampering as the current absentee ballot process in California” (Jones January, 2000). In Oregon, currently voters can only vote by mail, and the security issues of ballot interception and authentication there are no different than with use of PINs and online voting. Someone could coerce marking, or even substitute-fill out, any mail-in ballot, once having access to any intended voter’s ballot. This could transpire unaware by the intended voted by simply intercepting an in-route mail-in ballot. With PINs that require personal authentication, like maiden names, “stealing” another’s vote by such means would be much less likely. Security and authentication are issues as resolvable and maintainable, potentially even more secure,
for remote online voting, as they currently are for mail-in voting or site polling place paper balloting.

Mail-in voting is largely conducted for voter convenience. However, mail-in voting is extremely inconvenient for officials who provide the absentee ballots and are required to count returned mail-in results. The amount of time it takes to for the process of mailing out requested ballots and returning ballots by mail, counting these hand-marked ballots, and dealing with the controversies as to postmark regulations and arrival deadlines, make mail-in voting much less efficient than internet voting. Simply replacing the millions of voters who currently utilize mail-in balloting, converting those who do have access to the internet to i-voting, would pose no increased potential of misidentification while decreasing the turmoil surrounding mail-in procedures and ballot tabulation. It would, in fact, maintain and even enhance the convenience of not only polling officials, but also the voters. The urgency to provide i-voting for overseas personnel is a consequence of mail-in failures and inconveniences.

Critics also argue that the “digital divide” is a major deterrent to the implementation of internet voting due to a gap in access. Many make the inference, then, that this future voting system will create a defacto racial and/or economic divide. The computer haves would have an advantage over the computer have-nots. This fear led to the filing of a requested injunction to derail the Arizona online primary in early 2000. Lawyers for the Voting Integrity Project sought to protect the have-nots, voters they feared would be mainly non-white. Judge Paul G. Rosenblatt of the United States District Court in Phoenix ruled that the proposed system to include internet voting access itself was not inherently discriminatory, especially in light of all the pre-publicity as well
as the availability of the other voting systems for any voter who was a have-not or simply chose to vote by the processes that had always been in place. Judge Rosenblatt did agree that the results of ballots cast could potentially exhibit a racial divide; however, statistics reveal that all elections throughout our history have had higher percentages of white, higher income, and higher educated voters (Smith 2000). This would have to be taken into consideration when assailing the Arizona 2000 results.

So, what did the results of Arizona suggest in relation to a digital divide? There was an overall increase of 622% for the number of ballots cast in 2000 over the elections of 1992 and 1996. In two of the largely Hispanic districts located in Maricopa County, districts 22 and 23, voting increased by 828% and 1011% respectively. In Apache County, a county with a higher percentage of Native Americans, voter participation increased by 515%, an increase nearly similar to the overall voting increase (Howard, March 24, 2000). Despite a study conducted by R. Michael Alvarez and Jonathan Nagler which concludes that there was misrepresentation for voting minorities in Arizona in 2000, Judge Rosenblatt found no reason to review any appeal based on the injunction request regarding Arizona’s internet voting and its results. Legal barriers as outlined in the Civil Rights Act of 1964 prohibit discriminatory voting processes. None were found in Arizona’s 2000 election.

Ownership in home personal computers and online access has and is growing faster than any other technological advance in history, and at its current rate, would put computers in virtually all American homes at numbers comparable to the arrival of televisions twenty-times faster (Welch 2001). In January, 1999, a CBS news survey showed that only 49.2% of Americans had internet access (Alvarez November 1, 2000).
By January of 2002, 81% of the voting age population had internet access at some location (Done February, 2002). This rapid and sizable increase is no fluke. The youth of this nation are introduced to computers and the internet throughout their education. This should, with time, increase the percentages of internet accessibility and use.

Despite the fact that internet access is increasing, consideration must always be given to the potential digital divide. Voting procedures to allow alternate forms of voting must always exist. As previously mentioned, there have always been “divides” in our process of voting, like transportation issues. The “everyone will have a computer” attitude must not preclude alternate access for any voter.

No eligible voter shall be denied. Continued mail-in, on-site provided internet voting, and/or even on-site paper voting must be made available, especially at the outset of including remote i-voting. The argument that citizens who do not have remote internet access might perceive themselves as deprived, and thus “left behind” in a future of internet voting, is to say voters currently without available transportation, funds, or time to travel to a traditional polling site are “left behind”. People with these “economic or social divides” today may request a mail-in ballot, which would continue to be the case during the future of online voting. I-voting has the potential to improve voters’ access to the ballot that were previously required, due to location, to vote only by mail. It could be argued, any disdain these voters may feel for being forced to be “out of the loop”, may actually be reduced. It may become easier for a future voter without online access at home or work to walk next door to request from a neighbor to go online and cast her/his ballot. The ease of voting online has the potential to actually increase accessibility for most, and thus may create a better sense of inclusion. This is especially true for the
disgruntled voters, who, by their own accounts, are “forced” to forego the traditional polling precinct location due to economic or time restraints, or even the “waiting in line” problem at polling sites, all of which have inhibited many voters over the years.

Security concerns were met in the Arizona 2000 primary by the contracted company, election.com. The largest concern, as expressed by the California Internet Task Force and the National Science Foundation, is over the issue of intrusion. Malicious hackers could pose a threat to the integrity of casting ballots. Due to an American voting history fraught with scandals and discrepancies as to the actual validity of votes cast and vote totals produced, as recently as the 2000 presidential election, American voters have every right to fear the worse. Where there is any electronic process, there can be an electronic breach of security. One premier study on the feasibility of internet voting sponsored by the National Science Foundation in March 2001, made these conclusions about remote i-voting:

While the concept of voting from home or work is attractive and offers significant benefits, it also poses substantial security risks and other concerns relative to civic culture. Without official control of the voting platform and physical environment, there are many possible ways for people to intervene to affect the voting process and the election results. Current and near-term technologies are inadequate to address these risks (Issues and Research Agenda, March 2001, 2).

Technologically, Arizona was able to accomplish ballot security for its i-voting participants. Encryption of the transmission of a cast ballot deflected potential outside intrusion. Once transmitted, results were unreadable to an outside source and decryption for tallying results rendered voter security. The most likely threat to the security of casting an online ballot is from the moment a user on a PC engages the ballot with a personal PIN and verification status through the moment of transmission. This is the
span of time during a voting client’s access, before the transmission is entered and is changed into encrypted form. It may be likened to the actual moments someone is making a purchase online by using a credit card. Vulnerability is at the remote PC site while the client is entering information to make the purchase, prior to sending the information via a protected transmission and delivery of that information. The National Science Foundation’s report identifies this problem as integrity. The reports states, i-voting must secure that “votes should not be able to be modified, forged, or deleted without detection” (Internet Policy Institute March 2001, 11).

Thus, internet voting security revolves around similar security issues relevant throughout most transactions over the internet. Potential security risks are commonly known as viruses, worms, or Trojan horses. Unknown and unsolicited downloads can alter user awareness and intentions. Related to voting, a breach of someone’s individual PC with, for example, a Trojan Horse, presumes an outsider could alter, negate, or even possibly “steal” another’s vote. Therefore, it becomes essential that any internet voting system must include the guarantee that any malicious outside hacker attack is not just a remote threat, but technologically impractical. On-site internet voting must rely on systems that are secure from outside hackers, and technology must continue to provide the best possible guarantees against any outside intrusion when voting from any remote web site. Private companies are researching and developing potentially secure systems with the intent of being selected as providers of systems for future i-voting elections (Manjoo November 14, 2000). Governments are primed to utilize these secure systems for their elections. Working jointly, government and private companies will need to provide a secure, uninterruptible i-voting process. Initial cost may be a factor, but once a
secure system is implemented, the long term potential savings of internet voting far outweigh initial costs, not to mention the expected substantial increase in voter participation and more reliable counting of ballot results.

The California Internet Task Force, a study conducted in 2000 on internet voting, offers the following suggested procedures to prevent malicious software intrusion into internet voting:

1. *Clean operating system and voting application:* Prior to voting, the voter’s machine could be booted from a CD-ROM (or similar media) containing a "clean" operating system, with no extensions that might harbor malicious code. Combined with sophisticated scans for an infected BIOS (or equivalent on other computers), this step could virtually eliminate the possibility of malicious software during voting. This is presumably the approach that would be used for county-controlled voting machines; but such a CD-ROM could also be distributed for home voting via the postal service in response to a voter’s request for i-voting authorization.

   The application program used for browsing, presumably distributed on the same CD-ROM, would also have to be "clean". Current commercial browsers are not suitable for voting because they are particularly vulnerable to malicious software. A special-purpose web browser that does not accept extensions such as plug-ins, applets, controls, or scripts, and that is dedicated solely to voting, would be far more resistant to infection than today’s commercial browsers, and its integrity could be conclusively verified with a cryptographic hash or digital signature.

2. *Special security PC hardware:* A special, software-closed security device might be developed to be attached to the voter’s computer, e.g. through a USB port. Its purpose would be to display the ballot to the user, accept the voter’s choices as input, and perform the cryptographic operations. In effect the voting is done on the security device, and the PC it is attached to is used only as a conduit to the Internet. Since the device is software-closed, meaning its software cannot be changed, it is not subject to infection by malicious code.

3. *Closed, secure devices:* It is possible that special, software-closed, Internet-capable devices, such as network computers (NCs) or hand-held, wireless descendants of today’s cell phone and electronic organizers, may be developed for commerce and may be secure enough for voting as well.
4. *Secure PC operating systems:* Future commercial PC operating systems may be designed for greater security than today’s systems. For example, they may be composed of digitally-signed modules, allowing secure applications to exclude, as untrusted, modules of dubious origin (i.e. potentially malicious programs). Such an operating system would enable practical, secure home and workplace voting.

5. *Code sheets:* Voters could be mailed code sheets that map their vote choices to entry codes on their ballot. While voting, the voter uses the code sheet to know what to type in order to vote for a particular candidate. In effect, the voter does the vote encryption, and since any malicious software on the PC would have no access to the code sheet, it would not be able to change a voter’s intentions without invalidating the ballot.

6. *Test ballots:* Special test ballots can be sent from vote clients and checked by software at the county. The number, location, timing, and contents of the test ballots should be known by the county, but they should be otherwise indistinguishable from real ballots, so that any malicious code that destroys or changes real ballots will affect the test ballots as well. Analysis of the test ballots will enable any malicious code attacks to be detected, the locations of infected machines to be determined, the approximate time of the attack to be estimated, and the total number of votes affected to be bounded.

Note that this technique does not *prevent* malicious code attacks; it only *detects* them after the fact. Hence it must be combined with one of the previous preventative techniques. Still, it is a very powerful technique because it can also be used to detect *any* systematic cause of lost ballots, not just malicious code attacks, and because it provides a quantitative measure of the size of any problem it detects.

7. *Obscurity/complexity:* One final approach, while not sufficient for real security, nonetheless raises the cost to potential attackers. Digital ballot formats and voting software may be kept secret prior to the election and possibly randomly changed during the election, or made complex in other ways. In order to successfully carry out an attack and escape detection, malicious software authors must have a great deal of information about the internal format of the ballot and voting software. If these details are not available in advance, and/or if that information is complex, the potential authors of attack software may not have enough time to develop and distribute it during the election window. (Jones January, 2000)
The task force report maintains that security for voting is more complicated than current security used for electronic commerce. This is due largely in part to the availability in everyday commerce for a separate offline process to check and correct for errors and intrusions. Voting cannot, due to secrecy of balloting, implement this type of safeguard. Once a voter has cast a ballot, she/he must no longer be connected to that cast ballot. The report states, “The fundamental security emphasis in voting must be upfront prevention of fraud and error, with no reliance on after-the-fact correction, a much more stringent requirement than is generally necessary today for financial transactions” (Jones, January 2000). It is imperative to prevent electronic vote intrusion or fraud from the moment when ballots are accessed by voters through their completion and submission. Developing companies are aware of this, and must develop technology to solve the issue of security for balloting during its period of transaction.

Concerns about security are valid. Just as past and current problems inherent in polling place security, mail-in ballot security, and machines and “hanging chads” have presented security challenges that necessitated change, so too will internet voting present security issues that will need to be solved. Security and privacy issues for all types of internet transactions are constantly challenged, and technology evolves to protect the consumer-user. Undoubtedly, as internet voting is tested, technology as a joint effort between privately contracted companies and government agencies as their potential customers and overseers will strive to develop methods to ensure the privacy, security, and validity of internet voting procedures of the future. I-voting technology will need to meet the stringent demands vital to ensuring its success.
Chapter Five: Legislating and Formalizing I-voting

There is one basic fact which underlies all the questions that are discussed on the political platform at the present moment. That singular fact is that nothing is done in this country as it was done twenty years ago. We are in the presence of a new organization of society. Our life has broken away from the past. The life of America is not the life it was twenty years ago. We have changed our economic conditions absolutely, from top to bottom; and with our economic society, the organization of our life. The old political formulas do not fit the present problems; they read now like documents taken out of a forgotten age.

--Woodrow Wilson, 1912
From Andrei Cherney’s The Next Deal: The Future Of Public Life in the Information Age, p viii

As America modernizes, the supporters of i-voting are confident the technology, methods, and procedures will develop that will make this country’s electronic casting of ballots safe and successful. Legislators must continue to realize the need for timely and effective legislation and subsequent appropriation to allow a future that includes elections with available i-voting. National legislation for the procedures and safeguards of voting rights has had, throughout our history, an increasingly strong legacy, with the voting rights act of 1965 serving as the crowning moment of national legislation. This legacy, intended to increase participation and convenience for the electorate, may ultimately need legislation designed to support and institutionalize electronic voting. In so doing, this country’s leadership will have the opportunity to more clearly determine if the future of voting is a future best served by full and complete remote internet access during all elections for all Americans. The National Science Foundation, in its research recommendations of its Report of the National Workshop on Internet Voting, makes this

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suggestion. “It is vital, therefore, that research efforts begin immediately so that policymakers will have the requisite information to make responsible decisions regarding the deployment of Internet voting systems” (Internet Policy Institute March 2001, 3).

Appropriations for the next step toward conversion to internet voting have already begun. The most recent germane appropriation is HR 3295. Signed into law October 29, 2002, this piece of legislation provides $4 billion in federal funds to update and improve states’ voting procedures. The bill includes substantial funds to administer federal elections, a power granted constitutionally to Congress. It prescribes an Election Assistance Commission, a federal commission designed to assist, certify and test state voting systems. The important factor is that federal funding and direction exist, yet HR 3295 preserves for the states their traditional powers to implement modernization of their voting systems and procedures.

For the future of i-voting, the most important provision included in this bill is a $20 million grant for research and development to improve voting technology. Additionally, another $40 million for state protection and advocacy systems has been appropriated in HR 3295. Part three, section 271 grants research on voting technology improvements. It directs the commission “to make grants to assist eligible entities in carrying out research and development to improve the quality, reliability, accuracy, accessibility, affordability, and security of voting equipment, election systems, and voting technology” (Library of Congress, 2). The most fiscally responsible use of this appropriation would be to develop, presumably by private companies, secure computer systems for touch-screen voting and the connection of these computers to the internet. Part four, section 281 “directs the commission to make grants to eligible entities to carry
out pilot programs under which new technologies in voting systems and equipment are tested and implemented on a trial basis so that the results of such tests and trials are reported to Congress” (Library of Congress, 2). This would allow states to apply for federal funds to implement electronic voting much like Arizona accomplished during its successful 2000 presidential primary. A national movement to investigate and prepare for a voting future that includes i-voting is well-underway.

Fears by the public and public administrators fuel caution. The electronic voting debate continues to emphasize that any i-voting system must be reliable. Appropriating money for private research is certainly an important component of meeting that objective. Touch-screen computers have already proved to be reliable and efficient. Diebold Election Systems, maker of a touch-screen computer, reports “there is no guesswork as far as who you voted for”, and the screen “quickened the voting and counting process and reduced the number of ‘under votes’, ballots that are not counted because they are unreadable or otherwise defective” (Lubell May 15, 2003, 1, column 2). Touch-screen voting creates convenience in voting without risking reliability. Once the queasy are convinced of computer reliability that exists with touch-screen, the next obvious progression is for more convenient, and equally as reliable, remote internet voting. All future legislation and appropriation should have the vision and goal to develop i-voting from personal computers as this country’s potential election vehicle.

Congress, as it feels the pressure to implement i-voting, will need to increase legislation and appropriation that is essential for the future of successful electronic voting. Bills like HR 3295 and others are small steps toward appropriating the necessary funds for making the change from punch cards and levers at polling sites, to computer
touch-screens, and ultimately connections to the internet. Working with private
companies who could eventually be granted contracts to conduct electronic voting, the
states, with Congressional appropriation, could realize a more efficient voting future
process. In turn, these contracted companies would be supported and regulated during i-
voting elections by the states. Eventually, a joint venture for the introduction of i-voting
does have the potential to become the accepted and successful uniform mode of casting
ballots throughout all fifty states and the District of Columbia.

This current and future legislation and appropriation by Congress has stirred the
debate of the appropriate roles for federal, state, and local government. The issues of
states’ rights and the potential of federal intrusion and subsequent federal mandates
become paramount. Historically, over the years, the federal government has become
more active in establishing voting rights and national voting mandates. Some aspects of
the appropriating of funds to establish more uniform voting and even registration
requirements, with federal oversight, seemingly would facilitate voting procedures.

Future effective means of federal involvement in voting and registration could
have the effect of empowering more voters and make registering and voting more
convenient, both of which would assist the states. As an example, national registration
procedures have the potential to allow for collaboration of a state responsibility with
federal oversight, uniformity, and appropriation, which has the potential to make the
process more efficient and successful. It enhances the possibilities of vastly improved
and effective voting practices in this country, without decreasing essential state authority.
In today’s highly mobile society, when registered voters move, within their current state
boundaries, but also from state-to-state, they are faced with the inconvenience of re-
registering. A more national, uniform system of registration could establish links between states, helping to enfranchise mobile voters and help eliminate duplication and fraud. If voters moved, their voting registration could move with them. A uniform national registration process would have the potential to maintain voters’ registration and increase the likelihood of voter participation.

This future method of uniform registration would be best-served electronically, which would be best accommodated through federal legislation and appropriation. HR 3295 requires states to “implement a uniform, centralized computerized statewide voter registration database to ensure accurate lists” (Public Citizen, October 29, 2002, 1). Why not link state databases for ease in maintaining voters’ registration? Legislating a uniform registration process could be an essential step for implementing national i-voting procedures. It takes registration to a national process still conducted by the states.

Voting procedures arguably would be improved by some universal methodologies. As “hanging chads” and butterfly ballots exposed in the 2000 election, the need does exist to improve ballots, the myriad of ballots and voting procedures that are many times vastly different throughout the country, from state-to-state and even among neighboring counties. The many current possible methods used to mark and cast ballots, and the subsequent procedures in place for counting ballots, could be better served with one single universal type of balloting process, presumably computer-based voting at traditional polling sites.

However, once polling site computer balloting is in place, the natural progression for voting would be toward remote internet balloting. A voting future which offers remote i-voting, could, by its at-home, or in-the-office voting locations, replace the need
for most paper absentee ballots, reducing the cost and inefficiency for the states. As one example, reducing mail-in ballots has the potential to save states millions in printing, mailing, and handling costs, while at the same time, improving and securing both the timeliness and accuracy of vote tabulations, which are many times inherently problematic in mail-in absentee ballots. Ultimately, this i-voting process should be supported federally and conducted by the states.

Certainly all elections throughout the USA can be seen as “state” elections. States need not worry about losing the essential jurisdiction of the procedures and regulations for elected positions throughout their states, as well as elections for offices in counties, cities, and special districts. Moving toward a national ballot style, with federal oversight and appropriation, could result in vastly improved voting procedures. The voters would be less confused, more entrusting, and therefore more likely to vote, enhanced by the confidence that all voters share the same ballot type. This country’s sole national contest, electing the president and vice-president, both during primaries and general elections, can be viewed as state processes, since results are tabulated and processed by states to determine delegates to presidential nominating conventions as well as state electors sent to state capitals to vote during the Electoral College process. This state emphasis, this important state power, is not in jeopardy. I-voting, as a universal system of voting, should not defer state jurisdiction or power.

Arguably, i-voting has the potential to augment state power by improving the process of voting and vote counting with universal use of computers, leading toward an increase in voter participation in each state. Ultimately, what really is important is that states will maintain their power in the actual election results, not the actual procedures.
Improved procedures to secure voting results validate the entire process, strengthening the states. Other than the initial costs of putting electronic voting into place, which Congress has begun to fund, there does not seem to be any logical debate to continue the autonomy among states or counties in regards to registration procedures and ballot types and procedures.

The ultimate strength of state and local governments with its electorate is to make voting easy, accessible, and accurate, evolving to a system that is as voter-friendly as possible. An increased perception among the voters of an easier and more accurate system enhances local registrars of voters’ power. To serve the voters by developing confidence and trust is what any state or county should aspire to. This can give states the ability to combat widespread speculations of local authority inadequacies, as was evident during the 2000 Florida voting fiasco. Universal voting procedures give states and counties what they need, the processes to serve their voters as effectively as possible.

The first step, as emphasized in HR 3295, is to update voting machinery and appropriate funds for research and development into a future of electronic voting. The next step is to continue to address improved voting procedures, constantly evaluating the possibilities of a future process that implements a national uniform electronic voting process. Encroachment on states’ power is not the primary issue. Foremost, the ability to secure the voters’ participation and trust is. The best method for capturing the voters would be to ensure easier, safer, and more reliable voting procedures. States stand to ultimately benefit. The nation stands to benefit. Voters could experience the benefits of an improved voting system.
Chapter Six: The Possible Effects of I-voting and the Future of American Elections

Not to vote is to withdraw from the political community. Compared to demographically matched non voters, voters are more likely to be interested in politics, to give to charity, to volunteer, to serve on juries, to attend community school board meetings, to participate in public affairs. It is sometimes hard to tell whether voting causes community engagement or vice-versa, although some recent evidence suggests that the act of voting itself encourages volunteering and other forms of good citizenship. So, it is hardly a small matter for American democracy when voting rates decline by 25 percent or more.

From Robert D. Putnam’s, *Bowling Alone*, p 35

Elections are an American tradition, as noted by Robert Putnam, which encompass more than just electing this country’s leaders. As elections continue to produce reduced voter participation, one could envision a future election including i-voting that dramatically changes the landscape of the voting experience and subsequently voter turnout.

Imagine a future national i-voting election, say the election of 2012:

*Across the United States, in 2010, some state and local elections were conducted online. These were viewed as the last in a series of “test cases”, resulting in substantial increased voter turnout in various states and districts. At the conclusion of these mid-term elections, Congress passed and appropriated the means to conduct one hundred percent-available, national online voting in preparation for this country’s local, state, and national elections to be held on November 6, 2012, what many believe will become a momentous, even historical election day.*
This bill, initiated by two term Democratic President John Kerry and overwhelmingly endorsed by the Democratically-controlled House of Representatives and Senate, was sponsored by House Speaker Nancy Pelosi (D-CA/8) and strongly supported by Senate Majority Whip Hillary Clinton (D-NY). HR 5030 passed with tremendous bipartisan support in December, 2010. Congress was buoyed by public opinion responses of voters who had already voted online, who reported they passionately supported this new method of voting they utilized during the 2010 elections. Congress was also spurred by the outpouring of those throughout the country who have not, as yet, had online access, who indeed were requesting the new voting format. Appropriation of the necessary funds for all states to implement i-voting for the 2012 elections was a quick and measured response by legislators.

This election, highlighted by the presidential contest between Democrat Governor John Edwards (NC), Republican Senator George Allen (VI), and Independent Senator Gordon H. Smith (OR), is about to become the nation’s first national attempt at i-voting. All national, state, and local races will be conducted with i-voting access in every ward and precinct. By most all political pollsters’ current surveys, this new process has the potential to break the voting turnout (which will undoubtedly become known as the voting “turnin/login”) record, with most experts’ estimates predicting participation in the range of 75% of all eligible voters nationwide. This projected voter turnout would dwarf the 60% national voter turnout in 2010. That turnout itself was a substantial increase when compared to the previous decades-long decline in election participation, a turnout that had fallen to an average low of 40% of eligible voter participation for non-presidential election years. The most recent presidential election-year contest of 2008,
where less than 5% of voters nationwide had i-voting access, was a modern-day record-low turnout of only 48% of eligible voters.

For the election of 2010, i-voting access was available for approximately 32% of those who voted nationally. The most promising increase was realized in California, where 100% of the voting precincts in the nation’s most populous state had i-voting capabilities. California recorded a 69% voter turnout. In comparison to 2008, a presidential election year with very limited i-voting access, that realized only a 45% California turnout, experts agree the overriding reason for the dramatic turnaround in voter participation in the Golden State was attributable to the increased access of i-voting. Just months from the 2012 elections, there is every reason to believe that this growing participation trend will indeed continue for this election, as well as for elections of the future.

Some states, like Oregon, had originally criticized the national trend to universalize voting, but once Oregonian officials realized i-voting was to become this country’s future mode of voting, it was a state determined to be on the cutting edge. Oregon tested i-voting in select counties as early as the 2006 primary elections, and, like its neighbor California, had transformed to 100% precinct capability for the 2010 elections. Oregon was the sole state where voters had passed a statewide proposition of mail-in only balloting in 1998. Officials reported that in the 2010 elections most Oregonians exercised remote i-voting, but in opening “polling places” like city halls and school sites once again, any Oregonian unable to cast a remote i-voting ballot, could partake in the ritual of going to a designated polling place where computers were prepared to receive their votes. Paper mail-in ballot use decreased from 100% of those
voting in Oregon in 2004, to 8% of those voting in 2010. Of the remaining 92% of Oregonians who chose to vote online, 85% of them voted from a remote location, presumably home or work. The other 15% of i-voters utilized on-site polling places equipped with online computers.

Overall voter turnout incrementally increased in Oregon as i-voting access increased. Election turnout went from 52% in 2004, to 57% in 2006, and increased to 64% in 2008. In the most recent election of 2010, 74% of Oregonians cast ballots. Experts agree i-voting has the opportunity to produce similar increases throughout the country with the availability of i-voting.

Along with i-voting access, another reason for the predicted upsurge in voting participation is that along with appropriating funds to make i-voting universal for the 2012 election, Congress also passed legislation in 2010 to make voting registration a uniform process wherein all states developed compatible data bases of registered voters. States were granted funds to implement universal registration procedures and develop online registration access. This registration process has already substantially increased the numbers of eligible voters who have registered. It has also made re-registering easier and more reliable when voters relocate in or out of state, change their names, or decide to make party affiliation changes.

The most promising surge in increased registration has recently occurred among new young voters who were prompted to register online. Eighteen year olds were mailed a notification to access online voting registration within thirty days of their respective birthdays. With the assistance of, and promotion by, their local schools, nearly 85% of 18 year olds registered during 2011. This, along with the excitement and ease of i-
voting, has seemingly captured a previously apathetic group, this bloc of younger voters.

The California Task Force report of 2000 predicted this potential increase in youth involvement once i-voting was implemented:

Since two major groups of low-propensity voters—those who are young 18-25 year old students or busy professionals who do not find the time to participate are also two of the more Internet savvy segments of the population, we anticipate that the introduction of Internet Voting, specifically remote Internet Voting, would provide a positive effect on turnout (Jones 2002, 21).

It is hoped the youth will, in turn, become lifelong participants at the polls, generating newfound and continual promise for the future of American elections. The internet has “the potential to bring a record number of low propensity young voters into the democratic process for the first time” (Gibson 2001-02, 582).

With the arrival of national i-voting, ballots are now universal. The methods of voting that will be utilized in the 2012 elections, remote internet balloting, polling site internet voting, and traditional paper absentee ballots, are the same processes, the same ballot styles, for Dade County, Florida, as for Humboldt County, California. In the aftermath of the infamous 2000 elections, the plea for effective, national ballot styles has finally been realized.

Uncharacteristically for American politics, the introduction of i-voting seems to be supported from the right and from the left. The Republican Party support for this new process is generated by the belief that i-voting might favor its candidates, with the confidence that many of its party loyalists are daily computer-users, have busy lifestyles and, they feel, are more likely to participate online. GOP presidential candidate Allen
has embraced i-voting, stating in campaign speeches that it can help illicit the support he needs which can reverse the last 8 years of a Democratic White House.

However, the Democrats and their presidential candidate Edwards, counter with the belief that more of their traditional party members who, in previous elections, “have stayed at home”, will “stay at home” and voice (key) their support. The Democrats feel, additionally, they will realize increased support and will capture votes from a more active 18-25 year old voting bloc. They believe “a portent of its (the internet’s) future role is the age group to which it most appeals. According to a Newsweek poll, 61 percent of teenagers say they surf the net. Not surprisingly, people under 30 are the most likely to have access to the Internet” (Davis 1999, 8-9). Both major parties are making calculated statements in support of i-voting. This leads one to envision that future legislation, with an emphasis on i-voting elections, will receive the necessary attention and appropriation.

Many “third” parties are pleased with i-voting possibilities that may, they feel, increase their support by mobilizing previously disgruntled voters. Also, as the internet becomes an accepted method for voting, it also becomes a more reliable venue for their respective parties and their political aspirations. They will not need to rely on traditional media news sources, but can supply information on websites that may serve to inform and possibly recruit members. “Third” parties are viewing the internet, as it grows for voting purposes and campaign information services, as an opportunity to increase their political influence by gaining votes for their candidates and becoming more visible.
For Senator Gordon H. Smith, running as an independent, non-aligned presidential 2012 candidate, he no longer needs to contend with state laws that previously excluded presidential candidates who were not party affiliated, and/or other quirks in state ballot qualifications. Along with the new national registration process and universal ballots, rules to qualify as a presidential candidate are also national, although states have retained ballot qualification powers over state and local offices. Smith has been able to have his candidacy qualified for and voted on in all fifty states. As a true national independent candidate, he believes his chances are increased and, subsequently, he will be viewed as a viable contender in this election. All three major presidential candidates seem to agree that 2012 will be a record-breaking year for voter turnout, a trend they see as beneficial to each of their candidacies and generating a renewed hope of an involved and growing electorate.

Is this 2012 scenario of national i-voting which could result in increased voter, participation science fiction or scientific inevitability? How plausible is i-voting? Will it be the future of American elections? Given systematic and deliberate steps toward this scenario of the 2012 election, i-voting is on the horizon of future USA elections. The decision this country is faced with is whether i-voting is essential to the future of American democracy. It has challenges and potential shortfalls. Despite obstacles, implementing the most secure i-voting process possible may be the best option for this country. Once the challenges have been adequately met, i-voting could increase participation in future elections, spurred largely by the nation’s youth.

For the American i-voting experience, limited as yet in scope, to advance beyond the successes of Arizona’s 2000 Democratic primary, overseas military online voting,
and other local test cases, to national online voting, the challenges of specific concerns and procedures must be met. Two studies on the implementation of i-voting, conducted by the National Science Foundation in 2001 and the California Internet Task Force in 2000, suggest a very methodical, definitive approach to the ascendancy to i-voting. There is no room for blunders. The Internet Task Force concedes, “the implementation of Internet voting would allow increased access to the voting process for millions of potential voters who do not regularly participate in our elections” (Jones January 2000, 1). However, the report stresses caution. It does suggest an approach of disciplined progress to create a movement with the best possible chances of success. “To achieve the goal of providing voters with the opportunity to cast their ballots at any time from any place via the internet, this task force believes that the elections process would be best served by a strategy of evolutionary rather than revolutionary change” (Jones January 2000, 1). The National Science Foundation concluded, “Many jurisdictions around the nation are currently facing once-in-a-generation decisions about their procedures. It is critical that election officials make informed decisions based on a solid and current body of knowledge” (Internet Policy Institute March 2001, 3). What is demanded for the success of this new system is sustained, gradual, and deliberate investigation leading toward the potential of national i-voting.

Initial steps have been accomplished. Already national legislation has appropriated “more than $1 billion . . . for buying electronic voting systems, including optical scanners and touch-screen machines, that eliminate ballots written or punched on paper or tallied by mechanical equipment” (Lubell May 15, 2003, 1). Congress is seemingly primed to make the commitment toward a future of electronic balloting.
private companies develop and provide the touch-screen machines, companies like Diebold Election Systems and their AccuVote-TS touch screen, the private sector will continue to research and develop the capabilities to meet the needs and produce the required technology for the essential equipment to implement a future of i-voting. As legislation mandating increased online voting capabilities is being implemented for overseas military and civilian voters, who previously were essentially limited to mail-in balloting, the reactions from state officials who are preparing to implement these i-voting systems for 2004 remain confident. Paul Craft, the manager of Florida’s Bureau of Voting Systems declares, “Obviously we have concerns (about overseas i-voting), but we are very confident that the system will work” (Albanesius June 20, 2003, 2). This must be viewed as not only a necessary convenience for overseas personnel, but one step in the deliberate process of developing national i-voting.

Once primed and ready for universal i-voting access, the process should be headed by the Administrator of the Office of Electronic Government, a position created by HR 2458 in November, 2002 (Legislative Archives of the 107th Congress November 22, 2002). This agency will contract a private company, or possibly a combined effort from multiple companies, to provide the technology and hardware needed for i-voting. The technology must be safe and secure, a process which will be overseen by the OEG Administrator and all involved government agencies. The public will not accept easy access at the expense of suspected vote tampering. However, i-voting, implemented nationwide, that is perceived as secure and convenient, has the opportunity to invigorate the electorate, recapturing this country’s historical, and today very essential, pursuit of increased voter participation.
The ability to develop the validity and security of i-voting is a challenge that presumably can be met. The 2001 study by the National Science Foundation concluded that remote internet voting remains a major risk, that technological problems are yet a major concern. They also conceded that the likelihood the i-voting will become a part of our voting future (Mathews March 7, 2001). Taking a cautious approach toward i-voting is necessary and vital to the process. However, it must be kept in mind that past voting practices, magnified by the 2000 elections in Florida, have never been fail-safe. Progressing cautiously with i-voting is a consequence and requirement not only of technological questions and social concerns, but also due to past voting practice inadequacies. But caution should not necessarily breed inaction. “In this digital age, there would seem to be an obvious fix to the problems created by Florida’s voting machines: Internet voting technology” (Diop November 2002, 1). Penelope Bonsall, Director of the Federal Commission’s Office of Election Administration, an office that sets guidelines for voting processes nationally, reports on recent computer use for elections that “the possibility of vote tampering has always existed and the possibilities were (ultimately) no greater with computers” (Lubell May 15, 2003, 2). Deliberate steps, contending with the problems inherent in i-voting, must be taken to ensure a future of i-voting will have the best chances of success.

With this country’s methodical approach in the direction of i-voting, election officials can not afford any semblance of vote fraud or vote tampering. A safe and secure balloting future that incorporates i-voting may increase participation, yet an insecure and unreliable balloting future, no matter how accessible, would most likely backfire and potentially deflate participation. Director Bonsall, a member of the National Science
Foundation’s study and report, downplays many doubters’ fears on the potential of an i-voting fiasco. “If you probe a little further, the chance of these failures, the risk of that (hackers, computer melt-downs) happening wide-scale in a national election is almost nil” (Lubell May 15, 2003, 2).

The vital technological questions, as remote and easily-solved as they may seem to many, as outlined by both the California Task Force and the National Science Foundation are debated by almost any i-voting supporter and doubter. Solving these issues is integral to the deployment of i-voting. These issues of (1) universal access, (2) voter identification, authenticity, and privacy, and (3) vote security are paramount. Collection and tabulation of votes must be reliable. Each issue has potential technological solutions.

(1) Universal access

I-voting relies on voter access to a computer. At no foreseeable time can elections abandon paper absentee or mail-in ballots. This paper voting procedure must always be available, although with remote internet access, voting via a computer may decrease the need for those who traditionally have voted by absentee ballot. A voter on vacation in France or Chile, or a voter who resides in remote USA locations, may find it easier to frequent a café with internet access, vote from a hotel room via a personal laptop, or may have and use internet access at home or work. Remote i-voting for most absentee voters who have internet access during elections would actually become more convenient, as opposed to filling out a paper absentee ballot and returning it through postal services. Yet, mail-in ballots must remain available as an alternative to on-site
and remote i-voting for anyone who decides not to vote via computer or simply does not have on-site or remote access.

Although the percentage of people without online access declines daily, voting access must be universal. At the outset of i-voting, polling places must exist with site-based online computers available. Selected polling sites, schools, city halls, libraries, or even the more traditional fire stations and churches, must offer online computers on election day. Computers may already exist at these sites, or computers will be needed to be brought in by election officials for each election. They will be ready for walk-in public use. Computer voting will provide the necessary simple on-screen instructions. On-site voters will visit the identical website as the remote users, accessing the same universal ballot styles. This identical ballot would also be used for mail-in ballots which would be marked with a pencil and returned.

With all three options, access is available to any voter. Just as traditional polling places previously provided punch cards or lever-machines, now they provide computers that simplify the process and efficiently streamline the tabulation of cast ballots. Although it is widely believed that the convenience of remote i-voting will be selected by most voters, universal access is guaranteed by continuing to offer computers at polling sites, as well as the ability to request and return mail-in ballots.

Concerns will continue to be expressed about the potential for a digital divide, or the leaving behind of both the computer/internet non-owner and/or the computer inexperienced/illiterate. This can be addressed with on-site computer balloting. In this sense, only the methodology of polling places will have changed. Voters have access at
polling sites, as they always have, where computer touch-screens will become a more user-friendly, simplified process.

Any past ballot process has required simple instructive tutorials as to the process, with poll workers available to answer questions. With a future where computer screens instruct voters graphically, even the tasks of reading and following directions can be made easier than with punch card instructions. On-site polling places must still supply poll workers who can assist in instructions. Screens can direct users to many language options, facilitating language barriers. As was true for Arizona’s online elections in 2000, the digital divide will not become a factor. A voter selecting to forego voting out of fear of computers is less likely to occur than a voter skipping an election due to language or literacy barriers, or perceptions of bogus results due to the now infamous “hanging chad”. Any voter who still feels “computer phobic” can alternatively select mail-in balloting.

Voting procedures, simplified with remote or on-site i-voting, will better facilitate all voters of all capabilities. For the deaf and/or blind, available on-site technology can produce the visual or audio assistance needed. For many handicapped or underprivileged voters, the availability of remote access potentially increases ease of access in voting. With these multiple modes of voting, voters from all backgrounds and lifestyles should find voting more accessible.

(2) Voter identification, authenticity, and privacy

The California Internet Task Force report provides a step-by-step process for the introduction of i-voting. Voter identification and reliability are paramount to i-voting
success, and the step-by-step process is meant to ensure technological success. The report suggests implementing a two phase approach. The first phase allows for supervised use of internet voting machines at polling sites. The second phase involves remote internet voting. Phase one is being accommodated currently with touch-screen voting across many counties of the country, utilizing computers with the improved capacity to count votes. The computers are purchased and protected by election officials, securing both the casting of the ballot and its results. The method to transport encrypted data to a centralized collection bank is a widespread technological practice; one that i-voting will need to incorporate.

With polling places replacing levers and paper ballots for electronic on-site voting by introducing touch screens, tabulating voters’ results and recording those who have voted becomes more reliable and efficient, potentially resulting in voter confidence. Denise Lamb, Director of the Bureau of Elections in New Mexico, a state which has utilized computerized touch-screen machines since the late 1980’s, offers her experience with computer voting. “I think any voting system, if it is programmed and used properly, can be very reliable. They (computerized machines) are very reliable, and voters like them” (Lubell May 15, 2003, 5).

Phase two as suggested by the Task Force, introduces remote internet voting, the expansion to ballot access from home or work via personal computers. Protection for personal computers relies on a secure operating system and a web site secure from any outside intrusion or corruption. Technologically, phase two requires more fail-safe processes. The California Task Force’s deliberate approach is credible; however, phase
one has begun in many voting locations. Is the implementation of phase two this
country’s next deliberate step in voting procedures?

If the USA does adopt phase two, remote internet voting, how does it ensure
success? First, voters must only be able to vote once in each election. As was previously
stated, i-voting should be conducted from both remote and on-site locations, as well as
mail-in ballots. The technology exists that if voters cast remote ballots at any time during
the allotted voting window (possibly a four day window up-to-and-including Election
Day, Saturday through Tuesday), they will be identified by a PIN and a second secure
identifier, possibly their mother’s maiden name. Voters can access over the allotted
period of time twenty-four hours a day, and once they have completed voting, their
availability is locked out, their PIN used up, thus eliminating duplicate or multiple voting
by any method.

On Election Day (Tuesday), polling sites are open for those selecting to i-vote on-
site, in person. In order to solve the reliability and security issue of “one person, one
vote”, there must be a separate data bank for those who have completed voting, as there
have been in elections like the 2000 Arizona primary. Once voters have cast their votes
at any allowable time and by any method, those voters are locked out from any second
possible access.

A separate data bank tabulates and stores all voters’ submitted votes. Once these
two results are separated and recorded, the two banks will be designed so as not to allow
any future alignment, securing the privacy of voters’ ballots. One data bank tabulates
votes cast. The other data bank locks out voters from repeat or multiple voting. Data
from the two banks are no longer possible to be aligned or retrieved, which could
compromise voter privacy. All these safeguards will maintain voter identification, authenticity, and privacy.

(3) Vote security

For many, of even greater concern, is how to develop an i-voting system that is secure from outside intrusion, hackers, Trojan Horses, worms, and the like. Voters must maintain the right to a secret ballot not only following voting, but also during voting. No intrusion by officials, private companies, or hackers can be allowed. Governments have made this type of security a top technological priority for years. National security information storage and transference utilizes technology developed and protected as fail-safe as possible, and when unauthorized intrusions have been attempted, improvements in the systems have always occurred. This development of these systems is exactly what is essential to make i-voting just as secure. The same credence for high level security for the State Department, for example, is the same level of security needed for the future of i-voting. As was provided in the 2000 Arizona primary online election, protection will be guaranteed by using a series of redundant servers and electrical power systems. Potential outside hackers must be kept at bay.

In the National Science Foundation’s Report, the conclusion regarding reliability of security offers a guarded approach:

Research is needed on how to best design Internet voting systems, both poll site and remote, to be robust with respect to a large number of possible technical failures, including failures of voting clients, the communications path, and servers. Research is needed on architectures for poll-site voting systems in which each precinct has no single point of failure, and has a infinitesimal probability of losing any legitimately cast votes. The most important reliability consideration of all is that votes be captured accurately in redundant and non-volatile storage.
within the voting client (Internet Policy Institute March 2001, 36).

The active period for outside intrusion for the entire i-voting process is small, generally a one-week or less window. Testing the system must remain confidential, and once readied, the system is activated for just the few days of allowable voter access. Coupled with a short window of ten to fifteen minutes when users will access the web site, complete their ballots, cast and record their votes, outside intruders have very little time to intercept voters’ balloting. Intrusion into the collection data banks is also a potential threat. Any contracted company must offer secure and reliable systems so that no outside intrusion will occur for transmitted vote results. Officials as overseers must be confident that no outside or inside intrusion will occur. These technological developments for a secure system that will not risk the integrity of ballots accessed by the voter through transmission and collection are essential. Implementation of i-voting is contingent on the confidence level of a secure technology.

The importance of maintaining the highest standards for the technology of the i-voting process for each election is as important as any high-security national priority, and should be given similar emphasis when it comes to technological research and development by contracted private companies and governmental programmers. The technology to block outside intrusion for the transmission and collection of votes cast electronically must be attained as it has for other secure uses of electronic transmissions.

The California Task Force recommends that voters from remote locations will need to include simple forms of security steps to minimize their risk of intrusion. The government-protected voting web site may need to provide a clean, uncorrupted operating system and/or internet browser designed for use only for the short time
required for each user to vote during an election. Downloading this secure procedure would presumably prevent intrusion and also block advertising or “pop-ups” during voting that could be considered electioneering (Jones, January 2000). Once the final step to voting has occurred, the ballot is retrieved and the results transmitted. Should a voter be interrupted during the voting process, she/he may re-enter with the same process. Technologically, the process of i-voting must be made compatible for all ranges of PC’s and simple enough for even the most novice of computer-users to understand and use.

The access to cast online votes is available for four days and then is completed, recorded, and shut down. Intruders have very limited time to apply viruses. With a four-day voting period, (Saturday through Tuesday is suggested), hopefully internet providers will not be overloaded with users. Allowing voting to take place over two weekend days as well as two weekdays may accommodate differing voters’ lifestyles, and naturally disperse the casting of votes over the allotted four days. Precautions must be taken so that a user does not receive a “busy signal” from the voting web site. The frustration of being “put on hold” has the potential of losing voters. The technology to provide quick, easy access is paramount to i-voting success. The best technology has to offer must be incorporated to ensure that i-voting will be secure.

(3) Collection and tabulation of votes

Encrypted voting results should be sent to centralized locations for total vote counts. Results from all locations are electronically compiled and reported under the watchful eye of election officials. Once all voting has ended, including absentee results that were electronically recorded, results are automatic. Results will be available
immediately and vote totals reported. Recounts of voters’ ballots will no longer be an issue, since the tabulation process is electronic and universal. The only delaying prospect is transferring vote counts to one centralized collection bank, which programming can accommodate, and in essence, should become automatic and flawless. This expediency and reliability of future results is the final added piece of the i-voting process that has the potential to increase voter confidence and subsequent voter participation.

For presidential elections, the process of the Electoral College vote will take place some six weeks later based on computerized results from each state and the District of Columbia. Increasingly throughout our history of presidential elections, the votes cast by electors every four years have generally become an election process afterthought, until the 2000 presidential election and its electoral vote drama. With efficient, universal electronic vote results, the Electoral College may once again return to its obscure role in the election process.

In summation, throughout all voting wards and precincts in the United States, should i-voting be implemented, the following basic procedures are suggested:

*Registration should be available online. States will transfer the existing roles of registered voters to computerized data banks. This will allow interfacing by states to streamline accurate registered voter lists. First-time online registration is verified by submission of the registrant’s mother’s maiden name (or an alternate means of personal identification), used again as verification when the voter casts her/his ballot. Previously registered voters will submit their personal identifier when voting by any of the three methods allowed in the upcoming election (or at their next initial election when exercising their vote). This is information that will be entered and stored on voters’ registration files on computers in data banks for all future verifications. (PINs could change each new election cycle.) Eventually all registered voters will have these two means of identification, PINs and a personal identifier.
*Ballots, unique to regional candidates and offices, will be universal in style. Sample ballots will be mailed to each registered voter outlining three options: to vote online from a remote location, online from any designated polling place offering computers, or the process to request an absentee, mail-in paper ballot. Eventually, technology could be developed that would allow online access for sample ballots, as well as printable mail-in ballots. These sample ballots would give voters their current PINs, needed to vote by any of the three methods.

*Remote Internet Process*
Voters would have the opportunity to vote over the internet during a defined voting window, possibly a four-day time period up-to-and-including election day, from a remote location using a government-secured web site and the aforementioned assigned PIN sent to voters via USA mail. Using this Pin, voters are verified by entering their personal identifier. This will inhibit vote-stealing. A secondary, secure retrieval system, allowing voters the ability to recapture any lost or misplaced PINs must be available upon voter request via the internet or by phone, secured once again by required verification. Voters who do select remote i-voting log on to a government-run, secure web site, follow simple instructions in the language of their choice, enter their PINs and personal identifiers, access their regional ballot, vote, and enter their results by completing their balloting as instructed. Help screens online as well as phone hotlines must be made available for anyone experiencing difficulty with the ballot, their remote computer, or any aspect of the process. Voters are informed that when they complete that final step, their vote is recorded and there is no “going back”. Their PINs and their access are subsequently locked out.

*On Site Internet Process*
Voters without access to a computer or the internet, or any voter who prefers, will be able to go to any regional polling place where computers with very simple, touch-screen voting procedures are available, during traditional polling place times, on election day. Polling site voters’ PINs will be required, which can be retrieved, with proper voter identification at polling places via computer data banks. (This provides access for any voter neglecting to bring his/her PIN to the polling place.) Voters will need to enter their secondary personal identifier, on the polling site computers, which will access the web site and a ballot. Again, once a voter completes balloting, her/his PIN is locked out from the possibility of duplicate voting and the results are automatically recorded electronically.
*Mail-in Paper Process*

Voters may request and vote by absentee, paper mail-in ballot with defined time constraints that are determined nationally for all counties. Returned mail-in ballots must be received by the close of polling sites on election day. The returned absentee ballots are scanned onto computer data banks to be added to the official vote results. Officials in charge of scanning mail-in ballots will enter the voters’ PINs from data banks and use the secondary identifiers written-in by the voter on the paper ballot. This will allow electronic access to the vote collection-system and validate authenticity, while also prohibiting multiple balloting. The hand-completed ballot is then scanned. Election overseers must be present for the scanning of all mail-in ballots, and viewing of the actual completed ballot itself, or any on-screen viewing, must not be allowed in order to maintain voter privacy.

*All the above methods of voting, must be augmented by simple, explicit instructions. Locally-manned help hotlines must be made available twenty-four hours every day at the outset of the remote voting windows until all the polls close on election day.*

*All votes are eventually cast and counted electronically. Through programming, voters are not allowed to vote more than once despite which of the voting methods utilized. Two encrypted data banks record results, one storing data of those who have “used up” their vote in the current election, and therefore are “locked out”. The second data bank records the actual results, voting returns that are collected locally, routed on for centralized storage and collection of statewide results and national vote totals. Results are then electronically decrypted, making vote-counting 100% accurate, and the results available immediately following poll closures from all locations across the United States.*

It must be emphasized that the technology needed to implement i-voting must be as fail-safe as possible. Appropriating the necessary funds, developing a course of action, and continuing “test runs” are the strides this country will need to take to bring i-voting into the future of American elections. The future of increased voter participation depends largely on voter confidence generated by a successful, across-the-nation, i-
voting first run. The election of 2012, which was discussed earlier in a utopian scenario, is not that far away. All roads lead to an election then, or in elections beyond, where i-voting could become the accepted and successful method for a majority of Americans to once again partake in an essential for any representative democracy, the right and privilege to vote.

Increasing voter participation can be viewed as desirable for a representative democracy. Why else would the enfranchisement movement within the United States have been vital to this nation’s development? This movement toward universal suffrage reveals a national priority to allow all to vote. Coercing voters to participate is not the answer. Yet increasing access, regardless of a voter’s background, ability, or involvement in the political process, to all who are eligible, is this country’s legacy. Easier access through i-voting, as it potentially increases participation, is a continuation of that legacy. With more involvement by the public during elections may come more involvement in this country’s politics and candidates.

Early elections in the United States were conducted by the most rudimentary means imaginable. Some early forms of voting utilized a “show of hands”, or the placing of beans in a preference box. Progress was made to make balloting secret by implementing the “Australian Ballot”, a form of voting where candidates were listed on paper, and generally by a mark with an ink pen, voters cast their ballots. Yet, counting votes in this process was at the honor, accuracy, and reliability of the counters as they “tallied” marks on paper.

Eventually voting evolved to “machine-counting” processes. Many of these early “machines” were large and cumbersome, difficult to transport to polling places, and
equally difficult to maintain as workable and therefore, reliable. Due to these inconveniences and inadequacies, most county election officials turned to the punch card system, still the most common voting procedure in the United States at the outset of the twenty-first century. This system has experienced its challenges and failures. It involves cumbersome stacks of cards, prohibitively long and involved ballots, and the now-infamous “hanging chad” and “butterfly ballot” controversies. More and more counties, supported by federal appropriation, are moving to computer-based voting, currently touch screen computers. The next step should be to evolve to ballots cast from remote computers via the internet that are recorded in centralized data banks. This modern process should create better access, more ease in voting, and ultimately a tighter, more secure system of counting and recording vote totals.

This nation’s very disciplined, yet determined, move toward to i-voting, and eventually to remote i-voting, can serve not only the purpose of improved balloting methodology, but more importantly, as has been shown, can generate a substantial increase in participation of the American electorate. Robert Putnam in *Bowling Alone* develops the idea that America needs to reinvest in its “social capital,” its sense of community and civic virtue. Increase in social capital could occur when communities prepare to, and eventually do, cast ballots. Prior to and after voting, more citizens may potentially discuss this commonality, and have some pride in having participated in this important democratic process. There may be a greater sense of the importance of voting as a community involvement. Putnam views the internet as one means of developing this sense of community, of developing social capital. He says, “. . . it seems reasonable to assume that their (telecommunications) net effect will be to enhance community, perhaps
even dramatically. Social capital is about networks, and the Net is the network to end all networks” (Putnam 2000, 171).

Given the cautions from observations presented by both the National Science Foundation and the California Task Force in their reports, future election decisions are critical. The balance of realizing that one, i-voting has the potential to increase voter participation and possibly political involvement, and two, the understanding that the potential risks that exist to election integrity and security, implementing i-voting needs continued research and development. Once accomplished, the era of safe and secure universal i-voting must be considered likely for the future of American elections, all across the United States, for all Americans. It provides the best opportunity for a future of increased voter participation, a future with a renewed sense of this important civic commitment, a ritual sacred to the forces of democracies.
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