Lehigh University/
Muhlenberg College Institute of Public Opinion

2006 Survey of Public Attitudes Toward Electronic Voting in Pennsylvania

KEY FINDINGS REPORT

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KEY FINDINGS:

1. Pennsylvania voters overwhelmingly believe paper verification of touch screen electronic voting systems is important.

2. The commonwealth's electorate also overwhelmingly believe every Pennsylvania county should use the same kind of voting machine.

3. While the majority of voters believe electronic voting systems have been carefully tested and are secure from tampering, more than a third believe it would be easy to rig the systems to alter election results and almost two thirds do not have a lot of trust that they will accurately count their vote.

4. Overall, voters trust electronic voting machines much less than they do ATM machines, but more than they trust making internet purchases securely or being accurately screened at airport security checkpoints.

METHODOLOGY: The following key findings report summarizes data collected in a telephone survey of 523 registered voters in the Commonwealth of Pennsylvania between September 18 and September 25, 2006. Individual households throughout the state were selected randomly for inclusion in the study. The sample of phone numbers used in the survey was generated by Genesys Sampling Systems of Ft. Washington, PA. Interviewing was conducted by PMI of Easton. This number of completions results in a margin of error of +/- 4.3% at the 95% confidence interval. However the margin of errors for sub groups (i.e. women, Republicans) is larger due to smaller sample size. Percentages throughout the survey have been rounded to the nearest percentage, thus many totals in the results will not equal 100. The data has been weighted to account for an under sampling of male registered voters. The survey questionnaire was designed by Christopher Borick, Ph.D. of the Muhlenberg College Institute of Public Opinion, Daniel Lopresti, Ph.D. and Associate Professor of Computer Science and Engineering at Lehigh University, and Ziad Munson, Ph.D. and Assistant Professor of Sociology at Lehigh University.

ANALYSIS

As the 2006 general elections approach this fall, the new touch screen electronic voting systems being used throughout Pennsylvania have once again become the subject of increasing controversy and political debate. The results of a Lehigh University/Muhlenberg College survey of commonwealth voters provide evidence of an electorate that sees both promise and peril in the introduction of touch screen voting systems in the Keystone State.

Pennsylvania has joined dozens of states in purchasing touch screen electronic voting systems to comply with the 2002 Help America Vote Act (HAVA), which was designed to phase out lever and punch-card machines after the Florida "hanging chads" debacle during the 2000 presidential election and recount.

Recently, however, Professor Edward Felten and his colleagues at Princeton University confirmed the fears of many computer experts and political watchdog groups by demonstrating that hackers with just basic computer knowledge could infect one of the most widely used such systems with a virus that could change vote totals and spread to other machines without detection. Last week, Senators Barbara Boxer (D-Calif.), Christopher Dodd (D-Conn.), Russ Feingold (D-Neb.) and John Kerry (D-Mass.) introduced emergency legislation in the Senate that would provide paper ballots for voters who were reluctant to use new electronic voting machines.

For their part, Pennsylvania voters express moderate levels of confidence in the new systems and believe they will make voting easier. At the same time, however, they overwhelmingly support ensuring the machines show voters paper verification of the votes they cast. Thus when it comes to Pennsylvania's new electronic voting machines the commonwealth's voters appear to be following Ronald Reagan's famous adage "trust but verify."

PAPER VERIFICATION

Government officials within the commonwealth and throughout the nation continue to wrangle over the need and even the desirability of implementing a Voter Verified Paper Audit Trail for votes cast by electronic voting machines. Pennsylvania voters themselves, however, overwhelmingly want such paper verification. Overall, 81% of voters believe it is important that touch screen electronic voting systems be equipped with the capability to show voters a paper verification of the votes they cast, with over half (56%) indicating that it is very important that a paper trail be part of the voting process.

TABLE ONE

"How important is it to you that touch screen electronic voting systems are equipped with the capability to show voters a paper verification of the votes they cast?"

Very Important	56%
Somewhat Important	25%
Not Too Important	7%
Not Important at All	7%
Not Sure	5%
Refused	1%

While the issue of paper verification has been a partisan one among both national and Pennsylvania politicians, the survey results indicate bipartisan support for paper verification among Keystone State voters . As Table Two shows paper verification remains equally important to both Republicans and Democrats (as well as among men and women) in the commonwealth.

TABLE TWO

Importance of Paper Verification of Electronic Voting by Partisan Affiliation and Gender of Voters

	Important	Not Important	Not Sure
All voters	81%	14%	5%
Republicans	83%	14%	2%
Democrats	81%	13%	7%
Men	82%	14%	4%
Women	79%	13%	7%

These results suggest that paper verification need not be a divisive issue, and that the state's voters are in agreement that paper verification of votes should accompany the introduction of touch screen electronic voting systems in the commonwealth.

TRUST

While voters see paper verification as important, this doesn't mean they reject electronic voting entirely. Indeed, 77% believe the machines will make voting much easier than it has been in the past. In addition, 78% believe the machines in Pennsylvania have been carefully tested to be sure they count votes correctly, and 77% believe that all possible safeguards are in place to prevent any form of tampering.

Whether or not voters are correct about the certification and security of the systems, it is clear voters do place some trust in the new voting technology but also want that trust backed up by verification. This view reflects the importance placed on the voting process in a democratic system as well as knowledge of past problems with voting fraud and a general wariness of technological innovation.

In comparing the public's trust in electronic voting with their trust in other widely used technology, voting machines come out somewhere in the middle. As Table 3 shows, overall people trust voting machines much less than they do ATM machines, but more than they trust financial transactions on the internet or even airport security systems.

TABLE THREE

Overall Trust Levels in Different Technologies

	A lot	Some	A little	None	Unsure
Electronic voting machines	34%	27%	9%	14%	15%
ATM machines	50%	24%	7%	19%	1%
Secure internet purchases	18%	34%	13%	32%	3%
Email remaining confidential	17%	27%	15%	38%	2%
Airport security screening	24%	29%	18%	24%	6%

Table 3 also shows that 15% of voters are still unsure how much they trust electronic voting systems, many more than are unsure about how much trust to place in other technologies such as ATM machines. These findings suggest that many people have adopted a wait and see attitude toward the relatively new electronic voting systems, and thus how the systems are implemented in the coming months and years will have an important effect on the public's long-term acceptance of electronic voting. Coupled with attitudes toward paper verification, these results indicate that implementing electronic voting without voter-verified paper results has the potential to further undermine the public trust in the voting process.

One potential source of public concern over voting technology is the patchwork system of different rules, regulations, and systems that make up the Pennsylvania electoral system. More than 9 out of 10 voters (91%) agree that each county in the state should use the same kind of voting machine.

Voters might also be unsure of electronic voting simply because it is a new technology. Three out of five (60%) of Pennsylvania voters have not used electronic touch screen voting in the last year, and only 11% of voters report that they normally use such systems. By contrast, well over half of voters (57%) use ATM machines either frequently or sometimes. Those technologies people trust even less than electronic voting machines are also those technologies with which they have less experience: Less than half of voters (47%) frequently or sometimes purchase products on the internet and only a third of voters frequently or sometimes go through airport security. Familiarity with technology tends to increase confidence with the systems, especially if people perceive prior experiences to have been successful.

CONCERNS ABOUT TAMPERING

As the Princeton Univerity experiments have illustrated, the safety and security of electronic voting systems remains controversial. While both the state and voting system manufacturers contend the electronic voting machines are secure and very difficult to tamper with, many individuals have called into question the security of the voting technology. The survey results indicate a substantial divide among commonwealth voters regarding the difficulty and technological skills needed to alter voting machines. As can be seen in Table 4, about one third (34%) of Keystone State voters believe that it is easy to rig touch screen electronic voting machines, with a near equal amount (36%) disagreeing with this position.

TABLE FOUR

"It is easy to rig touch screen electronic voting machines to alter election results"

Agree	34%
Disagree	36%
Not Sure	31%

Interestingly, the substantial degree of public doubt regarding electronic voting machine security is present even though Pennsylvania voters overwhelmingly agree (77%) that all possible safeguards have been put in place to stop tampering. In fact, of the 77% of state voters who feel all possible safeguards are in place, almost 1 in 3 still feel it's easy to rig voting machines. Such findings indicate that many commonwealth voters may simply feel electronic voting systems are inherently open to tampering and therefore state safeguards cannot prevent such occurrences. These attitudes also underscore the overwhelming support among voters for a paper verification system that would provide a check on the results produced electronically, allowing for the option of a truly independent recount of all votes cast

CONCLUSION

While much of the state's attention is on the numerous political races that are occurring this fall, the issue of public confidence in the new electronic voting systems in Pennsylvania is fundamental to the very democratic nature of the political system. With major controversies surrounding the accuracy of election results during recent years, it is important that the state's voters trust that their ballots have been counted properly and that the election results are an accurate depiction of voter preferences. The results of this survey indicate that Keystone State voters find many attractive qualities regarding the advent of touch screen systems in the commonwealth, but also harbor significant concerns regarding the accuracy and security of the new electronic voting machines.

<u>Lehigh University/Muhlenberg College</u>
<u>2006 Survey of Public Attitudes Toward Electronic Voting in Pennsylvania</u>

Method- Telephone Survey
Population- Pennsylvania Registered Voters
Time Frame – September 18-25, 2006
Sample Size – 523
Margin of Error - +/- 4.3% at 95% Level of Confidence
Totals may exceed 100% due to rounding effects.
The data has been weighted to account for an under sampling of male registered voters.

Q1. Please identify which category your current age is located in.
18-24……….3%
25-34……….6%
35-44……….10%
45-54……….17%
55-64……......25%
65 and older ..18%
Refused…….20%
Not Sure…….1%

Q2. Which of the following best describes your current voting status?
Democrat……..41%
Republican……38%
Independent…..7%
Another Party…0%
Not Registered…10%
Not sure………..1%
Refused…………3%

Q3. Did you vote in the 2004 Presidential election?
Yes………….75%
No…………..24%
Not sure…….1%
Refused……..0%

Q4. Do you trust making accurate transactions with an ATM machine?
Trust it a lot………….50%
Trust it some…………24%
Trust it a little………..7%
Trust it not at all……...19%
Not sure………………1%
Refused……………….0%

Q5. Do you trust purchasing products on the internet securely?
Trust it a lot………….18%
Trust it some…………34%
Trust it a little………..13%
Trust it not at all……...32%
Not sure………………3%
Refused……………….1%

Q6. Do you trust e-mailing personal information in a confidential manner?
Trust it a lot………….17%
Trust it some…………27%
Trust it a little………..15%
Trust it not at all……...38%
Not sure………………2%
Refused……………….1%

Q7. Do you trust getting accurate information from internet searches?
Trust it a lot………….31%
Trust it some…………37%
Trust it a little………..7%
Trust it not at all……...22%
Not sure………………2%
Refused……………….1%

Q8. Do you trust having your vote counted accurately when voting on a touch-screen electronic voting machine?
Trust it a lot…………34%
Trust it some…………27%
Trust it a little………..9%
Trust it not at all……...14%
Not sure………………15%
Refused……………….1%

Q9. Do you trust being accurately screened by airport detectors and x-ray searches?
Trust it a lot………….24%
Trust it some…………29%
Trust it a little………..18%
Trust it not at all……...24%
Not sure………………6%
Refused……………….0%

Q10. Do you trust people in your neighborhood?
Trust it a lot………….57%
Trust it some…………36%
Trust it a little………..5%
Trust it not at all……...1%
Not sure………………1%

Q11. Do you trust people you work with?
Trust it a lot………….41%
Trust it some…………32%
Trust it a little………..5%
Trust it not at all……...5%
Not sure………………11%
Refused……………….6%

Q12. Do you trust people at your church or place of worship?
Trust it a lot………….73%
Trust it some…………17%
Trust it a little………..3%
Trust it not at all……...2%
Not sure………………2%
Refused……………….3%

Q13. Do you trust the police in your local community?
Trust it a lot………….54%
Trust it some…………37%
Trust it a little………..7%
Trust it not at all……...1%
Not sure………………1%
Refused……………….0%

Q14. Do you trust local news media?
Trust it a lot………….17%
Trust it some…………47%
Trust it a little………..26%
Trust it not at all……...9%
Not sure………………1%

Q.15. Do you trust local government officials?
Trust it a lot………….11%
Trust it some…………48%
Trust it a little………..30%
Trust it not at all……...8%
Not sure………………2%

Q16. Do purchase products on the internet?
Frequently………….12%
Sometimes………….35%
Rarely……..………..16%
Never……………...36%
Not sure……………0%
Refused…………….0%

Q17. Do you e-mail?
Frequently………….40%
Sometimes………….23%
Rarely……..………..6%
Never……………...30%
Not sure……………0%
Refused…………….0%

Q18. Do you use ATMs?
Frequently………….31%
Sometimes………….27%
Rarely……..………..12%
Never……………...30%
Not sure……………0%
Refused…………….0%

Q19. Have you gone through security screening at an airport?
Frequently………….8%
Sometimes………….25%
Rarely……..………..31%
Never……………...35%
Not sure…………….1%

Q20. Have you conducted online banking?
Frequently………….13%
Sometimes………….13%
Rarely……..………..11%
Never……………...63%
Not sure…………….1%

Q21. Have you used the internet to find information?
Frequently………….46%
Sometimes…………25%
Rarely……..………..4%
Never…………..…...24%
Not sure……………1%

Q22. Which of the following voting machines have you normally used to vote in Pennsylvania elections?
Lever machines…………………………….63%
Optical scan machines………………………1%
Punch cards…………………………………9%
Touch screen electronic voting machines…11%
Paper ballots…………………………....…8%
Other……………………………………… 1%
Not sure…………………………………… 3%
Refused……………………………………..4%

Q23. Did you use a touch screen electronic voting system to vote in during the past year?
Yes………38%
No……….60%
Not sure….2%
Refused…..1%

Q24. How confident are you that a touch screen electronic voting systems will accurately count votes?
Very confident………….33%
Somewhat confident……39%
Not too confident………9%
Not confident at all……..7%
Not sure…………………12%
Refused………………….1%

Q25. How secure are touch screen electronic voting systems from tampering?
Very secure………18%
Somewhat secure….41%
Not too secure……..14%
Not secure at all……8%
Not Sure……………19%
Refused……………...0%

Q26. How important is it to you that touch screen electronic voting systems are equipped with the capability to show voters a paper verification of the votes they cast?
Very important………..56%
Somewhat important…..25%
Not too important………7%
Not too important at all…7%
Not sure…………………5%
Refused………………….1%

Q27. In general, who do you trust more to make sure that votes are counted in an accurate manner?
Republicans………17%
Democrats………..15%
Independents……...5%
Other/Neither………40%
Not sure……………22%
Refused…………….2%

Q28. Touch screen electronic machines will make voting much easier than in the past.
Strongly agree………43%
Somewhat agree…….34%
Somewhat disagree….7%
Strongly disagree…….5%
Not sure……………..11%
Refused……………….0%

Q29.The chances of election fraud will be greater if more people vote on touch screen electronic voting machines.
Strongly agree………13%
Somewhat agree…….24%
Somewhat disagree….29%
Strongly disagree…….17%
Not sure……………..16%
Refused……………….0%

Q30. Each county in Pennsylvania should use the same kind of voting machine.
Strongly agree………72%
Somewhat agree…….19%
Somewhat disagree….4%
Strongly disagree…….2%
Not sure……………..3%
Refused……………….0%

Q31. I trust that all electronic voting systems used in PA have been carefully tested to be sure they count votes correctly.
Strongly agree………43%
Somewhat agree…….35%
Somewhat disagree….6%
Strongly disagree…….5%
Not sure……………..11%
Refused……………….0%

Q32. And it is easy to rig touch screen electronic voting machines to alter election results.
Strongly agree………14%
Somewhat agree…….20%
Somewhat disagree….24%
Strongly disagree…….12%
Not sure……………..31%
Refused……………….0%

Q33. Tampering with an electronic voting system would require a large degree of technical skill. Only a highly trained computer expert intent on breaking the law could do this.
Strongly agree………23%
Somewhat agree…….21%
Somewhat disagree….18%
Strongly disagree…….14%
Not sure……………..23%
Refused……………….0%

Q34. I trust that all possible safeguards are in place to prevent any form of tampering with e-voting systems.
Strongly agree………40%
Somewhat agree…….37%
Somewhat disagree….9%
Strongly disagree…….7%
Not sure……………..8%
Refused……………….0%

Q35. When I store information on my computer, I trust that it will be safe – that it will not be accessed or changed by someone without my knowledge.
Strongly agree………31%
Somewhat agree…….31%
Somewhat disagree….8%
Strongly disagree…….8%
Not sure……………..18%
Refused……………….4%

Q36. How many times have you taken a trip involving commercial air travel in the last 6 months?
Just once……………..19%
2-3 times……………...11%
4-10 times……………..3%
More than 10 times……2%
No trips on an airline….65%
Not sure……………….0%

Q37. First, what is your marital status?
Single………12%
Married…….69%
Separated……1%
Divorced…….4%
Widowed…….9%
Partnered…….0%
Not Sure……..4%
Refused………1%

Q38. What is your highest level of education?
Less than high school…………….4%
High school graduate…………….39%
Some college or technical school..26%
College graduate (4 year only)…..16%
Graduate or professional degree….16%
Refused…………………………0%

Q39. Which of the following categories best describes your racial identity?
White/Caucasian………88%
African-American……..5%
Hispanic……………….3%
Latino………………….1%
Asian…………………..1%
Mixed-race…………….1%
Not sure………………..1%

Q40. Which of the following categories best describes your annual salary?
Under 20,000………..11%
20,000-40,000……….21%
40,000-60,000……….23%
60,000-80,000……….11%
80,000-100,000………7%
Over 100,000…………6%
Not sure………………2%
Refused………………19%

Q41. Gender of Respondent (not asked)
Male……..48%
Female……52%