ELECTION TECHNOLOGY & SECURITY

RON BANDES

NCSL FUTURE OF ELECTIONS CONFERENCE

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IN Volv EmEnt IN ElECTIONs

• CyberSecurity member of PA Legislature’s SR394 Committee on Voting System Technology
• VVSG CyberSecurity Public Working Group
• Election Verification Network, by invitation
• Election laws review committee, League of Women Voters PA
• Task force to design Remote Ballot Marking System for the National Federation of the Blind
• Judge of Election in Mr. Rogers’ Neighborhood (WQED polling place)
• President, VoteAllegheny (a non-partisan, election integrity organization)
• Presenter on Election Security to FBI Infragard, PA Dept of State, B-PEP, and others
HOW DO YOU KNOW?

https://www.arbornetworks.com/blog/insight/cloud-ddos-mitigation-how-do-you-know-its-right/
HOW DO YOU KNOW...

• that you’ve been hacked?
• that you haven’t been hacked?
• who hacked you?
• that increasing voter convenience improves turnout?
• that modernization is a good thing?
Get bumpers out of cribs, doctor group urges

By Melanie Monroe Rosen, Parenting.com

Updated 3:20 AM ET, Tue October 18, 2011


TO PERFORM RESEARCH AND ANALYSIS, YOU NEED DATA

• Computer operating systems offer logging. It must be configured to log the events that are meaningful.

• Computer applications may also log important events. Buy only applications that do.

• Computer logs are like hearsay evidence. For strong evidence we want source documents that are prepared by hand or verified by a person.

• Voter-marked paper ballots provide strong evidence in elections.
TWO THIRDS OF PENNSYLVANIA’S 67 COUNTIES USE DRE SYSTEMS IN ALL OR SOME PRECINCTS

• DREs without a voter-verifiable paper record do not provide strong evidence for audits and recounts

• Even with a voter-verifiable paper record, most voters don’t examine it

• Some vendors think that Pennsylvania likes DREs and wants new ones
  • We don’t

http://www.luzernecounty.org/country/departments_agencies/bureau_of_elections/using_the_iivrtronics_voting_system
NEW VOTING SYSTEMS MUST BE VERIFIABLY SECURE

• Provide security features
  • Strong evidence of voter choices, like paper ballots
  • Logging of other important events

• Provide features to verify security
  • Logging the right events
  • Secure ballot storage
  • Chain-of-custody
  • Proper use of cryptography
YOU CAN’T JUST BUY SECURITY

• It’s not enough that your voting system has the right security features.

• You must use those features correctly.
  • It does no good to log events if nobody examines the logs.

• You must have secure procedures (operational security).
BUT YOU DO NEED MONEY
SPEND IT WISELY

• Money from county, state, and federal governments
  • to buy voting systems with good security features
  • to hire or contract with security experts to help you establish secure procedures
  • to continually perform procedures in a secure manner
  • to update your procedures in consideration of the developing threat landscape

• Don’t rush the purchasing process like we did with HAVA funds
  • Make vendors understand your needs, and make them improve their products to fulfill those needs
ARE MY SYSTEMS SECURE?

• Wrong question!

• There is no 100% security.

• Ask “how secure are my systems?”
  “Which threats are my systems protected against, and which not?”
  “Are my system and procedures resilient in the face of software flaws or malicious attacks?”
WHY IS THIS IMPORTANT?

• Secure, verifiable systems can provide voters with evidence and ASSURANCE

• In the absence of assurance, you’ll have conjecture, rumors, and distrust

• Some races are worth a lot of [campaign] money

• Russia matters:
  • Experts agree that Russia will interfere more deeply in the future
  • They have no allegiance to any one American political party
WHAT PENNSYLVANIA IS DOING

• The PA Department of State is seeking collaboration with nationally recognized security experts to establish new standards for PA certification of voting systems.

• Closely following developments in Colorado regarding Risk-Limiting Audits, which provide more efficient, more meaningful ballot audits.
WHAT YOU SHOULD BE DOING

• Hire or contract with recognized security experts
  • Develop security standards for voting systems
  • Develop secure procedures
  • Follow secure procedures
  • Monitor (audit) that secure procedures are being followed
  • Revise standards and procedures as conditions change

• Start saving for new voting systems

• Buy voting systems that support meaningful audits—Internet voting is not ready
CONTACT ME

Ron Bandes
President, VoteAllegheny

RBandes@cn9.com

(203) 524-3989