Panel: Voting System Manufacturers Look to the Future
NIST/EAC Future of Voting Systems Symposium

February 26, 2013

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**Pre-Election**

- India
- State of Gujarat
- Austria
- Ukraine
- OSCE/CEC
- USA
- Ventura County, CA
- Canada
- Halifax, NS
- UAE
- USA
- Santa Clara County, CA
- USA
- Washington, DC

**Election Day**

- USA
- Santa Clara County, CA
- Canada
- City of Edmonton
- Ethiopia
- Argentina
- Peru

**Post-Election**

- USA
- State of North Carolina
- USA
- Los Angeles County, CA
- The UK
- The Philippines
- Norway
- Spain
- Costa Rica
- Ecuador
- Russia
- USA
- State of Colorado
- Australia

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**e-election platform**
Challenges of Current System

- Possibility for Disenfranchisement
  - Long Lines
  - Voter Confusion
  - Human Error Potential
  - Coercion/Intimidation
  - Accessibility / Usability Issues
- Fraud Potential
- Expensive
  - Hardware-based
  - Paper-centric
Examples of processes that have been revolutionized by software & online technology:

- Shopping
- Banking
- Education
- Photography
- Securities Trading
- Printing

It is time for governments / election officials to also take advantage of online technology.
As society and culture has changed, voting has adapted. 
  • We must continue to foster this continuous improvement in election technology.

A more diverse, dispersed electorate must be served.

Federal government recognized this need with the implementation of HAVA and the MOVE Act.

There is a great need for accessible, usable voting solutions that are also secure:
  • Everyone has the right to cast to cast a ballot, privately, securely and without assistance.
    • Mobility Challenged / Immobile /Home-bound
    • Blind & Visually-Impaired / Macular Degeneration
    • Neurologically / Psychologically Impaired / PSTD

The evolution continues.
Online Voting Overview

Cryptographic Technology Available Today

- A secure, more accessible and efficient voting option
- A system that allows registered voters to opt-in and vote on an internet-connected device securely and confidently
- Technology currently exists to:
  - Authenticate that the voter has the right to vote
  - Confirm that the ballot was submitted correctly and properly counted
  - Assure the privacy and the sanctity of the anonymous vote
  - Ensure the integrity of the election
1. Ballot is encrypted using asymmetric cryptography.
2. The voter is provided with a counted as cast voting receipt.
3. The ballot is securely stored in the tamper-proof digital ballot box.
4. The ballots are decrypted by the Election Authority using a mixing process.
5. Voters can verify that their vote was counted.
• Providing an additional voting method
• Less human error potential
• Available for voters who “opt-in”
• Uses existing technology
• Can be implemented in small-scale pilots, over time
• Possibility of increased voter turnout
• Allows jurisdictions to “plug & play”, utilizing component solutions from multiple providers:
  • In-polling place voting equipment
  • Electronic pollbooks
  • Electronic ballot delivery solutions
  • By-mail balloting
  • Voter registration systems
  • Election Night Reporting
  • Auditing tools
• SOE utilized EML during 2012 elections for some EBD customers.
• SOE works with data output from all major voting equipment providers with ENR solution; CDF would make process more efficient.
Challenges

- Perceptions of insecurity
- Possible changes required of voter verification process – Voter ID laws
- Federal & state certification process
  - Current VVSG do not specifically address online voting technologies.
  - Current certification processes address tabulation systems but do not address individual voting channel options live internet voting / electronic ballot delivery or ancillary devices like electronic pollbooks.

- Voter Education
- Overcoming inertia
• Educate the public
• Demonstrate new technology in a variety of locations and formats
• Provide opportunity for state & local elections officials to participate in the implementation
• Independent verification – before, during and after election