The Usability of Electronic Poll Books

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• What is NIST?

• Usability Group
  – User-centered measurement and evaluation R&D
    • methods, guidelines, and standards
NIST Voting Program

• Voting system standards R&D
• Collaborate with EAC and support TGDC
• Standards Work
  – VVSG 1.1
  – VVSG test assertions
NIST Voting Usability & Accessibility

- VVSG Section 3
- VVSG test assertions & test methods
- Next generation U&A roadmap
- Electronic pollbook usability
Electronic Pollbooks @NIST

• Working with IEEE Voting System Standards Committee (VSSC/1622)
  – Electronic Pollbook Working Group

• Usability Project
  – Started Summer 2014
  – Collaboration with Center for Civic Design
State of Electronic Pollbook Use

• Presidential Commission on Election Administration (PCEA) report
  – “E-pollbooks can make a singular contribution in resolving registration problems at check-in stations”

• Diverse innovations in SW & HW design

• Gaps in electronic pollbook usability literature
  – Decentralized standards and requirements
  – Minimal guidance on usable design
Usability Project Goals

• Goal
  – To help ensure electronic pollbooks are designed with good usability and accessibility for poll workers, voters, and election officials
• Landscape analysis
• Fill gaps
• Focus on usability and interactions, not
  – Election administration
  – Voter registration practices and databases
  – Voter identification laws and statutes
  – Security of electronic pollbook technologies
Usability Project Data Sources

• NCSL
  – Report on *E-Poll Books in the States*
  – Election codes prohibit, omit, allow, or require use
  – State approval, certification, single system
• Discussions with state and local election officials about electronic pollbook use
• Met with vendors for system demos
• Piloting reports
Types of systems

• Hardware
  – Laptop
  – Tablet
  – Custom

• Software
  – Windows
  – iOS
  – Android

• Peripherals
  – Standalone system (e.g., built-in camera)
  – Add-on accessories (e.g., barcode reader)
Methods of Use

• Primary functions
  – Check-in voter
  – Mark as “voted”

• Impact on election usability
  – Update voter & voter history records
  – Real time election monitoring from election office
    • Line management
  – Election day audits & reports

• Integration into workflow of election processes
Testing the Usability of EPBs

• Poll worker (user) interaction
• Effectiveness
  – Common and infrequent scenarios
• Efficiency
• Satisfaction
Testing the Usability of EPBs

• Common poll worker (user) task
• Voter check-in
  – Find voter
  – Confirm voter identity
  – Capture voter signature (or other authentication)
  – Issue ballot (or activation materials)
  – Mark voter as voted
Testing the Usability of EPBs

• Infrequent poll worker (user) tasks
  – Handling newly registered voters
  – Checking voter addresses
    • Recently moved voters
    • Updating addresses
  – Handling voter in wrong polling place
  – Handling voters marked for mail-in ballots
  – Processing “Jr.” & “Sr.” voters
Testing the Usability of EPBs

• Additional functionalities
  – Opening polls
  – Closing polls
  – Loading DB records on device
  – Using the “central command”
  – Line auditor
  – Built-in help manuals
Electronic Pollbook Usability Project

• Outcomes
  – Report on landscape analysis
  – Visualization of electronic pollbook usage
  – Usability testing protocol (for EOs)

• June workshop with subject matter experts
QUESTIONS?

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