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U.S. Election Assistance Commission  
July 21, 2015 Public Meeting

Testimony of  
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Maryland State Board of Elections

- I. Opening Comments
  - A. Thank you to Chair McCormick, Vice-Chair Hicks, and Commissioner Masterson for inviting me to speak at today's public meeting and funding research to improve the election process for voters with disabilities
  - B. I am pleased to share with you with today how Maryland voters benefit from accessibility research funded by the U.S. Election Assistance Commission
  
- II. Online Services
  - A. Like many states, Maryland offers voters a variety of online services.
    - 1. Voter look-up website
    - 2. Polling place locator
    - 3. Online voter registration
    - 4. Online ballot delivery
  - B. When developing these systems in-house, we strove to make these services as accessible as possible
    - 1. Written so that they would be compatible with screen readers
    - 2. Used a vendor to conduct an accessibility review
    - 3. Made improvements based on this review
  
- III. But....the help we received in 2013 was critical and made a tremendous impact on the systems' usability and accessibility
  - A. State law required that we offer an accessible tool but we were already on that path and conduct usability and accessibility testing
  - B. We knew that we needed help with the testing
    - 1. We already had a relationship with the University of Baltimore (which previously received EAC funding to recruit college students as poll workers).

2. We asked our contact at the University of Baltimore if they knew someone that could help us with the usability and accessibility testing
  3. Learned that the University had a Usability Lab and lead researcher – Dr. Kathryn Summers – was an EAC grant awardee
    - a. Create an open-source online ballot template that voters use with their own devices
    - b. Used principles of plain language and plain interaction to create a universally usable ballot
    - c. Result of this grant is the “Anywhere Ballot”
- C. At the same time, we were approached by a representative of Carnegie Mellon in California, another EAC grantee
1. Unique position of having “extra” EAC grant funds and wanted to work directly with election officials to improve accessibility
  2. Carnegie Mellon team had technical expertise that proved to be extremely useful
  3. Paired Carnegie Mellon with the University of Baltimore team for a tremendous team
- D. Lastly, on-going relationship with the National Federation of the Blind, which is headquartered in Baltimore
1. NFB and UB agreed to work together on the review of the online ballot delivery system
  2. Although not funded by the EAC, the NFB was an important partner in the effort and brought another perspective to the research
- E. What did this team do?
1. Solved one of the biggest challenges – making the ballot data malleable for the programmers
    - a. Ballot data is an export from the voting system central database
    - b. It was very rigid...couldn’t change the font (all caps), size (too small), alignment, etc.
  2. Applied lessons from the “Anywhere” ballot to our ballot marking device. They provided feedback on color and navigation based on their experience with testing
  3. Simplified sentence structure and word choices to improve readability
  4. But it was a lesson in “usability is not a science”... received contrary advice from team members

- a. What color should we use to alert users to important information without scaring them?
  - b. One team didn't like pink but the other team did.
  - c. Red is apparently a "scary" color, but pink can "alert" users to important information without "scaring" them
- F. UB conducted similar type of testing they used for their EAC grant work – iterative accessibility testing
  - 1. 1<sup>st</sup> round at UB's usability testing lab – very beneficial
    - a. We made changes based on what the testers found and then tested again to see if issues was resolved
    - b. Used eye tracking software, which meant we could watch where on screen the testers were looking
    - c. Quickly realized that testers were not even looking at the instructions
  - 2. 2<sup>nd</sup> round – testers used a computer of their choice
    - a. UB lab monitored testing and provided feedback
    - b. Enable testers to use system in familiar circumstances
- G. Result . . . an tool accessible to most voters with disabilities
  - 1. Meets Web Content Accessibility Guidelines (WCAG)
  - 2. Usable with most current operating systems and browsers
  - 3. Accessible with most commonly used screen readers
  - 4. Making system accessible for voters with low literacy or cognitive disorders means improved usability by all voters

#### IV. EAC Funded Projects Can Help....Today

- A. Grantees can help fill your knowledge gaps
  - 1. We knew about accessible web design but designing an accessible website is not just a technical issue. . .
    - a. Colors matter
    - b. Wording of instructions important
    - c. Shapes (curved edges better than square edges) and placement of buttons improve usability
  - 2. Lucked out that we already had an EAC grantee in our State – always helpful when you don't have to explain the election business
    - a. Can't say enough about UB's testing team led by Dr. Kathryn Summers
    - b. Expanded our view of what building an accessible website means
  - 3. Carnegie Mellon team literally fell into our laps
    - a. Grateful that the UB team agreed to a partnership

- b. Technical expertise was critical
    - 4. National Federation of the Blind – helped with testing, recruiting testers, and developing testing protocol
  - B. Design system with usability and accessibility from the beginning
    - 1. While we initially designed the system with our version of “accessibility” in mind, UB taught us that building an accessible website is more than making it work just with screen readers
    - 2. An accessible website is not just a technical endeavor – it’s about learning how to write instructions, understanding how colors can affect voter behavior, and putting instructions where people need them
  - C. Impact can be widespread
    - 1. We applied to the online voter registration system what we learned with the online ballot marking tool
    - 2. Created an on-going relationship with the researchers. They are vested in the election process and continue to provide us help
  - D. While some research is geared to future election technology, some research can be used now! Maryland’s online ballot marking tool is proof of that
- V. Thank you again for the opportunity to share how Maryland benefitted from prior EAC’s grants to improve accessibility, and I’m happy to answer any questions