Voting: User Experience, Technology and Practice

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ABSTRACT

This panel brings together usability and voting experts to discuss voting user experience in American governmental elections. Technological improvements and voting debacles have made this a special time for improving voting user experience. Can technologists improve the confidence citizens have in the voting system? What are the roles of teaching materials, registration processes, ballot design, polling place practices, equipment manufacturer relationships, and other human computer interaction processes in elections? Voting officials and politicians are eager for improvements in voting.

This panel includes speakers from government and the CHI community to present legislative perspective, usability evaluation approach, administrators' view and behavioral science's suggestions for voting interface evaluation, design and deployment.

Keywords

Voting, Computer Human Interface, Ergonomics.

INTRODUCTION

Voting user interface has traditionally been designed by people who are voting professionals. Voting officials are typically appointed and make decisions locally. Their approach has been to use their considerable experience and relationships with knowledgeable voting manufacturers to improve voter experience. Voting manufacturers bid on contracts to sell their voting systems and use their cross-jurisdiction experience and ability to meet budgets and deadlines.

Until now usability tests have not been part of the Federal Election Commissions (FEC) standards [4]. Systems are evaluated in the process of voting. At a recent workshop on voting technology [1], the voting community embraced how usability professionals might greatly improve voting machine human interface. Even with varied backgrounds in voting, usability professionals brought ideas to the manufacturers and voting officials, which they are trying to incorporate. Think what the CHI community can do when we get deeply involved in voting?

Summary of Panelists' Positions

Eric A. Fischer

The Federal Role in Election Administration

With the enactment of H.R. 3295, the Help America Vote Act of 2002, this year may be remembered as a turning point with respect to the nation's election system. H.R. 3295 creates a new federal agency with election administration responsibilities, sets requirements for voting, voter-registration systems, other aspects of election administration, and provides federal funding. It does not supplant state and local control over election administration.

A central issue is what role the federal government should play in addressing the concerns that have been raised about voting systems.

What level of federal funding will be made available to states for upgrading voting systems? H.R. 3295 provides more than $3 billion over 3 years to replace voting systems and meet requirements. However, those are authorized amounts and actual allocations will depend on appropriations.

What should the federal role be in the development of the next generation of voting technologies, in the development of standards, and in the testing, evaluation, and certification of voting equipment? H.R. 3295 substantially enhances the federal role in stimulating improvements in voting technology. It provides funding for research and pilot programs, directs the EAC to perform specific studies on several aspects of voting technology, including usability, and provides an explicit statutory basis for voluntary

federal voting system guidelines and certification programs.

Conny McCormak

"And you thought everyone votes the same..."

My perspective draws from 20 years of voter experiences in LA County, Dallas, San Diego and around the world. I will describe the issues surrounding the production of the thousands of different ballots for the different precincts and languages in LA County. How can we maintain a registration database to keep up with LA precincts where 25% of the population might change where they live yearly? We try. I will also speak to issues of registration, ballot design, voting machines, voting machine introduction, polling place administration, and education throughout the voting system.

Ben Bederson

Bringing Computer Usability approaches to Voting

Computer systems are fundamentally different than mechanical systems in their transparency. In addition, usability of touch screens is fundamentally different than specialized input devices. These issues must be addressed explicitly by voting system manufacturers and considered in their purchase.

In the current push to improve voting technology, a number of new computer-based systems have been recently introduced. The counties of Maryland have begun purchasing Diebold AccuTouch-TS systems. I helped to evaluate them through a usability study with over 400 participant subjects, and an exit poll with over 1,000 voters. I will discuss our findings as well as comment on the larger issues of computer-based voting systems and how they compare to more traditional mechanical systems.

Clifford Nasss

The Centrality of Perceptions of Voting

Given that voting is a *voluntary* behavior that citizens are asked to *repeat multiple times over many years*, the success of the voting process critically depends on voters' *beliefs and feelings* (b&f) about the voting process. Because it is impossible for voters (or anyone else) to determine whether their opinions of candidates and issues were correctly allocated to the actual final vote count, it can be argued that voter's b&f about the voting process are more important for the long-term health of the democratic process than the reality of the vote (although the two are related). These b&f can be affected, positively or negatively, through the design of voting interfaces (and processes).

We should support the following beliefs and feelings:
1) Voters b&f that they **can** understand and execute the voting process. They can perform the mechanics of voting and have access to all permitted information.
2) They b&f that they will not make mistakes.
3) Voters enjoy voting.
4) Voters b&f that they understand and execute correctly.
5) Voters b&f that their vote will be recorded and relevant.
6) Voters b&f that the voting interface does not influence the particular candidates.
7) Voters b&f that all personnel and social structures in the voting process want them to vote.

Ted Selker

Voting: a primer in usability problems

There continue to be problems getting to voting systems, choosing candidates, reviewing and changing choices and knowing choices have been recorded in a vote. User interface research can improve using computers as the reliable automatic tabulating machines of voting. To date the usability and reliability of Direct Record Electronic (DRE) voting machines have trailed paper ballots [2]. We must fix this.

Although the machines collect votes automatically, people make mistakes using computer voting interfaces [3]. The user interfaces of many voting machines are difficult to master. For example, people trying to un-vote must frequently push on the same button that was used to vote originally. There may be no prompt or cue to link action with consequence. When DRE's present one race per screen voters can forget which race they voted for. Full-view voting machines have the opposite problem allowing voters to get lost in the interface and not realize where they have or have not voted. Surprisingly these problems exist on virtually all DRE interfaces.

Some improvements are simple, like making candidate selection obvious, giving clear feedback, making it easy to know what has been done and how to change selections. Beyond the graphical interaction horizon are many other voter-experience challenges. Just teaching administrators and voters what they need to make the system trustworthy is important. The voting area is a fertile ground for usability improvements.

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