Oops! They Forgot the Usability: Elections as a Case Study

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An election is a perfect usability case study. It bring together large numbers of diverse voters, an unfamiliar interface and an outcome that shapes the future of our society. With such a seeming simple task, usability was not on the curriculum for elections officials, However, despite the focus on technology and security, it was poor information design and usability in the 2000 Palm Beach ballot that taught us all new words like "chad" (hanging or pregnant). This opportunity mirrors the challenges usability advocates face every day. New voting system standards from IEEE may include usability requirements for the first time, but the real challenge is persuading elections officials to include information design, user interface skills and usability as a routine part of the job of running an election.

Introduction

I am here in three different roles.

First, I am an interaction designer and a usability professional. I spend my professional life like many of you trying to make sure that people, especially the people who use our products stay in the center of our design radar.

Second, I am the president of UPA. In that role, my focus is on finding ways to develop and promote our profession. This is a job made more difficult by the fact that when we do our work well, its easy to wonder what all the fuss was about. Things that work seamlessly don't create headlines.

Finally, I am the director of the UPA Voting and Usability project, and a federal appointee to the Election Assistance Commission (the EAC). This is probably the most exciting thing I'm working on, even though much of my time is spent on the slow and painstaking business of standards and government. It's certainly the

most timely – especially this week. I'll talk a little bit at the end about what we've been able to accomplish – and the work yet to do.

What I'd like to do this evening is talk about how these three roles intersect and what we might learn about usability and user-centered design – and advocacy - when we look at it through the lens of the current controversies over elections.

Getting on the bus

In the world of elections, there are two kinds of people. First, there are the old hands – people who have been in the election world for years. Then there are people like me, who got on the bus four years ago when we were stunned and then galvanized by the 2000 presidential election and watching a relatively simple usability miscalculation throw our country into a crisis.

In the US, we have been able to take our democracy pretty much for granted. About half of us showed up at the polls every few years, cast our ballot and thought little else about it. We certainly didn't think much about how our voting machines were purchased, or whether our voting process was really accessible. And we certainly didn't know terms like "residual vote" or "chad."

Why worry about usability?

How hard is it to put an "x" next to your candidate's name? Most people manage it just fine!

One of the biggest challenges in talking to people about the usability of voting systems is getting any attention for the issue at all. People tend to gloss over usability, saying things like, "How hard is it to put an x next to your candidate's name - most people manage just find," This is often followed a personal anecdote such as, "My grandmother has no problems with our system."

In some ways, it's hard not to agree. The act of voting should be *that* simple. This may be one of the most important places for universal access to the system and for a the best possible usability of the user interface. The user group includes almost every citizen of voting age, no matter what their physical disabilities or literacy level might be.

Another typical objection is that access and usability are secondary concerns when compared to security and technology. As important as it is for voting systems to be secure and trustworthy, I don't share their dismissal of usability. In fact, if the people in an election were considered early, if systems were designed for usability, we might find that they were more secure and promoted better trust and confidence in elections.

Where it all began

So into a world where elections were the subject of benign neglect, the butterfly ballot and the aftermath of 2000 was a wakeup call. Many in the user experience community, including myself, thought that this would make everyone think about usability in a new way. After all, this was a design and usability problem that included poor instructions, ambiguous visual cues in the interaction, and a voting card that provided little feedback and no verification. These were all errors that we know how to fix, if we were just given the chance.
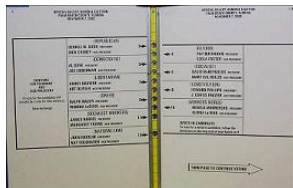
Even worse, this disaster was caused – in part – by an attempt to make things better. The saddest words of all the many that were spoken or written about the 2000 election are these:

> "I was trying to make the print bigger so elderly people in Palm Beach County can read it. We sent out sample ballots to all registered voters, and no one said a word."
>
> – Theresa LaPore
> Palm Beach County Supervisor of Elections
> November 2000

It is not enough to <u>want</u> to do the right thing. It takes knowing how to do the work, whether that means having the skills yourself, or bringing them onto your team through outside experts. It means being open to new participants in the process, something that election officials have been slow to do.

To be fair, a few of them have reached out for help, and when they have the results have been spectacular. In Chicago, Lance Gough worked with Design for Democracy (a non-profit organization founded by AIGA members). They started with observations in polling places and worked not only on the ballot but on signage, instructions, the voting machines and on the manuals for poll workers.

Good design creates usability

Design for Democracy did not reinvent the elections process, but even working within the constraints of the current machines – the very same punch cards used in Florida – they achieved remarkable results.
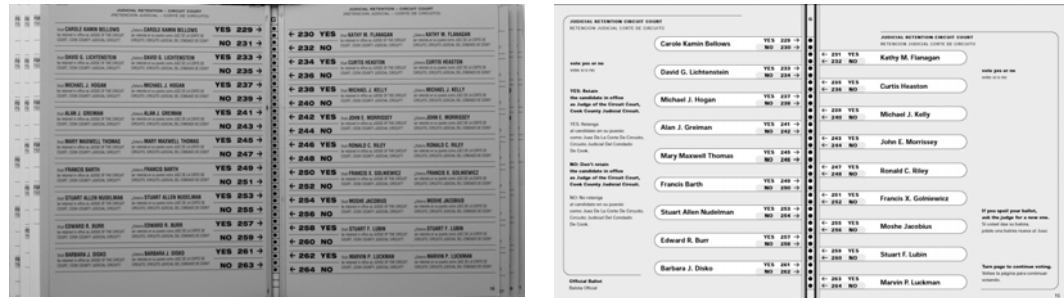

Courtesy Design for Democracy

These instructions use the same words as the previous instructions, but they have redesigned them to make the steps clearer, reduce the number of words, and even include a second language on the same card.

Even without being able to read the text, it's clear which of these instruction cards is more usable.

When they applied their skills to the ballot itself the results are also spectacular. This is a unique features of Chicago elections – the re-affirmation of judges. As you can see, there are a lot of them on every ballot, so it's a difficult case.

Courtesy Design for Democracy

The new ballot design clarifies many of the ambiguities:

- The relationship between the punch holes and the voting is clearer
- The meaning of each voting option is more precisely rendered
- The races are clearly separated
- The ballot is easier to read, and includes bilingual instructions on each sheet.

One of the differences is worth noting. On the original ballot, the names are in capital letters; in the redesign they are in mixed case. The capital letters were part of an old law, which tried to ensure that all candidates were presented on an equal footing. Making this change took a change in the law.

Every project, of every kind, should be able to reach for these kinds of results.

There are two lessons that we can take away from this case study:

1. Improvement – even dramatic improvement – can be achieved, even working within a rigid set of constraints.
2. Sometimes you have to challenge the rules to make the changes you need to make

It's all about people

One of the things that has dismayed me about all of the discussion of elections is how quickly the conversation shifted from usability and the human factor in elections to computers, systems and security.

Clearly this is a place where those of us who design for people look at the problem from a different perspective, because I think that elections are really about people, and if you start from those people, you end up with a different design than when you start from technology. We'll come back to this point, but first, let's take a look at the voting ecosystem.

Source: UPA 2004 Voting and Usability Workshop
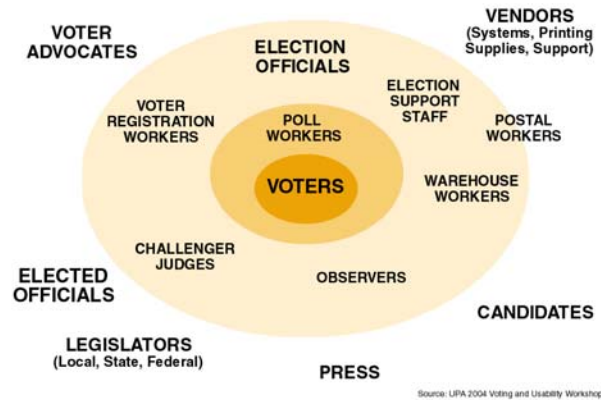
The voter is, of course, in the middle of this picture. In the end, they are the critical link in the chain – the one that cannot be replaced by anything else.

Elections are a very interesting usability case study because they have such a broad user group. Voters include any citizen over 18. We have had the civic discussion over whether they must be literate, own property, or even be a specific gender or race to be able to vote, and to our credit, we have come down on the side of inclusion. There are no requirements that voters be a specific height, and yet New York State still uses machines which, as Susan King Roth put it, disenfranchise voters by design. Her article in the Information Design Journal showed pictures of voters reaching far over their heads to read (and reach) parts of the ballot.

Through the Voting Rights Act, we accommodate areas where there are significant populations who speak a language other than English.

Through the Help America Vote Act, we have moved towards providing people with disabilities the opportunity to vote independently and privately – creating experience equity for all. One of the challenges of voting system standards is ensuring that people are not disenfranchised because of a disability.

As we look at the voting ecosystem, there are many other people besides voters who are part of the system It takes over two million people to run a national election in the US, from local county clerks who maintain the voter registration systems to the people in the local, county and state election departments. We even have to consider the postal workers as they found out in the UK recently. There have been several experiments in new voting technologies in the UK, from voting via text messaging to all-postal elections. In one jurisdiction, the printing was completed so late that no one was sure the post office would deliver them in time. Members of the local council staff, including dustmen – trash collectors to us – were pressed into service deliver the ballot packs by hand, house-to-house. This story ended happily, but there was a chain of human events that led up to this near-crisis: decisions made late, the use of many smaller printing firms, and all of the other glitches that can occur when many people are involved in a time-sensitive process.

Dorothy and Walter

I don't think you can really understand elections unless you have a good picture of two key groups of workers: the local officials and the poll workers.

I need to credit our "secret weapon" for helping me understand this part of the ecosystem better. Some of you may know Josie Scott, a member of the UPA chapter here in Michigan. What you may not know is that she worked for the Michigan Department of Elections for 15 years. And, she was the one who suggested that we take a user-centered approach to our work and create personas for some of the people in the system who we civilians might not meet every day. After all, if we hope to work with officials to make changes to our voting systems, we'd better know about the context and the people.

This is Dorothy. She's a local county clerk, and proud of her work. Like many of her peers the only thing she wants in the newspaper is the results of the elections. Anything else is a sign of trouble.

There's an interesting story about this profile. When Josie passed her first draft around for review, I sent her this picture. It happens to be my own local clerk. Her instant reaction was, "I know that woman." – not the actual person, but that this picture looked like so many people she had worked with. Hmmm. Maybe there's something to this business about personas and user profiles after all!

Related to Dorothy, is Walter. One of Dorothy's jobs is to recruit, train and manage the small army of poll workers who run elections. They are typically older – with time to spare – and many have worked elections for years. This year in Florida, they doubled the training requirements to <u>four</u> hours. How well those materials are written, and how well the poll workers understand procedure and the law can make or break an election.

These photographs used to illustrate personas – composites that create a representative portrait of county clerks and poll workers. These are fictionalised, and do not represent either of the individuals pictured.

Another thing about the poll workers. They don't like controversy any more Dorothy does. After 2000, many quit and it's hard to replace them. The EAC has launched a program to not only encourage new poll workers, but to work with youth civic groups to get younger voters engaged with the elections process. As we go into the 2004 election, we are still some half a million workers short.

There's a bit of a revolution brewing in Dorothy-land. They feel that they simply cannot win. They have no more budget than they did before – and that always "not much" – but there is more scrutiny and a more politically charged environment, with more rules and procedures, than ever.

The door may be opening just a little bit, and we need to find ways to help it open further. I usually say this simply because I believe in user-centered design, but in this case I could argue that we have a civic duty to use our skills to improve elections and answer the question, "Can usability save democracy?" (as we called the panel on elections at UPA 2004).

This brings me to two more lessons that we can apply to work in usability and accessibility in general:

3. People are more receptive to your work if you can make a connection to them and their problems.
4. Take the opportunities you are presented with, and build on them.

Its not just ballots

I believe that this is an opportunity for usability and design professionals to be the people who help solve problems. We have the skills in information design, plain language, forms design and usability evaluation to solve many of the problems. And there is a lot of work to do.

It's not just ballots. The elections world is full of forms, instructional material, public information and training courses. Almost all of them can use some work, and I've seen some newly redesigned material that clearly shows signs of careful attention and good design.

But too many of our materials are overly complex, confusingly written and locked into outdated technologies.

This is the top of an actual ballot from the 2000 election in a Michigan precinct. I used it for a design exercise at the NYC UPA. We had a room full of design and usability professionals, with years of voting experience and a basket-full of degrees between us. Not one of the groups completely understood the rules for voting on this ballot! I will grant that they did not have a lot of time to study the instructions…but neither do voters.

To everyone who says "how hard can it be to mark an X next to your choice" I offer this ballot as Exhibit A.

Even more frightening, after the meeting one of the attendees came up to me very shyly. She had just become a citizen, and this will be her first election. "Is it always this hard?" she asked.

Technology and technologists

This brings me to one other major source of frustration – the focus on technology rather than on the social and human aspects of elections.

Distressingly, one of the places where we have to agitate to keep usability on the table is in technology circles. As many of us have pointed out many times, the problems in Florida 2000 were not computer problems, but an information design and usability error -- one that could have been avoided through better training and usability testing.

I am constantly amazed by their unwillingness to look at the people who are the real core of an election, preferring to focus narrowly on the machines.

The computer scientists and organizations with a technical focus are more comfortable talking about systems, security and technology solutions than about usability or human factors.

When the ACM polled its membership on a position statement on voting, that statement said nothing about usability, accessibility or information design. When I questioned this, I was told that the ACM leadership had removed these references, feeling they were outside of the ACM's "core mission." After a little agitation, usability and human factors is back in the position statement, "ACM Recommends Integrity, Security, Usability in E-voting" (online at www.acm.org).

My experience on committees is giving me new respect for the "message of the day." Time and again, I find myself saying something that begins with, "as the usability advocate…" At first, I thought I sounded like a broken record, but I've come to realize that this is my role: to be the one who reminds everyone, at every meeting, that there is more to voting than machines.

This another lesson for usability advocates:

5. We have to say it, say it again, and then repeat it once more.

What are we doing about all this?

I'd like to end by looking – very briefly – at some of the work that is underway on standards and guidelines, and what the UPA Voting and Usability Project is doing to contribute.

The project mission is:

> **The UPA Voting and Usability project works to create a better elections process and improving the usability of ballots and voting systems.**
>
> **Usability and the voting experience should be the starting point for any design, and they are the key to ease of use, efficiency and confidence in democratic elections, worldwide.**

We have written many articles, and sponsored presentations at UPA local chapters and the annual conference:

- UPA 2002 - Rebecca Mercuri (invited speaker) "Humanizing Voting Interfaces"

- UPA 2004 - Panel with Louise Ferguson, Bill Killam, Sharon Laskowski, Josephine Scott

- UPA 2004 - Workshop on Voting and Usability with 13 multi-disciplinary participants

- "Defining a Summative Usability Test for Voting Systems" - from UPA 2004 Workshop will be included as an informative annex in the IEEE P1583 standard

The handouts and text of these and other materials are all posted on the UPA web site.
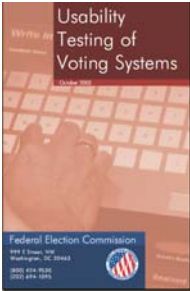
These brochures are available for download from the EAC web site – Hwww.eac.orgH. They are a good way to show that the federal government knows about usability.

We have also worked on many industry and governmental project:

- FEC - Usability and UCD informational brochures for voting officials
- IEEE P1583 – Evaluating Voting Systems
- UPA representation on the IEEE SCC 38 standards coordinating committee
- EAC's Technical Guidelines Development Committee - Chair of Subcommittee on Human Factors and Privacy
- Contacts with the UK Electoral Commission
- Presentation at the NIST Symposium on Trust and Confidence in Voting Systems
- Collaboration with Design for Democracy

Finally, I'd like to end with my last lesson:

6. Celebrate every success

As one of its first projects, the EAC created a best practices guide for election administration.

http://www.eac.gov/bp/avs.asp

It was a knowledge management project, bringing to one place the best of what we know from jurisdictions around the country. It includes one of my favorite "small victories" - one that we can all use to show that it's not just usability professionals who think this stuff is important…the US government does, too. Tip number eight is, "Hire a usability consultant." They even created a wonderful description of what we do and points to UPA as a place to find these marvelous creatures…and put it right on a federal agency web site.

In the grand scheme of things, this one paragraph on one web page may not be much. But I'll take it.

Because small victories add up to a bigger movement and to the kind of change that we are really after.

Because the real goal of all of our advocacy of user-centered design is not standards or guidelines. It is, instead, to change the way we think about design. To change the way we process of creating those things so that they encompass the broad, rich, wonderful diversity of all of us humans. And to make sure that we never again have to say, "Ooops! They forgot the usability."

Thank you

Whitney Quesenbery is a user interface designer and usability specialist with a passion for clear communication.

She is an expert in developing new concepts for product designs and has produced award winning multimedia products, web sites, and web & software applications.

Before she was seduced by a little beige computer into the world of usability, Whitney was a theatrical lighting designer on and off Broadway. The lessons and stories from the theatre stay with her in creating user experiences.

Whitney is president of UPA - Usability Professionals' Association and runs the STC Usability SIG web site. She was recently appointed to the federal Election Assistance Commission's Technical Guidelines Development Committee for voting systems.

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