

Design of Online Voter Registration Systems to Enhance Voter Participation

Cynthia Sturton

University of California, Berkeley

May 18, 2009

1 Introduction

A basic tenet of democracy is the right of the people to elect the government under which they will live, or, as Abraham Lincoln so eloquently put it, a “government of the people, by the people, for the people.” The ability to hold fair and safe elections is critical to a democracy’s existence. We consider a state’s ability to engage in a peaceful transfer of power via election as a primary measure of that state’s standing as a democratic government.

The Internet has been touted as a way to bring more people to the public sphere, a way to make participation in democratic functions more accessible for all. Many people who would otherwise be limited by physical or geographic barriers can participate in public events via the Internet. Online voting is perhaps the quintessential example of how the Internet could be used to enhance participation in the democratic process.

In the United States, we are not yet at the point of voting via the World Wide Web.¹ However, many states have started to take advantage of the Internet in order to increase voter access to pre- and post-election procedures. All 50 states have made information regarding upcoming elections, registration procedures, and polling places available online; most post election results and make registration forms available as well. These forms can be downloaded, filled out and then sent in via postal mail to the election officials. Some states let you check your current registration status online. Two states, Arizona and Washington, have gone even further and put the entire voter registration process online.² Their goal is the obvious one: lower the barriers to registering to vote in order to increase the percentage of registered voters. Of course, the hope is that an

¹At least not stateside. Expatriates were allowed to vote online in the 2008 Democratic primary and many states intend to allow online voting for military personnel overseas in the near future. It is interesting that in this, the U.S. lags far behind other countries. Britain, Switzerland, Australia and Estonia have all allowed voting via the Internet to some degree. Latvia plans to implement online voting for all its citizens in March 2009[3].

²A third state, Indiana, currently has a bill in committee to institute online voter registration[5].

increase in voter registration will lead to an increase in voter participation on election day. The initial results are promising. Since Arizona went online in 2003 there has been a 9.5% increase in voter registration and 70% of all registrations now take place online. Washington went online in 2008 and they are expected to have similar results.[11]

While these early results would indicate that online voter registration is succeeding in obtaining the desired increase in voter registration, we propose that there might be a secondary, unintended effect that has arguably more potential for promoting democratic participation. With online voter registration, citizens will be able to easily access and modify their registration data, including party affiliation. As with anything else, once the barrier to an action is lowered, one can expect to see an increase in that action. There is a body of research around economist Albert Hirschman's idea that there are two distinct ways one can show disapproval: by voicing one's opinion or by leaving the situation, i.e. "exiting"[1]. During a campaign, disapproving voters may have only limited means of speaking directly to a particular politician. However, they can show their disapproval by leaving the political party, in other words, by exiting. We expect that once voters can more easily update their party affiliation, they will do so more often as a means of signalling to candidates their displeasure. While the online voter registration system (OVR) is meant to increase voter participation on election day, this new avenue of communication with the candidates could enhance voters' participation prior to election day. In this paper we consider the design of the OVR with this use model in mind. We look at ways the OVR might be designed to handle and even promote this new form of voter participation.

Will Voters Exit?

One question we must consider is, are people willing to change their affiliation? Even with the lowered barrier to access, if people feel wedded to their party, for better or for worse, they may not take advantage of this new avenue of communication. If someone feels she is a "Republican through and through" it would take more than one bad policy and easy access to her registration data to get her to change affiliation. To get a sense of how willing people are to change parties, we looked at how the percentage of Democrats vs. Republicans vs. Other for all registered voters changed on a month by month basis over the last five and a half years. The data comes from a report published by the polling company, Rasmussen Reports, and covers January 2004 through April 2009 [9]. The numbers indicate that people are in fact willing to change their party according to the political climate. We found that the largest change from one month to the next was 2.8% for Republicans, 2.2% for Democrats, and 2.9% for Other. The average change was 0.5% for Republicans, 0.7% for Democrats, and 0.9% for Other. Over the course

of the five and a half years the percentage of registered voters that were Republican differed by as much as 6.5%, for Democrats the difference was 5.8%; the difference was 8.8% for Other. The numbers reflect self-reported affiliation by adults (not necessarily likely voters) so a change in affiliation may not reflect a change in that voter's official registration status. Although the churn from month to month is not, on average, drastic, over time it can add up considerably.

Will Politicians Notice?

We have presented a way that voters might use party affiliation to communicate with their politicians, but the communication is only effective if the politicians are listening. In this section we argue that politicians (or more generally, the campaigns they run) will be interested in tracking churn rate of party affiliation.

Campaigns are avaricious consumers of poll data, with the larger ones employing their own internal pollsters. According to Danielle Levine, the Deputy Policy Director for John Edwards' 2004 presidential campaign, the most common use of polls is to adjust strategy: where to focus campaign resources, where to advertise. Although a campaign could potentially respond to polls by modifying its platform, it is more likely to use focus groups when figuring out its message and use polls to ascertain how well it is doing with a particular demographic. [2]

While politicians may rely heavily on them, and in general polls are reasonably accurate,³ polls do not always give a reliable picture of the current preferences of the electorate. One difficulty facing political pollsters is getting a truly random sample of likely voters. If the potential voter to be interviewed is unavailable or does not wish to participate in the poll, there is not much the pollster can do but move on to a different person. There is evidence that there is an increasing number of people unwilling to participate in polls and it is unclear whether this group of people share a certain political preference different from the rest of the public [7]. The difficulty with selecting the appropriate sample was evident during the 2008 presidential campaign where a variety of polls, all released on the same day, disagreed dramatically with each other. One showed the Democrats leading by as little as 2 percentage points while another had the Democrats ahead by as many as 15 percentage points [6].

If politicians are willing to use and rely on poll data, even knowing that it is not providing a perfect picture, it seems likely that real-time data about party affiliation would be extremely valuable to a campaign. Errors due to invalid sampling would not apply; the party affiliation for all registered voters could be known. Of course, we are not suggesting that this information would replace poll data. For one thing, however

³The National Council on Public Polls recently released a report stating that the average candidate error for 19 national presidential polls taken during the 2008 campaign was 0.9 of a percentage point[8].

low the barrier to changing affiliation, there will still be plenty of people who only wish to express their political preference through their vote on election day and not before then. We only propose that this will provide politicians with data complementary to the polling data and focus group feedback which they use today.

2 Requirements Analysis

If the system is to be usable in the way we imagine, timely data about voters' registration must be made available to political campaigns (and possibly to the media as well). Currently, not all states publish the same amount of data about their voters. Some states do not reveal party affiliation in their public records of voters, others reveal only which primary a voter participated in (a proxy for party affiliation). Of course, for those states, our hypothesis will not stand. But for states that do publish party affiliation data, the information gathered will be much more rich if the data contains timestamps indicating when users changed their affiliation. Knowing that many Republicans are so unsatisfied with the actions of their party over the last four years that they switch affiliation is one thing, but knowing that many Republicans are unsatisfied with a particular piece of legislation or speech would give the electorate a much more powerful voice. At its extreme, you can imagine tracking party affiliation by the minute as a candidate gives a speech. Imagine being able to watch party affiliation change as a candidate speaks on a certain topic. An unpopular statement could be followed by a 0.5% drop in party affiliation. That would certainly be giving the people a new, powerful channel of communication with their representatives. Timestamps accurate to the second are not necessary; including just the date will provide a tremendous amount of information to the politicians.

Security

At first glance it may seem that any security concerns related to online voter registration can be sufficiently handled by current policy remedies. After all, the states have all developed a legal code to prevent or deter one person from registering to vote under more than one name. There is no reason to suspect that registering under a second name is any easier when you fill out a form and submit it online versus filling out a form and mailing it in. Current policy may or may not be effective, that analysis is outside the scope of this paper, however, if our hypothesis is borne out, current policy may not be sufficient. Online voter registration could become a powerful way to be heard by, and in turn, influence the actions of, the politicians. As such, the motivation for attacking the system will increase. In addition to worrying that a single voter might register more than once, there is now a new threat model to consider: an attacker fraudulently changing

many voters' registrations in order to send a (fraudulent) message to a politician. The design of the system will have to take this new threat model into account. This is discussed in more detail below in section 3.

Stakeholders

Before delving further into the design considerations for the registration system, it is important to first identify the stakeholders of the system. We need to know who will be the users of the system and who will be the consumers of the resulting data. We also need to know what the goals of the various stakeholders are; how do they plan to use the system and what services to they expect the system to provide? Answering these questions will help to ensure we design a system that provides a valuable service and is usable by the right people.

State Election Officials The state election officials are perhaps the ones with the most obvious interest in an OVR. The immediate goal of the online system is to make registration easier and more accessible to everyone. Of course, the larger goal is to increase voter turnout by increasing the number of eligible citizens who register to vote. The goal therefore, of the state officials, will be to provide a system that is indeed easy to use for everyone. A well-designed user interface will be of vital importance to this group. Accuracy is also of prime importance to this group. If the list of registered voters can be easily challenged by one party as erroneous or incomplete, that is a headache the election officials would wish to avoid. Therefore the online voter registration system must be accurate, and ideally, provably so.

Voters Along with the election officials, the voters must be considered a primary stakeholder in any OVR. They are the ones who stand to benefit most directly from such a system. In fact, it is ostensibly with the goal of helping voters that states wish to implement an OVR. At a minimum, the voters will want the system to be easy to use and accurate. Voters will quickly turn away from the system if they are forced to navigate through a convoluted maze of links to complete the registration process. Nor will they continue to use the process if they find that on election day there was some hiccup with their registration and they must vote a provisional ballot.

However, if the these first two needs are met, then the system may become used in the manner we are predicting: with a lowered barrier to accessing and modifying their registration data, voters may start to use the system to change their party affiliation more often than they have in the past. It is to this new fluidity of party affiliation that we expect political parties to pay attention. Once the voters realize the parties are paying attention they may become more assertive in wielding their party affiliation as a way to

communicate with the politicians. The more detailed information the system provides about when a voter changed affiliation, the more sophisticated party-exiting will be as a tool for voters to communicate with their politicians. Therefore, maintaining details about users' registration actions will be a benefit to the voters as well as to the political parties.

Political Parties A particular party may believe that it stands to benefit disproportionately from an increase in voter registration in which case their interest may be similar to the state governments': an accurate, easy to use system. However, the political parties as a whole may have a secondary interest. If our hypothesis is borne out, the OVR will provide added transparency about constituents' opinions on various issues of the party platform, or on particular members of the party. In this case, the parties will have different goals than the election officials do. In order to gain feedback about voters' displeasure and the reasons they are exiting the party, the party leaders will need to be able to correlate exit rates with contemporary events. It is vastly more useful to the party to know that 1% of the party exited in the days and weeks following a particular speech or announcement of a new plank in the party platform than it is to know that in the six to twelve months since the previous election 1% of voters have switched. The latter only demonstrates the voter displeasure, the former gives some added information about possible causes of voter displeasure.

Advocacy Groups How might the advocacy groups stand to benefit from the OVR? Well certainly, they all wish to increase voter participation and so any system that will further that goal will be popular among them. As with the political parties, if it appears that OVR might increase voter participation disproportionately for one demographic, the advocacy groups typically supported by that demographic will be supporters of the system and the opposing advocacy groups might initially balk at the instantiation of such a system. But beyond considerations of voter turnout on election day, advocacy groups might turn out to be the ones to promote the online system as an avenue for voter-to-politician communication. One can imagine the way advocacy groups could use it to make their campaigns more effective. An email sent to more moderate Republicans with a quote from that day's Rush Limbaugh show and a link to their state's online voter registration site with the message, "Did you hear what Rush said? Leave the Republican party now and voice your concern." could be very effective, first by moving voters to the Democratic party, and then by convincing a party to disassociate itself from its more extremist members in response to the spike in attrition. Advocacy groups currently make use of email campaigns, facebook groups, twitter accounts and other web-based methods to get politicians to pay attention to their issues. It would not

be surprising if it is the advocacy groups that first discover this new use of the OVR to enhance voter participation. As such, their desire for an easy-to-use system might be greater than anyone else's and they are likely to be the ones who push hardest for this new use of the system to promote voter feedback.

3 Design Considerations

In this section we attempt to highlight some of the ways our proposed use of the OVR might affect the design. We don't attempt to lay out any "correct" design, rather we point out some of the design points to consider in anticipation of this new use. Some of the issues arise because the OVR as communication channel might introduce new threats to the system, while others are introduced as ways the system can be designed to enhance this new communication channel.

Security

As mentioned above, if the OVR becomes a popular way to communicate to politicians, it will attract people attempting to hack the system in order to change many voters' affiliation, thereby sending a (fraudulent) message to a particular party. This new threat must be considered carefully when designing the system. Here we will discuss a few designs that might be used to counter this attack.

The simplest way to handle such attacks, from a technological point of view, is to simply enact a policy that provides a way to negate the effects of any such attack. An appeals process that, on election day, lets a voter contest their current registration as fraudulent and lets the voter cast a provisional ballot would remove the harm to the voter. This solution is rather unsatisfying from both the voter's point of view and the politician's point of view. Since there is no risk to the attacker it is safe to assume that attacks could easily become quite prevalent. Voters and politicians would lose their channel of communication if they could no longer rely on the registration data being accurate. More important, the OVR, rather than making the registration process easier for voters and administrators, would introduce a whole host of administrative nightmares as election officials would be forced to determine which voters were the victims of attack and should have their provisional vote counted in a particular primary.

Perhaps we might like to introduce some risk to the attacker, imposing stiff fines or jail time on someone who tampers with another's registration data. However, the nature of the Internet is such that it is relatively easy to access a web site anonymously; finding the attacker in order to prosecute would be next to impossible.

What is needed is an authentication scheme, a way for a voter to log in, authenticating themselves to the OVR that they are who they say they are. Secure authentication

protocols exist (SSL/TLS) that provide a way for the client (voter) to be assured she is communicating with the server (OVR). Such a protocol provides a secure communication channel over which the voter can submit her login credentials such as username and password. However, there are pitfalls with this system as well. Users are notorious for choosing easily-guessed passwords. Furthermore, using some personal data, such as SSN as part of the login credentials introduces privacy concerns for the voter. Another problem is phishing. If the economic incentive exists (perhaps financed by some well-heeled, nefarious advocacy group?) attackers will use a variety of techniques including social engineering to try to trick voters into revealing their login credentials. There is a large body of ongoing research on client authentication protocols and how best to handle these problems (e.g., [4]). We do not discuss that research here, but only include an urging that the OVR be carefully designed using the current best practices for client authentication.

Access

Another issue to consider is who will have access to the system. Will all information be publicly available online or will it be structured so that some people (media, politicians) can access some subset of the data, perhaps the timestamp data, while the general public has access to a more restricted set of data. Will the data be displayed in aggregated form only or will it be possible for anyone to go online and see that Jane Doe switched from the Democratic to the Republican party? ⁴ If the data is aggregated, what form will the aggregation take? The politicians and media might like the data to be broken down by precinct which can often act as a proxy for demographic grouping.

As an enhancement to accessibility, an RSS feed that summarized new registrations, party exits and party joins, and party switches (the putting together of the previous two items) on a weekly or daily (or even hourly?) basis could be invaluable to the party strategists. The use of well-formatted data such as XML would make it easier to add this feature at a later date if it was so desired.

Usability

We might expect to see some lag time between when a state goes online and when the citizens start to take advantage of their increased access to registration status. It will take time for people to realize the system is in place, learn to use the system, and appreciate the ease with which they can change their data. Some ways in which this lag time can be reduced is by advertising. For instance, by including in the notifications that

⁴Although this may feel “creepy”, this is information that, in general, is already public. The exception is the timestamping information which, while not necessarily private, before now was never available at a timescale smaller than a single election cycle (primary to primary).

states publish about the new OVR the mention that party affiliation can also be changed online. We looked at the Arizona and Washington online systems and while the online systems advertised their use for new registrations or change of address, no mention was made of changing party affiliation. Presumably, they include on their webform a place for changing affiliation just as regular paper forms do, but it was not clear from the website. Including this information might go a long way toward helping voters realize they can now easily voice their displeasure through exiting.

4 Discussion

Our proposed use of party affiliation as a new channel to communicate with politicians may or may not lead to better campaigns. This “communication” can easily go too far. Politicians might become fearful of making even a slightly controversial statement. Some complain that there is already a lack of substance in political statements made during a campaign. This could easily exacerbate the problem. However, we expect that exiting would be taken seriously by politicians. Unlike polls where there are many variables that might introduce errors, a voter’s party affiliation is a fact, not open to interpretation. And unlike the mass email campaigns organized by advocacy groups, exiting a party is a demonstration that this is an issue the voter cares about deeply enough to act on. Even so, it is possible that switching could become too prevalent. If voters become too fickle, it is possible politicians will stop taking their exits as seriously. Especially if it turns out that most people will exit their party to send a message but then rejoin their party at the last minute so they can vote in the primary.

Another concern (for the two main parties) is that an increase in fluidity in party allegiance might translate into a more powerful third-party option. Once party affiliation becomes less static, a third-party option that used to seem unrealistic, may seem more palatable, knowing the voter can easily switch back to a main party at some later date if they so choose.

These are all issues that would require further research once the OVR’s are deployed.

5 Future Work

The California Voter Foundation (CVF) is a “a nonprofit, nonpartisan organization dedicated to advancing the responsible use of technology in the democratic process” [10]. Kim Alexander, the founder and president of CVF is at the forefront of the ongoing work to use technology for safe and accurate elections. She is currently tied up in preparations for the May 19th special election in California. We have set up a telephone interview with her and look forward to discussing our hypothesis and subsequent design considerations

with her. We expect that, as an expert in the field, Ms. Alexander's input will be invaluable in further refining our design considerations and we look forward to discussing our work with her.

6 Conclusion

The ability for citizens to participate in free and fair elections is of paramount importance for a state to be truly democratic. In recent years state governments have sought to leverage the Internet to provide greater access to the democratic process, in particular the process for voter registration. States first put information regarding election procedures online enabling access by a wider audience. The next step was to make voter registration forms available online for download, further reducing the barrier to voter participation. The next logical step is to put the entire voter registration process online. Two states have already done so, a third is moving in that direction, and it seems likely that many more states will follow suit. The goal is of course to lower the barrier to registering to vote and thus to participation in elections. The hoped-for outcome is an increase in voter turnout on election day. This correlates directly to an increase in democratic participation by the citizens.

However, we believe there might be a second, unintended consequence of online voter registration that would further enhance voters' participation in the election process. We believe a lowered barrier changing voter registration will lead to an increase in churn between party affiliations. We hypothesize that voters could use their ability to easily exit a party to signal to party leaders, or a particular candidate, their disapproval of specific action or rhetoric. This opens up a new, more immediate, channel of communication between the politicians and the electorate. Voters would communicate by changing their registration away from (or toward) a particular party. Politicians could in turn communicate by paying attention to this swing and adjusting their speech or actions accordingly. We suspect this effect will be most powerful during campaigns, but might also exist at other times, for example, when Congress is debating a particularly contentious issue.

In this paper, we look at the ways this new use of the OVR changes the design considerations for the system. If the system designers can anticipate this use of the OVR they can design it to be robust against new threat models as well as rich in features that would facilitate this new channel of communication.

Giving people greater access to, and control over, their voter status could substantially increase the voter's ability to communicate with their elected officials, enhancing citizens' participation in the democratic process, dramatically changing the nature of electorate-elected communication and, in turn, the nature of campaigns.

References

- [1] Albert Hirschman. Exit, Voice and Loyalty: Responses to Decline in Firms, Organizations, and States. *Harvard University Press*, 1970.
- [2] Danielle Levine. Deputy Policy Director for John Edwards' 2004 presidential campaign. Telephone interview, May 2009.
- [3] David Herbert. Online Voting Closer than Imagined. *NationalJournal.com*, January 2009. http://www.nationaljournal.com/njonline/no_20090107_7892.php.
- [4] Hiltgen, A. and Kramp, T. and Weigold, T. Secure Internet Banking Authentication. In *Security & Privacy, IEEE*, volume 4, pages 21–29, 2006.
- [5] Legislative Services Agency. Senate Bill 0534, 2009 Regular Session. <http://www.in.gov/apps/lisa/session/billwatch/billinfo?year=2009&session=1&request=getBill&doctype=SB&docno=0534>.
- [6] Michael Abramowitz. Accuracy of Polls a Question in Itself. *The Washington Post*, October 2008. <http://www.washingtonpost.com/wp-dyn/content/article/2008/10/28/AR2008102803675.html>.
- [7] Michael Barone. Are the Polls Accurate? *The Wall Street Journal*, October 2008. <http://online.wsj.com/article/SB122463210033356561.html>.
- [8] National Council on Public Polls. <http://www.ncpp.org/?q=node/101>.
- [9] Rasmussen Reports. Summary of Party Affiliation. http://www.rasmussenreports.com/public_content/politics/mood_of_america/party_affiliation/party_affiliation/summary_of_party_affiliation, March 2009.
- [10] The California Voter Foundation. <http://www.calvoter.org/index.html>.
- [11] Washington Secretary of State. Online Voter Registration - Frequently Asked Questions. http://www.secstate.wa.gov/Elections/online_reg_faq.aspx.