Cause Caller: An Empirical Test of A Participatory Democracy Technology

www.causecaller.com

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ABSTRACT

The promise of a truly participatory democracy has never been clearer than digital media has made it today. The unique distributive nature of the Internet provides a platform that has the potential to deliver on this promise by facilitating better group action at lower cost, thereby encouraging actual participation in democracy. There have been many meaningful developments in bringing better information to citizens looking to use digital networks to serve their political needs, but many useful tools and databases remain proprietary and costly while others remain too general or ineffective for political action.

This paper will highlight some of those achievements, but more substantially, it will discuss potential for future developments in facilitating a participatory democracy through *Cause Caller.com*, a Semantic Media Wiki and Asterisk based virtual phone bank application. I hope to show that a tool such as *Cause Caller.com* represents a new kind of platform for participatory democracy; one that can not only enable specific applications like virtual phone banking software, but also one that can cultivate a participatory democracy online and off.

Categories and Subject Descriptors

K.4.1 [**Computing Milieux**]: Computers and Society-Public Policy Issues

General Terms

Participatory Democracy

Keywords

Asterisk, Semantic Media Wiki, Semantic Web, RDF, Wikis

1. INTRODUCTION

By lowering the cost of action the Internet has fundamentally transformed the nature of speech, society, and government. These consequences are not unlike those of democratic revolutions; a significant corollary that has lead to an innumerate amount of conversations, papers, blogs posts and books parading the virtues, achievements and structures of the Internet as being in-line, if not synonymous with those of democracy.

The hope is that the Internet will actually bring us one step closer to a "participatory democracy" and there is substantial areas dedicated to this service that I'll take a look at in this paper.

The first area is the creation and maintenance of repositories of information relevant to democratic action. The secondary area regards specific actions performed by distinct groups using technological tools; actions which we can consider instances of participatory democracy, but which are too narrow to enable to a larger scale participatory democracy. The third and final area that I'll examine is that of tools which enable distinct instances of participatory democracy, but which are too "general" or too ineffectual to be seen as specifically delivering on the promise of a participatory democracy through technology.

Ultimately this paper will argue that the needs of a participatory democracy are just beginning to be fulfilled, and projects utilizing open standards and software will bring us even closer. I hope to demonstrate that my thesis project, *CauseCaller.com* and its underlying wiki is one of those projects and will help deliver on the promise on a participatory democracy.

2. HISTORY

Benjamin Barber's *Strong Democracy* describes strong democracy as a "distinctively modern form of participatory democracy."[1] For the purposes of this project, it is worth highlighting Barber's most basic points about strong democracy without going into too much detail for it better illustrates his later perspective on technology and its promise for democracy.

Barber's essential point is that a strong democracy should be a response to a thin democracy, whcih is the state he had observed ours to be in while writing the book. A strong democracy's intentions are informed by the original motivations and goals of pure democracy as instantiated by the ancient Greek polis. Barber believes that *strong democracy* is at odds with representative government and the "instrumentalism" of a liberal democracy. To Barber, the politics of liberal democratic pluralism are "nothing more than the chambermaid of private interests."[2] He goes on to argue that transformation is at the heart of a strong democracy and that a public language needs to be created that can realign private interests in terms of public good. He believes that a strong democracy can be the only remedy for the perils of modern politics.

Barber's argument ends with the basic imperative that politics must become more direct in order for a strong democracy to be realized. We must ween ourselves off of a representative democracy and replace representational politics with direct, citizen-to-government involvement. Each action and responsibility of a given citizen should, in Barber's opinion, bare consequence on each other so that politics becomes a way of living, not just a way of life.[3] One of the ways he believes this is possible is through investment in telecommunications infrastructure. Barber's ruminations on how telecommunications could benefit a participatory democracy are his most significant contribution to a current survey of participatory democracy, and considering the date at which he made them (1984), his most prescient.

In a section titled "Institutionalizing Strong Democratic" Talk Barber bemoans that a "uniform nationwide system of local participation has [n]ever been instituted or even considered."[4] He then explicates how *neighborhood assemblies* should be introduced as a way to bring democracy closer to citizens' every day lives. He outlines a multi-phased development for these assemblies, where the second phase would have the assemblies become ".. voting constituencies for regional and national referenda ... and possibly act as community units in systems of civic telecommunications."[5] Barber's predictions of the effect of telecommunications in a strong democracy are both grandiose and shortsighted – almost all of his ideal scenarios depend on democracy as mediated through television and cable networks. While the Internet existed at the time of his writing, it was in its infancy and few had begun to explore its potential for democracy. This doesn't stop Barber from understanding a more

general point about technology: "the capabilities of the new technology can be used to strengthen civic education, guarantee equal access to information, and tie individuals and institutions into networks that will make real participatory discussion and debate possible across great distances."[6] One particular prediction Barber seems to be quite certain of, or at least quite interested in realizing, is a process that would later be named "E-Rulemaking." The idea of giving citizens direct access to creating legislation is a simple and easy manifestation of a strong democracy. Given Barber's feelings towards representative democracy as essentially a co-cospirator of private interests, it comes as no surprise that he distrusts the current legislative process. Direct influence by citizens on the rulemaking process is a realistic solution to ending the corruption that he sees endemic within democracy.

Over 20 years later Cary Coglianese of the University of Pennsylvania Law School wrote an article revisiting and evaluating "techno-optimist" predictions of the future of democracy as mediated by technology. Coglianese's focus is Barber's specific prediction that E-rulemaking would become a feasible and realistic model for participatory democracy but Coglianese remains unconvinced of its viability. He concludes that "..even with the Internet significant barriers to ordinary citizens' engagement in rulemaking will remain."[7] Coglianese's point, though multifaceted, is essentially a simple one: rulemaking, and the legislative process in general is too sophisticated, complex, and confusing for the average citizen. The knowledge and skills required to competently draft legislation remains an expertise for those deeply entrenched in the field.

But Coglianese still believes technology holds much potential for the future of democracy, just not in the ways originally predicted by Barber. Under the auspices of "pluralism," Coglianese believes technology can help individual and independent groups inform regulators in valuable ways. He gives the intuitive example of a local sanitation engineer contacting with the EPA to give better insights on future regulations relevant to his work. While technology may not be able to advance a strong democracy for any random selection of citizens, Coglianese believes it can certainly facilitate better action by individuals who are interested in giving input on particular issues that they know and care passionately about. He concludes by arguing that "[a]n open and networked regulatory process can thus expand the potential information that comes to regulators' attention."[8]

In developing Cause Caller I've focused my attention on Coglianese's exact point that technology has the ability to help varied interests inform the democratic process rather than constitute it itself. While once I shared Barber's optimism that laws could be drafted in the very same way e-mails are on the Internet, eventually my optimism gave way to Coglianese's skepticism. Giving citizens the tools to participate in democracy, even if it is merely as simple as making a telephone call easier to dial, or an e-mail easier to write, is at the heart of a participatory democracy. It

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[1]Barber, 117

[2]Ibid.

[3]Ibid., at 118

[4]Ibid., at 268.

[5]Ibid., at 270

[6]Ibid.

[7]Coglianese at 23

[8]Ibid., at 25

is with Barber and Coglianese's perspective in mind that I feel Cause Caller's functionality demonstrates a commitment not just to strong or participatory democracy, but to the institution of democracy in general.

But before I introduce Cause Caller and explore its implications for participatory democracy, it will be worthwhile to identify some current projects in the space that seek to instantiate Barber's optimism coupled with Coglianese's realism.

3. *THE STATE OF THE UNION:* PARTICIPATORY DEMOCRACY NOW

There are numerous projects that are generally considered to be part of the movement to create tools for a participatory democracy. As I'll argue below, most of these tools are ill-suited for general activism for a number of reasons. The first set of tools comprise information repositories. These are sites that host vast database of publicly available information about politicians, laws, and records. While these are some of the most valuable resources available in a participatory democracy, it is wrong to thing of them as fully robust tools for a number of reasons.

The second set of tools are highly effective, but relatively closed for general purpose activist work. These include campaign-specific tools as well as tools that are prohibitively costly to most activists and campaigns.

The third and final set of tools are those that we are already familiar with but whose scope is too general for true political activism.

By outlining these various projects successes as well as their deficiencies, I hope to demonstrate that there is a legitimate demand for specific tools that allow citizens to not just be mere researchers or spammers but to participate in democracy as be activists using digital networks and media. Ultimately I'll show that while all of these projects have individual characteristics that will help define a participatory democracy tool, not one individual project exhibits all of the characteristics that we should look for in participatory democracy tools.

3.1 Information Repositories

For the purposes of this paper I've chosen to evaluate the various information repositories in the participatory democracy space across a number of criteria. I'll first look at the data served by the particular repository, and then the format in which that data is presented, how it is maintained, and finally, the freedom of that data and its software. Ultimately, I'll analyze how much closer a particular project brings us to a participatory democracy.

While there are many projects being developed in the participatory democracy space, I've chosen only a couple that I believe highlight the successes and challenges faced by the current set of tools offered to citizens interested in digital activism and participatory democracy. I believe that each one of these projects demonstrate features that I've attempted to combine into Cause Caller's fundamental makeup as well as deficiencies I've tried to avoid.

3.1.1 *GovTrack.us*

For most intents and purposes GovTrack.us is the most substantial effort in the current participatory democracy space. Joshua Tauberer's site contains data about virtually every politician to ever grace the halls of the House or the Senate, as well as full text analysis of every bill considered, voted on, or made into law within the last decade. GovTrack.us also makes its information available under what Tauberer considers "Web 2.0 principles and open data."[9]

For the most part, GovTrack.us's data is up to date and highly reliable as it is automatically harvested from the federal government's official legislative database called $THOMAS$[10] that is run by the Library of Congress.

Since computers are rarely as competent as humans are at distinguishing good or valid information from bad or nonsense information, this leads to the potential of noise in GovTrack's signal. Trauberer is the first to admit this potential problem and acknowledges that there may be errors in some information available on the site. He points out that is this is largely due to the fact that the US Government has yet to make it easy to fetch the information using automated processes. He subsequently urges users to contact the maintainers of THOMAS to encourage adoption of standardized data formats.

Understanding the need for standardized data has obviously lead Trauberer to create the robust services available on GovTrack.us. Data on the site is available in a number of formats including RSS, XML, and RDF.

For example, for any given bill on the GovTrack.us system, Trauberer has created a RSS feed for information about the bill. This RSS feed is updated at any point information about the bill changes, such as when it becomes law or when modifications are made to its text. This functionality is also provided for any legislator in the system.

GovTrack.us also provides a sophisticated backend for users to interface applications. Along with supplying a Google Map interface of congressional districts, GovTrack.us provides a SPARQL[11] query interface so that users can extract RDF data from the site's database. RDF is a particular kind of XML file that is designed to be a part of the semantic web. Each serialized XML entity in a RDF file is a "triple"[12] relating a subject to an object via a predicate. RDF files on GovTrack.us contain triple statements similar to "Politician Y voted for Bill X" or "Bill X is up for vote on Day Z."[13]

GovTrack.us's SPARQL query interface allows powerful querying of information about the congress using knowledge state-

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[9]Trauberer, Joshua. "About Us." GovTrack.us. 8 May 2008 http://www.govtrack.us/.
[10]Library of Congress, "THOMAS." 8 May 2008 http://thomas.loc.gov.
[11]SPARQL is the SPARQL Protocol and RDF Query Language. It's a standardized query language designed to enable query of RDF data.
[12]A triple consists of a subject, predicate and object that describes a relationship between the three.
[13]An RDF file is a serializd XML file containing triples

ments. Trauberer supplies some interesting examples demonstrating what is possible when using SPARQL, such as looking for every bill that senator John McCain has sponsored, or more complexly, the population of every state sorted by senator. [14] The database boasts over 13 million triples covering 8 years of political data, and though the SPARQL endpoint is not updated often, Trauberer makes the RDF data available to download and use freely.[15]

Most impressively, Trauberer has offered all of the code that GovTrack.us runs on to the public under the Aferro General Public License [16] through a subversion repository. This allows anyone to download any and every piece of code used by the site and use it for their own purposes, so long as they give attribution to GovTrack.us and give away the modifications that they do make.

Despite Trauberer's tremendous effort in freeing congressional information, his site remains a static repository of information that even he describes as a research tool more than anything else. Visitors to the site are greeted with an enormity of valuable, high quality information and code that lives in open formats, but the site's contribution to participatory democracy ends there. If an activist had used GovTrack.us' services to find out information about an upcoming bill there is little more that they can do on the site other than "know" that information and go elsewhere to act on it. More specifically, actual contact information regarding a particular politician or committee doesn't exist anywhere on GovTrack.us and the site only provides superficial directions on how to acquire it. a The site's structure is also problematic in that its dataset requires constant attention from one source. Whether it is Trauberer himself, or the scripts that he writes, the public facing data on GovTrack.us is necessarily maintained and bottle-necked by a single entity. This means that if any given user finds an error in the site's data, the best they can do is report the error, as they do not have access to fix it themselves. In theory an extremely dedicated individual could download Trauberer's code and databases (over 12gb in size)[17] and recreate the site with the corrected data. This solution seems needlessly wasteful of computing resources as well as ultimately ineffective – it is reasonable to assume no set of data that large can be singularly maintained by any one entity.

To evaluate whether GovTrack.us really contributes to a participatory democracy, we must look past the information that it makes available and ask whether that information is easily actionable. For the most part Trauberer has gone to great efforts to make the information usable, and it is actionable to the extent that it makes data available for other applications freely, but within the site, there is little more that typical users can do than research. Moreover, the structure of the site is largely top-down and dependent on Trauberer's continued stewardship of his scripts and data.

3.1.2 OpenCongress.org
OpenCongress is a specific example of a project using data and resources from Trauberer's GovTrack.us.[18] It combines data and updates from GovTrack's with Google News updates in an easier to use website. OpenCongress was built by the "Participatory Politics Foundation." The PPF's stated mission is to build "software tools and websites that create new opportunities for continual engagement with government."[19]

OpenCongress' structured data exists in RSS feeds per bill, per politician, and per issue. The site also contains many micro-blogs that highlight issues as they relate to other objects on a site. OpenCongress offers a Facebook application that allows users to attach bills that they are interested in to their Facebook profiles. Bloggers can also use OpenCongress' to attach widgets to their blogs that express a similar interest in "watching the congress."

Since OpenCongress' data is largely derived from GovTrack.us' repository it is safe to assume that its re-useable and clear from any legal obligations, to the extent that it could be.[20] But this is also a risk: all of OpenCongress' data relies on Trauberer's collection and maintenance of GovTrack's repository. If a user finds an error or bit of irrelevant information on OpenCongress' site they have few options for correcting it. Not only must they determine that GovTrack.us is the original supplier of such information, but they would have to notify Trauberer, not the administrators of OpenCongress about the error.

While OpenCongress succeeds on many user interface levels that GovTrack.us doesn't, it's not clear what more the project brings to the table of participatory democracy. Users can register and discuss and rate bills in ways not possible on GovTrack.us, but in terms of actual advocacy or activism, OpenCongress offers only a little more participation in democracy than GovTrack.us.

3.1.3 Congresspedia
The basic idea behind Congresspedia, which is also a project funded by the Sunlight Foundation, is to mimic the Wikipedia model of information maintenance and retrieval. The site is built upon the same software as Wikipedia, Media Wiki, and allows anyone who has registered to edit or create new articles on the site. [21]

This is a significant departure from projects like GovTrack.us and OpenCongress (as well as almost all other projects in the participatory democracy space) in that it makes the data about politicians editable by the public. This allows any user to maintain the database of information in a way that GovTrack and OpenCongress cannot. Where previously users were largely a tertiary consideration in the maintenance of data in a participatory democracy project, Con-

[14]Trauberer, Joshua. "SPARQL." GovTrack.us. 8 May 2008 http://www.govtrack.us/sparql.xpd.
[15]Ibid.
[16]Free Software Foundation, "GNU Affero General Public License." The Free Software Foundation. 8 May 2008 http://www.fsf.org/licensing/licenses/agpl-3.0.html
[17]Ibid., 14

[18]Open Congress, "About." Open Congress. 8 May 2008 http://www.opencongress.org/about
[19]Ibid.
[20]Copyright does not apply to factual information or listings such as telephone numbers and contact information. See Feist Publications v. Rural Telephone Service
[21]"Congresspedia." SourceWatch. 8 May 2008 http://www.sourcewatch.org/index.php?title=Congresspedia

gresspedia allows for robust interaction and participation by those users.

Many of the edits to Congresspedia are ones that "fix" information about politicians or bills that was otherwise broken.[22]

This feature is not without its risks, as Congresspedia's data has the potential to be hijacked by any individual with malicious intent. Of course this is the very same issue faced by Wikipedia, a larger project with hundreds of millions of editors and hundreds of millions of edits.[23] In fact, vandalism on Congresspedia is handled much in the same way as vandalism on Wikipedia: through talk pages and arbitration. Though there the rules are less codified than those on Wikipedia, Congresspedia's editors have developed a rich understanding of their power and exercise it responsibly through reverts and moderation.

It looks as though Congresspedia brings participation back into the participatory democracy scene, but there is one caveat. The data that lives on Congresspedia is largely unusable by anything other than a human. Where GovTrack.us and OpenCongress.org excel in providing structured data that can be reused by other applications, Congresspedia's central limitation lies in the fact that it is a standard wiki and as such does not supply structured information. This is mostly due to Media Wiki's default limitations; wikis are designed as places to hold text that is human readable and editable, and are not usually thought of as databases.

So while Congresspedia is noteworthy due to its wiki based format and philosophy, it is constrained by the limitations of what is essentially Web 1.0 software. Its output is varied in terms of quality and quantity, and for the most part, only readable by humans. While users may find this useful to do research, building sophisticated applications on Congresspedia is largely impossible.

One final limitation that plagues all three projects is their scope: all purposely focus on the federal congress and the senate, and exclude local level politicians. While this keeps their datasets relatively uniform and congruent, it prevents citizens from doing research on local representatives. These are the politicians who are regulating issues that are most likely to affect a given citizen's life and are thus most pertinent to their participation in democracy. By necessarily excluding local and state level politicians, all three of these projects (as well as most other participatory democracy projects) fail to bring politics to the level where it really matters in terms of participation: the local level.

Ultimately, these projects are necessary resources for the participatory democracy ecosystem, but they are not sufficient to wholly define a participatory democracy online or off. In other words: we're not there yet. Access to structured, open data that is easily reusable, editable, and maintainable by communities should be just one of the goals at

the heart any project self-described as part of our participatory democracy. These are the values expunged by democracy itself: the dissolution of hierarchical systems dependent on individual leaders in favor of distributed action coordinated by members of interested communities. While the efforts of Trauberer, et. al are commendable and have certainly advanced the state of the art, it should be clear that they do not wholly satisfy the demands of a participatory democracy.

3.2 Specific Projects

In this section I will detail projects that while prima facie appear to be meaningful contributions to participatory democracy, but are too specific or too cost prohibitive for citizens to actually use. In short these tools are highly effective for their particular campaigns or candidates, but face serious obstacles for generalized use, thus preventing them from being considered true components of a participatory democracy.

3.2.1 Barack Obama's Get Out the Vote Call System

During the 2008 primaries Barack Obama's campaign developed a particular reputation for effectively utilizing technology and the Internet. One particularly interesting and significant feature of his campaign's website is the "Get Out the Vote" call system.[24] Essentially an easy-to-use interface built on top of a database of registered voter's names and phone numbers, Obama's web application encourages volunteers to make calls on his campaign's behalf. Users are given a simple list of names to choose from and then a phone number to call. Users must use their own telephone and dial using their own fingers.

A significant feature of Obama's site is its easy to use feedback mechanism. Users are presented with two categories of responses from their calls, one where the user was able to reach the callee, and another where the callee did not pickup. After clicking on one of the possible responses the system responds appropriately with more scripts and/or more names to call.

While a flawless integration of technology for advocating a democratic cause (a particular campaign in this case), we shouldn't consider Barack Obama's system as a legitimate constituent of a participatory democracy for a number of reasons. The most significant is that it is relegated to one candidate and useful for one race. This means that any users interested in using the system to contact anyone (citizens and politicians alike) for reasons relating to anything other than Obama's candidacy will have a difficult time repurposing its core functionality. While it is plausible to assume callers might use Obama's voter registration lists to campaign for other politicians (including opponents) and causes, this use is almost certainly outside the terms of use of the site and therefore could not be relied upon as an general tool for citizens.

It should also be noted that Obama's technology is about as closed as it gets: users don't even run the software on their own machines, the output is delivered across the web

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[22] "Congresspedia" SourceWatch. 8 May 2008 http://www.sourcewatch.org/index.php?title=Nancy_Balter&curid=56459&diff=315541&oldid=315540.

[23] "Wikipedia Stastics." Wikipedia. WMF. 8 May 2008 http://en.wikipedia.org/wiki/Special:Statistics

[24] "Get Out the Vote." Barack Obama. 8 May 2008 http://my.barackobama.com/page/contact/call

in the form of static HTML. There is no structured data available, and the database that powers the campaign is highly proprietary and costly.[25]

There's also the consideration that this kind of phone banking has little connection to participation in democracy. Though it is essential for campaigns to organize and canvass voters in a democratic race, citizens spend very little time participating in actual democracy: they are shilling their views to other voters on behalf of a candidate who is not yet in power and consequently have little interaction with seated politicians or legislators.

We should view Barack Obama's phone banking service as merely a demonstration of what a well organized and designed web application can do for a campaign, rather than an instance of an actual participatory democracy tool. It engages and encourages volunteers to work for Obama in a way that requires little overhead when compared to the analog requirements of traditional phone banking, but in the end does little to advance a true participatory democracy.

Part of my goal in designing Cause Caller was to mimic the ease of use of Obama's site but also to create a general tool that anyone can use for their particular campaign rather than one for a particular candidate that they may or may not support. Later in this paper I'll discuss how Cause Caller goes even farther than Obama's phonebanking application in removing the obstacles when organizing volunteers to participate in democracy.

3.2.2   MoveOn.org's Call for Change

MoveOn.org made headlines during the 2006 mid-term election when they claimed to have organized over seven million calls to voters in key districts and states.[26] The campaign utilized a program called "Call for Change" that directly linked MoveOn volunteers to voters using a voice-over-Internet-protocol application. Though accounts of how the program actually functioned are now scarce, the basic use case scenario went as follows: A citizen visits the site, types in their phone number, and then MoveOn's application automatically connects them to a sequential list of constituents in MoveOn's database. This application went even farther to remove some of the hassle associated with phone banking as users wouldn't even have to dial or keep track of the numbers themselves.

If we are to take MoveOn.org's claims seriously then their application had a tremendous effect during the 2006 mid-term election. But where is the "Call for Change" application now? Is MoveOn using it for any more campaigns?

Unfortunately there is scant information available about the project so its inclusion as general tool for participatory democracy is unlikely. Not only was "Call for Change" restricted to one campaign (and arguably, one political per-

spective or party), but it no longer seems to exist. Despite MoveOn's progressive stance on most political issues, their project remains proprietary and perhaps even discontinued.

3.2.3   Mobile Commons

Mobile Commons is the final application that I believe has relevancy to my project, but for reasons that will be clear, is not suited for general activist work in a participatory democracy. Mobile Commons[27] is a New York City startup with "big ambitions to change the way that people and organizations interact with their mobile phones."[28]

Designed mainly as way to organize people using SMS,[29] Mobile Commons has a suite of products designed to enable organizations to mobilize large groups of people to do particular actions. Organizations can import their contact databases into Mobile Commons' system and use it to target individual people who might be interested in an offer, issue, or product. Individuals targeted by a campaign through Mobile Commons will typically receive an SMS directing them to call a politician, write a letter, or get informed about an issue.

The biggest consideration we should make in evaluating Mobile Commons' is that their products are not available for direct use by the public: an organization must hire the company in order to execute a particular campaign. This means Mobile Commons is basically ineligible to be a general tool for participatory democracy. All campaigns must be organized by via a top-down agreement with a for-profit organization and all data remains proprietary if it is ever even shown to the public. Any given citizen is unable to engage with democracy through Mobile Commons as they must wait to be included in a campaign organized by the company.

It is then clear that while there are some tools that exist to help citizens directly and effectively participate in democracy as opposed to simply research about it, but they are too specific for general use. The average citizen who wants to organize around an issue and does not have a substantial budget to do so (or a campaign backing her) is left fantasizing about the *possibilities* of a participatory democracy as mediated by digital networks, and will most likely resort to the final set of tools that I'll investigate, those that are "too general or ineffective" for participatory democracy activism.

3.3   Suboptimal Tools

3.3.1   E-mail

Most people at some point have been the subject of a political campaign as organized by their friends, family, or associates. Usually this takes the form of a mass e-mail that is sent to hundreds, if not thousands, of people at once, imploring them to take action on a particular issue. While e-mail is a useful tool for contacting that many people, the response rates are unfortunately quite low.

[25] "Clinton Aides Databank Venture Breaks Ground in Politicking." The New York Times 12 04 2008 May 8 2008 http://www.nytimes.com/2008/04/12/us/politics/12vote.html

[26] "Move On Political Action Call for Change." Grassroots Campaigns. MoveOn.org. 8 May 2008 http://www.grassrootscampaigns.com/MoveOnC4C.php

[27] "Homepage." Mobile Commons. 8 May 2008 http://www.mcommons.com

[28] "About Us." Mobile Commons. 8 May 2008 http://www.mcommons.com/about-us

[29] SMS stands for "Short Messaging Service" also known as text messaging

Regular Internet users can expect anywhere from 1-2 e-mails a day all of the way up to thousands and it is easy for indirectly addressed e-mails[30] to get lost in the fray of day to day personal correspondence. Moreover, embedding directions inside e-mails to "do" something democratic can result in tedious work for the e-mail's author, as well as needless steps for the recipients. Combined with the torrent of spam that most users must endure it is easy to see why e-mail is suboptimal for encouraging participation in democracy.

Moreover, e-mail exists as a relatively static medium. Messages are dispatched, but there is little more interaction users have with a given message than merely reading and processing it. Sometimes links are clicked, sometimes message bodies are forwarded, but for the most part, it is difficult to make e-mail "more" participatory than it already is. Besides direct correspondence with representatives, it is hard to imagine how e-mail could further facilitate a participatory democracy.

So while e-mail is an essential tool in any activist's chest, mere reliance on the medium as an ends for a participatory democracy is shortsighted as digital networks are capable of more powerful communication and organization techniques.

3.3.2 Causes
In the wake of Facebook's "opening" of their platform for developers to create new applications, an application called "Causes" emerged as a fashionable way to integrate participatory democracy into the ever-growing social network. Causes allows users to organize and donate money for non-profits supporting particular issues. While the initial promise of Causes was clear, the network has yet to deliver substantial results, and has yet to demonstrate its indispensability for participatory democracy.[31]

The main problem behind Causes on Facebook is largely due to the fact that the application has a hard time distinguishing itself in users minds from "Groups," a feature already built into Facebook. Even though users have the ability to donate to a real non-profit with Causes, there is not much practical differentiation between joining a group and joining a Cause on Facebook as most users avoid donating.

Moreover, non-profit organizations with resources that are already stretched thin must spend time maintaining and promoting their Cause on Facebook, time that could otherwise be spent raising funds through offline interaction and correspondence.

While Causes certainly has the potential to grow into a participatory democracy platform, the actions it asks of its users (to join and to donate money) seem misplaced inside a social network and have yet to demonstrate their effectiveness.

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[30]Indirect E-mails are ones addressed to users via the CC or BCC field or to multiple recipients.

[31]The Network Neutrality cause on facebook has raised less than $1000 despite it one of the more popular causes on Facebook with over 10,000 supporters.

4.1 CommitteeCaller.com
Cause Caller is essentially an evolution of a previous project similarly named CommitteeCaller.com that I had built for a Shawn Van-Every's Redial class during the Fall of 2007. CommitteeCaller.com was a simple application that allowed sequential dialing to every member of a particular committee in the House or Senate. CommitteeCaller.com was designed to take the hassle out of calling every politician on a particular committee. Whereas previously an activist would have to organize a list of phone numbers themselves, CommitteeCaller.com could call their phone and patch them through to each politician without them ever having to look up a phone number. While CommitteeCaller.com worked well for the purpose that I built it for, it had several severe limitations that prevented it from being used in general activist work and thus could only superficially be considered a tool for participatory democracy.

First, it forced users to choose a committee in the house or senate to call. While this limitation may appear to be the point of the project, it constrained the number of causes and subsequently citizens that wanted to use it. This is because there are many issues and causes that are related to politicians that do not share membership of an individual committee. For example, if a user wanted to call all the politicians representing a particular state (the two senators and various representatives) they couldn't use CommitteeCaller. While it was possible for me, the project's maintainer, to create a new pseudo-committee containing all of the politicians in a particular state, it wasn't possible for users to easily do this through the front end of the site.

Another reason CommitteeCaller.com's functionality was limited was due to its internal database structure. While built upon publicly accessible data, CommitteeCaller's database was hidden inside ITP's MySQL server. This meant that users might not even know the phone numbers they were connecting to, and if those phone numbers didn't connect or was the wrong number, their only recourse would be to rate the call a 0 out of 5 when replying to CommitteeCaller's voice prompts. This left little room for feedback and community maintenance of CommitteeCaller's database.

More substantially, this also meant that users could not contribute to the database. After repeatedly showing the project to a number of interested activists, I noticed many had similar questions for my project. Almost all of them asked me if I had state level representatives in the database, a feature I unfortunately hadn't considered. I found myself sheepishly offering excuses about how large that database would be, and how difficult it would be to maintain or how expensive it would be. I eventually concluded that including state level politicians would be a feature I would have to incorporate into the next version CommitteeCaller.

One final limitation on my project was that CommitteeCaller.com existed as essentially a static page. Individual committees were not addressable and did not have their own URLs and were therefore un-shareable to others interested in contacting a particular committee.

With all of these limitations in mind, I set out to create a better and more generalized version of CommitteeCaller

that could enable anyone to create virtual phone banks to call politicians for any cause. I would rename the project, too, no longer would calls be limited to Committees, they would be defined by their cause.

The new project, Cause Caller, would also incorporate a kind of framework to allow editing and maintenance of the database by users, not just myself. Causes, or call queues, would be able to be created by users and I could avoid having to do "one-off" additions to the database. More importantly, I wanted the data created by users to be shareable and not just useful for Cause Caller.

During my preparation of Cause Caller I received an exciting invitation to be a part of Eyebeam's[32] FEEDBACK exhibition. The exhibition featured numerous works of contemporary art focused on issues surrounding the environment. Eyebeam wanted gallery patrons to feel some way that they could participate in "feedback" after absorbing the art in the show and felt that CommitteeCaller would be the ideal project to enable their goal. After coordinating a bit with the curators at Eyebeam we decided to focus on three local causes who could benefit from having gallery patrons phone bank on their behalf. The causes chosen were:

- SolarOne[33]

- New York Lawyers for the Public Interest[34]

- Transportation Alternatives[35]

During the first couple of weeks during March 2008 I worked closely with these organizations to develop a list of politicians and scripts that gallery goers could use to phonebank on their behalf. I also spent some time rebuilding CommitteeCaller so that it would work only over the phone. (See Figures 1, 2 3 4 for photos from the exhibition.)

Working with local causes on their particular issues proved to be an invaluable experience for me during the development of Cause Caller. One of the most important realizations that I came to was that each organization wanted to manage their cause in a different way. Transportation Alternatives was interested in having citizens contact all members of the New York State Senate, whereas SolarOne wanted members to contact a number of city level politicians, and New York Lawyers for the Public Interest wanted New York constituents to contact New York's federal senators.

These differing demands posed an added complexity to my project as the cause simply wouldn't be able to share the same database of politicians. Moreover, I would have to convert lists that the organizations provided me into my own database format. While I was happy to put this relatively small amount of labor into these three causes, I knew this wouldn't be viable option to scale the project.

I knew that deciding on a particular framework would shape Cause Caller from its beginning and would be a very important decision so I wanted to incorporate the experience and ideas I had garnered while developing the Eyebeam installation and working with local causes.

I finally decided that Cause caller would exist as essentially two separate but linked applications. The front end application would be the interface most users would interact with and would contain basically the same functionality of CommitteeCaller. A citizen could visit the site, type their phone number in, and begin iterating through the list of politicians supplied. The other half of Cause Caller would consist of an editable database of politicians, phone numbers, and causes. This database would be managed by the users themselves and anyone could enter their own cause or new politicians in.

I decided that user accounts would only be needed for maintenance of the database as most front end users can be uniquely identified by their phone number as there is an increasinly 1-to-1 correspondence of people to cell phones in the world.[36]

A wiki might be an ideal form to set this project up on, but I knew the problem with wikis was that they were bad about outputting structured data.[37] So while using a wiki might have helped my users research information, it wasn't going to be easily interfaced with my VoIP platform. I needed a way so that the data created by users could be easily accessed and retrieved by not only humans but also by applications.

Having recently toyed with Students For Free Culture's Semantic Media Wiki[38], I realized that the Semantic Media Wiki extension for Media Wiki[39] would be an ideal tool for collecting and sharing structured data that Cause Caller could use. The basic premise behind Semantic Media Wiki is to imbue wikis with the capability of creating semantic statements that can be later queried by a machine. Semantic statements in this case take the form of RDF "triples". Where normal text in a wiki would remain only human readable, text in a semantic media wiki could be machine readable as well, ideal for an application like Asterisk. This was the very same insight that Joshua Trauberer had regarding GovTrack.us, that his project should not only put out machine readable data, but data that conforms to the pre-established standard of RDF. Unfortunately Trauberer did not include contact information in his RDF output so I would be unable to use his data as the source for Cause Caller's wiki.

I decided that Cause Caller would run on top of a Semantic Media Wiki so that when users would add or update information they would (knowingly or not) be also creating machine readable data that could be used by my Asterisk

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[32]Eyebeam is a non-profit art and technology space in Chelsea
[33]http://www.SolarOne.org
[34]http://www.NYPLI.org
[35]http://www.TransporationAlternatives.org

[36]Though there are instances of many phones related to one person, there are less instances of many people related to one phone
[37]As mentioned above, Congresspedia lacks the ability to output structured data despite it being a wiki.
[38]http://www.freeculture.org/wiki
[39]http://www.semantic-mediawiki.org
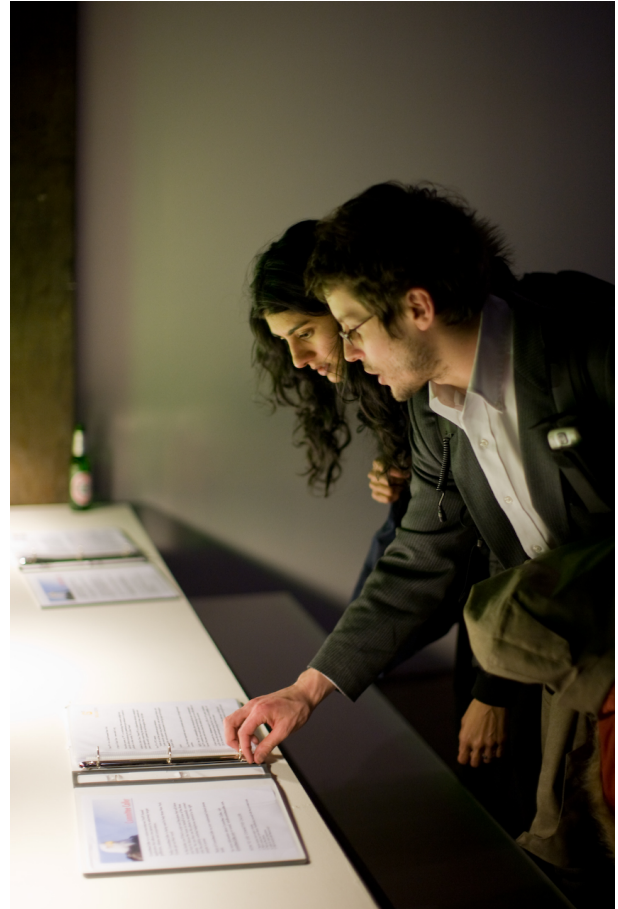
Figure 1: The phone banking station

Figure 3: Chris Neidl of SolarOne

Figure 2: A happy Committee Caller user

Figure 4: Three phones total

application. This machine readable data would be useful for other causes as well as anyone else developing applications who could use this data.

This capability would push Cause Caller into uncharted territory in the participatory democracy space. Not only would it function as an information repository (complete with information that would be shareable across platforms in the form of RDF data) but it would also be a generalized tool that citizens could use to create specific actions. Cause Caller could bridge the gaps between the information repositories, the "too specific tools" and the "too general tools."

Cause Caller would differentiate itself from other projects in the participatory democracy space because it would be a "live" application that could enable direct and immediate action. While projects like Barack Obama's Call application and MoveOn's call for change arguably existed as "live" applications they were bound to a particular campaign or candidate. Cause Caller is generalized enough to work for any cause whose organizers want volunteers to contact political representatives, but is specific enough to excite and engage audiences in a new way. Instead of vague commands to "do something" cause organizers could now point to a very real and very easy application that citizens could use to participate in democracy.

In the next section I'll explain how Cause Caller works and why I think it is successful in achieving this goal.

5. *THE NEW KID:* CAUSECALLER.COM
5.1   Basic Overview
Cause Caller's front page bears the following description:

> Cause Caller is a new way to power participatory democracy. It takes all the hassle out of creating phone banks and contacting politicians. Simply create a cause, and enter the names you want to contact. Now you can click to call immediately. Send everyone the URL, and they can start calling too. All calls are free and completed over the Internet.
>
> It's easy and free.
>
> Simply create a cause, and enter the names you want to contact. Now you can click to call immediately. Send everyone the URL, and they can start calling too. All calls are free and completed over the Internet.

5.2   User Interaction
Using Cause Caller is simple. Click the Causes at the top of the screen and click on a cause you're interested in phone banking for. Enter your phone number into the form and click the "Start Calling" button.

Cause Caller will then call you and ask you to press 1 to be connected with the first politician associated with the particular cause you've selected. The phone will ring, and you'll be connected to the front desk of that politician's office. You won't have to worry about remembering phone numbers or keeping track – Cause Caller will take care of

all of that for you. Once you're done speaking with the first politician, don't hang up on them, just press the * button. This will move you on to the second politician associated with the cause, and you'll move down the list. That's it!

Cause Caller will remember your phone number and cause, so you can come back at any time and pickup where you left off. Cause Caller does not enable politicians to contact citizens.

5.3   Use Cases
Cause Caller is mainly designed to help citizens participate in democracy by contacting their elected officials. "Causes" (the fundamental units of the project) exist as user-generated pages created by individuals organizing around a particular issue.

An example of a cause that might use cause caller is precisely the one that Coglianese refers to in his article.[40] Coglianese imagines that telecommunications infrastructure (and E-rulemaking in particular) could enable a local sanitation engineers to " ... become aware of and submit comments on relevant regulations."[41] Though Coglianese is specifically discussing E-rulemaking, we can see that his example is a worthy example of where Cause Caller could benefit a cause in a participatory democracy. By using Cause Caller the local sanitation engineers would a virtual and permanent place to direct supporters to phone bank from. Cause Caller supplies a necessary and useful tool for the engineers to get started participating in democracy.

5.4   Technical Details
Cause Caller's system involves several distinct free software platforms communicating with one another and sharing information. The entire system is hosted on Amazon's Elastic Cloud Compute Web Service which allows for dynamic scaling as well as on-the-fly file system imaging.

5.4.1   Front End
Cause Caller is written entirely in PHP. The front end of the website has four basic sections, Causes, Wiki, About, and Blog. The blog is a Wordpress install that has been customized to function within the general theme of Cause Caller. The Causes section contains a dynamically generated list of Causes as well as a short informational video detailing how to create a cause through the site. Each cause is hyperlinked to its permanent place on the Cause Caller site.

5.4.2   Semantic Media Wiki
Some of Cause Caller's most powerful functionality lives inside the Semantic Media Wiki[42] which is also running the Semantic Forms extension. There are two basic types of pages inside the wiki. One is a Cause and the other is a Politician. When a user clicks "Create a Politician" or "Create a Cause" they are taken to a basic HTML form which

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[40]Coglianese at 25

[41]Ibid.

[42]http://www.causecaller.com/wiki

instructs them to fill out the relevant information. In both cases the forms have required information and optional information. Once the form is saved the page is created inside the database and the relevant RDF triples are created. Some examples of the triples generated for politicians are shown in Figure 5.

Figure 5: Example of Politicians RDF Output

Cause Caller's Semantic Media Wiki also allows for robust querying of data. Users can use the Semantic Search function[43] as well as inline queries inside a particular page. For example the inline query:

```
{{#ask:
[[Category:Politicians]]
[[Politician type::Senator]]
[[Gender::Male]]
[[Party::Republican]]
|?Main phone
}}
```

Will generate a table of all Male Republican senators and their phone numbers inside a page.

5.4.3   Asterisk/Semantic Media Wiki Integration
Though Semantic Media Wiki is capable of outputting structured data that is machine readable, getting it to do so in a timely fashion turned out to be more challenging that I thought. While Semantic Media Wiki does store its information inside a MySQL database, it did not maintain an RDF endpoint.[44]. This limitation has since been remedied in a newer version of Semantic Media WIki but whose functionality has not be implemented in Cause Caller.

For now Cause Caller asks for specific RDF exports of particular pages on the fly[45] and then parses them using the ARC2 RDF parser[46] instead of using SPARQL queries. This increases the load (and parse time) for causes with many politicians (as all phone numbers must be retrieved from separate pages) and will not scale well to causes with more than 20 politicians.

Once the data is retrieved and parsed using ARC2's RDF parser, Cause Caller loads the data into a MySQL database on the Asterisk server and the user is called.

5.4.4   Asterisk/VoIP
The unique functionality of Cause Caller that enables users to connect to the Publicly Switched Telephone Network (PTSN) is handled by Asterisk, the open source PBX server. Asterisk runs as a service on an independent server that handles all of the call requests. The main logic of Cause Caller's Asterisk component is also written in PHP using the PHPAGI library. As users enter in their phone numbers into a particular Cause's page and click the button to begin calling, a "cause instance" is created inside the Asterisk server's MySQL database. The "cause instance" contains information about the user including their telephone number and the cause they've chosen as well as whether or not they've asked the system to call them back. At the same time Cause Caller places the selected cause's politicians into a heap inside the MySQL database.

Once the user is connected through the PSTN, Cause Caller looks up all the callees associated with the particular cause instance and retrieves their names, telephone numbers, and if applicable, the name of the chief of staff or legislative director. Cause Caller's Asterisk PHP script begins a loop through the list of callees and asks the user for confirmation to call each politician in the list. After each call is completed the callee row is updated to reflect that the call has been completed. This will allow Cause Caller to track user progress through a particular cause and resume where a user may have left off. Once the call queue is completed Cause Caller updates the cause instance row to reflect the change and the user hears a good bye message.

6.   RESULTS
I was able to achieve my goal of having Cause Caller ready a week before my thesis presentation and this has afforded me a good opportunity to observe interactions with the site. Cause Caller was launched with only two causes in its database, the "Demo Cause"[47] and SolarOne's "I Heart PV" Cause which I carried over from the Eyebeam exhibition. After a moderate amount of promotion[48] the following causes have been created since then:[49]

- Border Control Laptop Searches

- Border Control Laptop Searches - House

- No Torch in Tibet

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[43]http://www.causecaller.com/wiki/Special:Ask

[44]A RDF endpoint is essentially a file containing all RDF triples contained in the database

[45]Using   http://www.causecaller.com/wiki/Special: ExportRDF

[46]http://arc.semsol.org/

[47]http://www.causecaller.com/causes.php?c=Demo_ Cause

[48]Doctorow, Cory.   "CauseCaller – one-click to create a virtual phone-bank." BoingBoing.   30 April 2008. 30 April 2008 http://www.boingboing.net/2008/04/30/ causecaller-oneclick.html

[49]http://www.causecaller.com/causes.php

- Save the Andrew Heiskell Braille Collection

- I Heart PV: Expand Net-Metering for Renewables In New York State

- MA Campaign to Strengthen Human Services

- Support Connecticut House Bill 5852: An Act to Control Lyme Disease in Ct

- Permit Affordable Housing in Portland

- MI Equal Parenting Campaign

- Save California's Education: Really Fix the Budget

Almost all of these causes have added new politicians to the Cause Caller Wiki as well.

The site has received over 6,000 pageviews in the last week and has generated over 100 unique "cause instances" resulting in dozens of completed calls to actual politicians. Through the use of Google's News and Blog Alerts I have been able to track responses to the project across many blogs and news sites. The following are some excerpted quotes taken from informal reviews of the system:

> "I've been reading about Cause Caller on various BoingBoing posts but havent dug deeper into the story to see what it could do - until today. Its freakin awesome!Talk about the emerging power of social media via the internet." - *Millsworks.net - Friday, May 2, 2008 - Cause Caller*[50]

> "This Cause Caller system makes mass phone campaigns (top-down versions of which have been in existence for decades) more efficient, more grassroots, and easier to implement in a focused manner. Probably cheaper, too." - *The Group News Blog - Monday, May 5, 2008 - Great New Tool: Cause Caller*[51]

> "I'm usually not one to put a lot of faith in the system, but this tool looks like it could be helpful to many campaigns." - *Portland Independent Media Center - Monday, May 5, 2008 - Cause Caller: Free Automatic Phone Banks*[52]

> "So, I give to you the Save California: Really Fix the Budget Cause Caller. It's backbone is a wiki page, so if you want to change something about it, just sign up for an account and do so. Call the Governor, or the legislative leaders. Want to add your legislator? Just sign up for the wiki

and load them on there. It was getting a bit time consuming to load all those legislators, so I just went with the leaders so far." - *Calitics - Wednesday May 07, 2008 - Really Fix the Budget Cause Caller*[53]

> "I tried the "cause caller" just now. It works. Best thing since the jet engine." - *Terry Savery, Chair, Connecticut Coalition to Eradicate Lyme Disease, EradicateLymeDisease.org*[54]

While the initial response to CommitteeCaller was more significant in terms of quantity the response to Cause Caller has been more sustained and significant in terms of quality. CommitteeCaller had thousands of users visiting the site and very few actually making calls, and even fewer making calls to real politicians. Now, Cause Caller is appearing on various activist networks and its unique page views average a modest several hundred a day with dozens of actual phone calls going out to real politicians about real causes.

The fact that so many activists have visited the site and taught themselves how to enter data and causes into the database demonstrates that the short videos I created to explain the site's functionality work well. Compared to the amount of time I spent on customizing various causes for Committee Caller, I've spent very little time adding or cleaning data for new causes on Cause Caller. In my eyes, this is one of the greatest successes of the project as it establishes it as a self-sustaining community rather than a one-off project whose data must be maintained by a single person.

In terms of fulfilling the goal I set out during the initial development and research of Cause Caller I believe I've uncompromisingly achieved it. Cause Caller is a free, open system designed a general tool that allows citizens to engage in specific participation with democracy. Furthermore, the data and resources generated by users of the site benefits not only Cause Caller itself, but the Semantic Web in general and anyone looking to build a similar tool.

7. FUTURE WORK
There are a number of features I'm interested in adding to Cause Caller. The two most pressing are internationalization, call ratings and RDF data standardization.

7.1 Internationalization
Since launching Cause Caller one of the more frequent feature requests is to enable international calls. This is a feature that, while I believe it is possible to implement, it will not be a trivial upgrade. In addition, I am unsure as to the cost of enabling international calls to politicians outside the states. But it is something I am actively investigating and am interested in pursuing more seriously.

7.2 Call Ratings
I would like to have a way to enable call ratings for each individual call and each individual politician. Right now a

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[50] http://www.millsworks.net/blog/2008/05/02/cause-caller/

[51] http://www.groupnewsblog.net/2008/05/great-new-tool-cause-caller.html

[52] http://portland.indymedia.org/en/2008/05/375402.shtml

[53] http://calitics.com/showDiary.do?diaryId=5800

[54] Personal Correspondence

user has no way to signal that a particular phone number (or other bit of data) is incorrect while on the phone. Enabling a system to track bad data, as well as call quality will be integral for establishing a valuable metric for how well the site works. I would also like to create a way for users to rate particular calls on the site via an Netflix-like 5 star rating system.

7.3 RDF Data Standardization

While Cause Caller outputs valid RDF data, all of its schemas are were somewhat arbitrarily designed by myself. This is problematic as it prevents Cause Caller RDF data from merging with standard RDF data such as vCard[55] or FOAF.[56]

More substantially Cause Caller should be using some of the schemas that Joshua Trauberer created for GovTrack.us so that our data regarding politicians is compatible across sites. Semantic Media Wiki allows for the importation of schemas (or vocabularies in their terminology) such as FOAF and vCard so there's no reason I can't get them to work for Trauberer's schemas.

Ideally all of the data on Cause Caller will be defined by vocabularies that are not specific to the site and are defined by W3C standards or sites like Trauberer's GovTrack.us. This will enable maxim compatibility and cut down scheam proliferation.

7.4 SPARQL Queries

One final upgrade I want to make to the site is to enable real-time SPARQL queries of the dataset. While the version of Semantic Media Wiki I began work on did not support this functionality it seems to have been included in a recent upgrade.

Users will then be able to issue well-formed SPARQL queries of the RDF data on the site without having to export individual pages' RDF into a store. This will also mean that I can use the wiki's SPARQL query engine instead of having to parse RDF files on the fly for cause and politician retrieval. This will almost certainly improve the load times and responsiveness of the site.

8. CONCLUSIONS

The purpose of this paper has been first to survey some of theory of the integration between participatory democracy and technology, then to show that while current progress has been made in advancing the tools of our participatory democracy that there is still much more distance to cover, and finally, to argue that my project, Cause Caller, significantly contributes to that progress. While I hope this paper has succeeded in convincing its audience of these facts, I believe that Cause Caller itself stands as a meaningful and valuable example of a participatory democracy tool that needs no other justification.

Admittedly there is much more work to be done in the participatory democracy space and Cause Caller is only one example of what can be done with free software and free data. As data becomes more available and easier to use (through architectures like SMW, RDF and SPARQL) we will certainly see other applications that take democracy

Working on Cause Caller has been one of the most enjoyable experiences I've ever had developing a project. The data set of politicians, causes, committees and phone numbers presented an almost ideal subject to classify using a Semantic Media Wiki and Asterisk's robustness and flexibility allowed for a particularly unique development environment.

I'm looking forward to the different character of causes that will inevitably show up in my little corner of our participatory democracy and plan to remain involved and committed to developing Cause Caller into the future.

9. ACKNOWLEDGMENTS

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[55]vCard is the RDF standard for contact information.
[56]FOAF stands for "Friend of a Friend" and is the proposed standard for describing relationships in social networks.