The Public Tech Bottleneck

A Public Policy Capstone Reflection Paper from Travis Williams

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The last four years I have had the opportunity to work in several roles in the public sphere, both within both the government and non-profit organizations. In my studies I have seen technology drive powerful and disruptive change, but I have also experienced firsthand a strained relationship between tech and public facing organizations. Restricted budgets, high technical requirements, and huge stakes mean collaborators on the project of open democracy too often see technology as an adversary instead of a potential ally. The result is a bottleneck preventing potential public oriented tech from moving beyond the period of conception. Reflecting on my experience and on projects with the potential for development helps to elucidate the underlying causes of this uneasy relationship. More importantly during a time of overlapping crises, I want to take the opportunity to suggest how organizers can harness the power of tech to empower democracy based on my direct experience.

I have read and understood Brown University's Academic Code and pledge that this capstone project fully respects the principles of academic integrity defined in the code, including that the research conducted for it was carried out in accordance with the rules defined by the University's Institutional Review Board for research involving human subjects.

I agree that my capstone project can be made available to both the Brown Community and the general public for didactic purposes.

-- Travis Williams 4/14/2020

Thank you to both Brown University and John Hazen White for providing funding for my work over the last several years through the LINK and Hazen awards. Without this support none of this could have been possible.

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Additional thanks to my advisors Professor Anthony Levitas and Dean Besenia Rodriguez as well as Melissa Nicolaus, Jim Amspacher, Aaron Regunberg, and Kath Connolly. Their collective wisdom has guided me these last several years. Finally, the most thanks to my wonderful parents whose collective wisdom will guide me all my life.

Introduction

The last four years I studied government, politics, and computer science broadly while, thanks to the support of Brown University, I also had the opportunity to work in several roles across the government and non-profit public sphere. In this reflection I use the term “public sphere” to combine the government sector with parts of the non-profit and even the private sectors focused on public good. I mean to convey that there is huge variance in the ways we conceptualize and refer to public-facing organizations. Some groups will change classifications over time, exist as multiple organizations simultaneously, or even stray outside the model of sectors altogether. Though the folks staffing union halls, government buildings, and issue campaigns are all doing distinctly important work, groups organized around public benefit tend towards some shared traits that bind them together into a single sphere.

In the realm of public policy there is a strained relationship with the powerful new technologies of the digital era. In my studies I have seen technology drive powerfully disruptive change through companies like Microsoft, Amazon, Facebook, and Google. My firsthand experience with technology in the public sphere, however, has not been a positive one. Stories of tech giants like Uber preempting laws are just one facet of the struggle to make tech work for democracy. Somehow the sleek interfaces, innovative applications, and the decentralized designs that thrive in Silicon Valley are absent in the tools employed by public-facing organizations. Instead, the public sphere seems to lag a step behind the private in application and regulation. Part of the problem within the public sphere is restricted budgets, high technical requirements, and huge stakes. Organizers rarely see investing in new tech as an endeavor worth the resources, or simply view the project as unfeasible. Technology can even come to be seen an adversary to the project of open democracy rather than a potential ally. I call this

collection of factors slowing potential public-oriented tech from moving past conception the "public tech bottleneck."

My firsthand work developing a tool for voter outreach has made clearer how the public tech bottleneck works, but more importantly shown me how we may be able to push through it. The digital age has brought us an exponentially greater capacity to cooperate for the common good, but only if we seize the opportunity.

Background

Early in my time at Brown I worked in the public sphere through an after school tutoring program at a local elementary school. However, my organizing work in the public sphere did not start until I met Aaron Regunberg in early 2018. He was a member of the Rhode Island House of Representatives at the time, and also a recent Brown alum. He came back to his alma mater to speak about his path to politics, and I attended the open meeting out of curiosity. Aaron's conception of actively engaging with the public sphere to demand a more inclusive, anti-racist, anti-sexist society, as well as one more responsive to the overlapping justice, housing, health, environmental, and economic crises of the modern day. I went up to talk to him after he spoke to learn more. Little did I know that this was the beginning of my senior capstone project.

Campaign

Aaron encouraged us to get involved, and I was so inspired by his vision of compassionate government that I channeled my desire to help into volunteering on his campaign for Rhode Island Lieutenant Governor. After classes I reached out to volunteers and voters to help schedule events and talk to people about the issues that mattered to them. In the summer of 2018, I even joined the campaign in a full-time capacity thanks to Brown University's LINK

funding. The campaign ramped up and so did my duties. Part of my job became supporting large groups of volunteers who were doing the outreach I had done previously. By automating parts of the campaign data entry process and designing spreadsheet tools to help with their daily tasks I was able to speed up their work.

While working on Aaron's team, I saw the major components of a campaign from finance to field and began building my skillset as a digital engineer. By developing these tools using free software I saved the campaign thousands of dollars that would have otherwise been spent on subscriptions to other services. This was when I first began seeing the underutilization of digital tools in the public sphere, an issue that our campaign began to address by developing new tools. My solutions were not perfect replacements, but they did the job. What would an issue campaign with a hairline budget and no fulltime staff do in the same situation? It is clear how this lack of options limits the possibilities of open democracy.

Additionally, the on- and off-year cycle of elections is not ideal for innovating technology, which often needs sustained development and the ability to test. Larger organizations that are able to invest the amount of resources necessary to develop these tools ultimately get a competitive advantage. Good tech helps them secure their funding over competing organizations, which means they do not want to share. This is not a unique problem, but it is particularly harmful in the context of holding back our ability to perform collective action.

Government

After the election cycle, in early 2019, I began working in Providence City Hall. I again started off small, just making calls around to local preschools collecting information about things like class size to help shape policy. As my time in the office went on, I began compiling reports on more topics such as forestry, sustainability, and housing. As the eyes for the city, I built our

understanding of these problems by hunting down information and figuring out how to make it useful.

From inside the office of the mayor, I continued to learn about the public sphere and saw the need for new technology to augment it. My work built our understanding of important issues. However, a lot of my time was taken up by combing through reports for information and creating new ways to display it, a process that could be streamlined by the use of established tech systems. Administration, however, frequently cycle out in government, and their goals and demands cycle with them. This makes it hard to sustain the demand necessary to develop new tech.

Digital Organizing

In September of 2018 Kath Connolly approached me to help her develop a new tool for voter outreach. In a previous campaign, she had worked out an idea to let volunteers “adopt” voters with a simple spreadsheet. She had seen my work developing more complex tools on the Regunberg campaign and wanted to work together to expand on the concept during the off-election season. Since then we have continued to iterate and develop the project while picking up more part time collaborators along the way. Digital organizing has become increasingly feasible, and now even essential.

The first thing Kath and I did before actually make anything concrete was to have several conversations about our goals. We wanted to make something to support organizers in a powerful way, and we both had valuable experience in the social sphere giving us unique perspective on how create that support. I knew intimately how important it was to have some automated elements of data entry for volunteers, while she knew what actions might be useful for an organizer to do repeatedly and quickly.

We knew we wanted to refine a low-cost tool to support campaign volunteers to reach out to voters digitally. We wanted to support the online interactions between organizers and volunteers and record accurate data on voter contact. Beyond these use requirements, there were also system requirements. To support our goals of open democracy we needed data security, ease of use, relatively low cost of implementation, and clear documentation. A record of how the system was built and how data flows within it allows for a tool to stand up to the shifting staffing typical of public facing projects.

After we had gone through our goals and a sent few sketches back and forth, I began to develop a prototype for a decentralized digital voter outreach tool using the Google suite. Figure 1 shows a proposed flow of data through a series of spreadsheets allowing for a campaign to supplement traditional voter outreach methods with Kath's adoption idea. The large rectangles represent users, while the nested boxes represent individual pages. The arrows show the flow of data through the system.

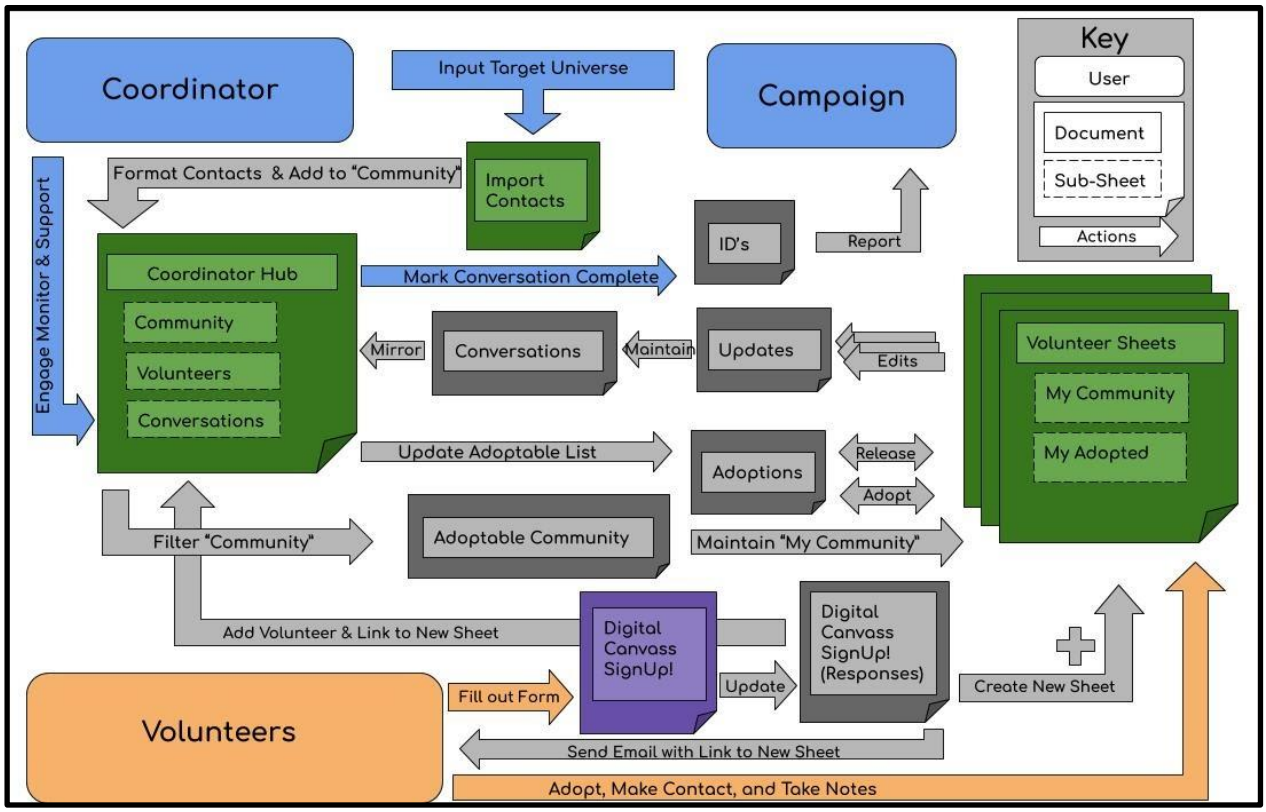

Figure 1

First the campaign identifies a group of voters to target in a spreadsheet. Next, a coordinator imports those voters into a pool to be viewed and later adopted. Separately, volunteers sign up to participate by filling out a form or by being added manually by the coordinator. The volunteer gets an email with a link to their individual sheet for recording data. From there the volunteer can review the pool and adopt specific voters. The chosen voters are added to their individual sheet, where the volunteers can record their contact with those voters. Each available voter can be adopted by several volunteers who agree to reach out with information about the campaign and ask for their support for the candidate. The coordinator supports volunteers and monitors the recorded information about the conversations in their coordinator hub. When a volunteer has completed contact with a voter, the coordinator assigns an ID to that voter to report it back to the campaign in a format compatible with other organizing software.

The fully implemented tool would manage traditional and virtual voter outreach and make sense of the collected data all in one place. Campaigns would be able to build and track geographic groups for strategic decision making. Any issue or electoral campaigns could use this light, versatile set of tools as a supplement to other available software or as an alternative. The decentralized nature of the design would allow volunteers to build ownership in the campaign and strengthen their democratic community. The tool would create a ladder of engagement and make volunteers more effective wherever they are.

Even with this relatively straightforward task of recording data, the flow of information can be quite complex. But the result could be a powerful virtual tool that would allow a well-coordinated campaign with a small staff to engage more meaningfully with more people than ever before. However, limited access to data and skills are barriers holding back waves of collective action.

The Bottleneck

There is no single, simple reason as to why household name public technology projects are far and few between. I have in my work seen several, often overlapping factors that restrict technology from the broad goals of open democracy. Securing the resources to invest is always difficult, and even when those resources are found the result is not always ideal due to the high demands placed on the end product. Though ideally public-facing tech would be cheap, robust, and reliable, in practice you can often only expect two out of the three.

Funding

The first and often most urgent factor restricting technological innovation in the public sector is the need to secure funding. Any long-term project operating within a capitalist structure needs to secure a means of long-term funding; developing new technology for the public good is no exception. Rather than finding a way to extract value from their target population, say voters or volunteers, the organizers may seek donations or grant money, or join a larger organization that can do those things. These are highly competitive sources, but still more feasible than finding investors who accept “public good” as their return. If a government office or small organization is going to pay for or even develop a tool, a brand-new technology is the untested option that might waste valuable dollars.

The tool I have worked on has existed as a series of side projects for a couple years. Several groups with funding have collaborated on it, but my work on it has never been directly funded. In theory it could make it all the way to a final product this way, but limited funding means limited development time.

Requirements

A major reason development costs are especially high for tech in the public sector is the need to meet a variety of legal and security requirements. While Silicon Valley can try to preempt existing regulations, entities in the public sector are more entwined with the law. Any tool using voter data has clear elevated security needs, while any app a local government puts out Is probably going to go through their legal department first.

Many of these barriers to entry are safeguards representing the need for careful use of these novel tools. Other requirements feel more arbitrary, such as the ones created by existing industry standard tools. NGP VAN is an incredibly extensive database of contacts used by the Democratic party to track their field and finance outreach attempts. It does not do everything a

campaign needs, but any campaign would be blessed to have access to it. The software is pricy on its own, but the Democratic party may provide it for free, as is often the case with their nominees. From this one technology there are ripple effects throughout the whole sector. Any similar database is not only going to have to compete with a massive protected database, but also with the conditionally free price tag for some campaigns. Almost any piece of campaign technology needs to interface with NGP VAN in some way, or at the very least be able to save and read comparable data. These difficulties add up, and then a phone application doing outreach for an issue campaign might still be spending resources to track the VAN ID of targets.

Automating any sensitive process requires giving machines data privileges that are normally reserved for humans. This can be tricky at any scale, but when a project gets big or goes public, security becomes one of the top issues. Data security with this kind of project involves trying to separate out permissions and regulate data sharing between users and databases. In effect this creates a lot of background code that can be complex and difficult to maintain. This creates a higher bar for the creation and implementation of these public oriented projects.

Stakes

The last factor slowing the creation of public facing tools is the stakes. There is so much on the line in almost every public project that innovation, while helpful, would not be feasible. You can test and iterate on a delivery service app, taking the failures as they come and learning from the data on a lower scale. This option is not available when a true test of the app needs an election year and an invested campaign or a disaster to provide relief for. In these high-stakes moments, the tested option again can seem like the only reasonable one. Why should an issue campaign be the one to spend their whole budget designing a new tool when those staff could be making

calls and knocking doors in that time? And as far as the cost of failure, one need only look at the backlash produced when a government website crashes.

When an organizer operating in the public sphere opts to use technology, they will tend toward the safer and smaller option. This limits the resources spent and the chance for a disastrous result. Why try to build a tool that does voter outreach and volunteer management, and stores and shares campaign data, when each step along the way has chance of breaking and leaving the rest of the operation hanging? Tech development needs steady iterations, some of which need to be exploratory, but a campaign does not want to be trying to teach volunteers a new system every week when they could be making calls.

Paths Forward

Now that we have a better understanding of the underlying causes for the bottleneck, what can we do to advance tech through to the public sphere? To explore those options, let's take the voter outreach tool as an example again. The project exists at a crossroads with several paths ahead, each with positives and negatives. We have to do something. Each approach addresses the hurdles we saw before in its own way and may even help remove them altogether.

Open Source

The first path to explore for increased public tech is an open source project managed by a small team. Instead of finding the resources for the larger staff needed to develop a tool, a group of a few people can organize and maintain a hosted code base for a project to be developed by anyone. My team could build out our prototype as an add-on for free software and overcome

many of the cost hurdles to development and access though collaboration. Our project might take donations or charge a fee to help set up or tweak the tool for a specific client, but otherwise we could openly share improvements as we made them.

The open source model of development only works with a high buy-in level from the community. The tool can only get more powerful if it is good enough initially to draw in more collaborators and users. The same can be said for securing funding for the budget, though it may be smaller.

If organizers widely adopted this method, it would have huge benefits for open democracy. The number of viable candidates and issue campaigns would increase exponentially as anyone can download all the important digital tools to run a campaign. Organizers could build a standalone application or as a series of possible supports to other big-name options. One doesn't have to completely replace an existing tool to find an opportunity to innovate. The voter outreach tool could work with another service to record data from traditional phone and door methods or implement those services later.

In-House

The second theoretical path forward for a project in development is to find a sponsoring group to help create the tool in-house using their resources. My collaborators and I could take our designs to a political party and offer to develop it. Depending on the scale of the party, this could mean stable access to the supports necessary for developing a tool such as this: a steady funding stream, but also reliable access to voters and people willing to test prototypes. The result would be a product tailor-made to the needs of whatever group will sponsor the new tech.

The downside of this path is that as part of a larger project, the tool will almost certainly become a secondary concern to whatever the main goals of the sponsoring organization are. First you

must prove the tech is worth the investment, and then even if the development team is getting more support, they may be asked to work instead to respond to the continually shifting demands of the public sector. A team brought on to develop new tech can quickly find themselves running tech support instead. Furthermore, when the project is finished, the tool may not be accessible outside of the single organization, further tightening the bottleneck.

As the tool will likely stay internal, security and stakes may both be lower. Security remains a concern, but it is likely that the people using the tech will all be supporters. In this case, the main thing is to maintain a secure data base, which may take investment from the organization, but will be a valuable resource in any campaign.

Selling Out

The last path for aspiring public tech is to find a way to monetize and sell out--possibly selling the project to be incorporated into a larger tool, or just finding a way to charge for the service. Though this option strays the farthest from the public sphere, the development focus can remain on the project and the potential for funding is very large. It is possible that the cleanest version of the voter outreach tool I have developed would come from us selling it to NGP VAN or a competing database.

Despite the potential for explosive growth that this path offers, it should be reserved only for certain compatible initiatives with appropriate means of funding. As we place profit instead of people at the center of our design, we also give up control. A tool for registering voters that seeks out only wealthy voters will not expand our democracy.

Conclusion

My work has given me a unique perspective on the development of technology in the public sphere. The current system suffocates technology that could potentially improve the lives of folks across the world. Even as we push against these forces, my project sits at a standstill as we try to find the right path forward. But from here I see incredible potential and even the obstacles I can see are surmountable.

Ultimately it is not possible to say which path for development is correct to tend towards, not for my project nor for any other. Solving this bottleneck will take many unique solutions to individual problems. However, we should be heartened by the variety of potential method for driving the development of tech in the public sector, each with their own costs and benefits.

The most important thing for the reader to take away is that we need more people exploring the potential of tech for the public sphere. In a time of overlapping crises in housing, economics, health, and the environment, we need the common good to be empowered with the best of our designs. Thankfully, any success that breaks through the bottleneck makes future innovations more feasible.

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