Design Intervention in Barriers to Services Related to Homelessness in Atlanta

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Introduction

For people living in the United States who do not speak English, there are significant barriers to accessing services and resources related to homelessness. Homeless shelters in Atlanta operate on a very limited budget, turning away many people every day. Individual shelters have different physical and human resources, with beds and translators as two of the most critical and most strained. Non-English speakers and vulnerable populations are at a greater risk of issues in the shelter system, so a lack of resources available to them at shelters affects them the most. By better sharing resources between shelters and support organizations, these particularly vulnerable people can be better served by the system and perhaps better access the system.

Problem Overview

Accessing important information in a timely manner is a significant problem in many contexts, from health to crisis response to social programs. This is especially the case in developing countries where information and communication technology (ICT) is less prevalent and robust than developed countries like the U.S. But even here there are similar issues that could be improved by how ICTs have been used in developing countries. This is especially the case among low-resource nonprofits and crowdsourced projects.

Populations

We primarily are concerned with people experiencing homelessness and those who directly assist them, such as friends, family, and social workers. Although many of these people have a social network that they can seek help from (Hersberger, 2003; Le Dantec & Edwards, 2008), they still experience hardship and lack of service use due in part to factors of information poverty, including issues of digital divides and avoidance of confirmation of one's own poverty (Chatman, 1996). LeDantec and Edwards (ibid.) also have suggested that meaningful technology use among people experiencing homelessness, even if they do use highly capable ICT like mobile phones, is dependent on social factors. Non-English speakers and vulnerable populations are at a greater risk of issues in the shelter system, so a lack of resources available to them at shelters affects them the most. Reaching a shelter to begin with is also a major issue, as most public transportation information is not immediately

available in other languages. Also, many individuals have difficulty locating shelters because they aren't aware of what information to search for online to find a resource to assist them.

Our second most important stakeholders in this research are service providers, including shelters, soup kitchens, food pantries, health providers, and more.

Considering the scope of this project and limited resources, we were limited by who we could directly engage with for participation. We also considered recruiting people who have experienced homelessness, however they are a vulnerable population protected by IRB protocols for engagement. Thus, we did not recruit these people and relied on public data collected on city, county, state, and national levels.

Our participants included people who answered phones at homeless shelters and a city official and politician, in addition to our own experience in shelters and working with service providers and people experiencing homelessness.

Existing System and Its Barriers

We can understand their relationships through these interviews from a system map (Figure 1) exploring the sociotechnical factors that could be places for design intervention.

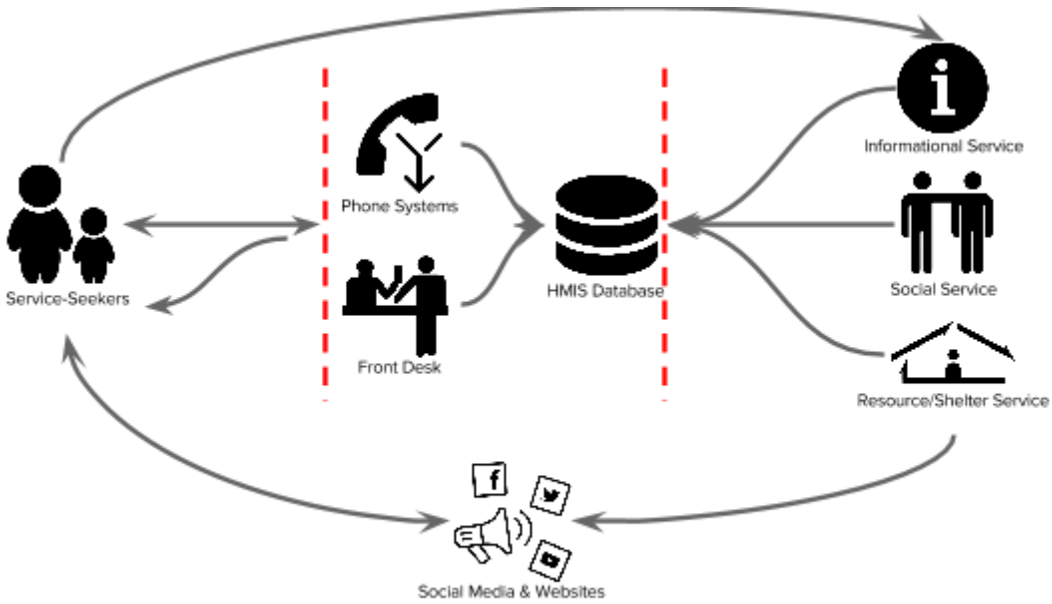


Figure 1: System map of interactions between social and technical actors in and out of the system. The dashed lines indicate where barriers to accessing the system exist. The solid lines indicate the direction of engagement or flow of information.

From this research and as the diagram indicates, there are significant barriers to accessing the formal system for remediating homelessness. People experiencing (or feel they may need to soon) try to seek social and resource services, and vice-versa, but they can be rebuffed by language barriers at both in-person and phone line points of contact. If they're able to get into the system, they are immediately added to HMIS,

or Homeless Management Information System, to share data about each other. This is the technical element to provide what the U.S. Department of Housing and Urban Development calls the “continuum of care” that states extend to meet the various needs of people who use these services (Georgia Department of Community Affairs, 2016). When a person uses one of these services, like medical or a bed, the service provider logs it to HMIS (Figure 2), allowing this networking actor to coordinate care with other providers.

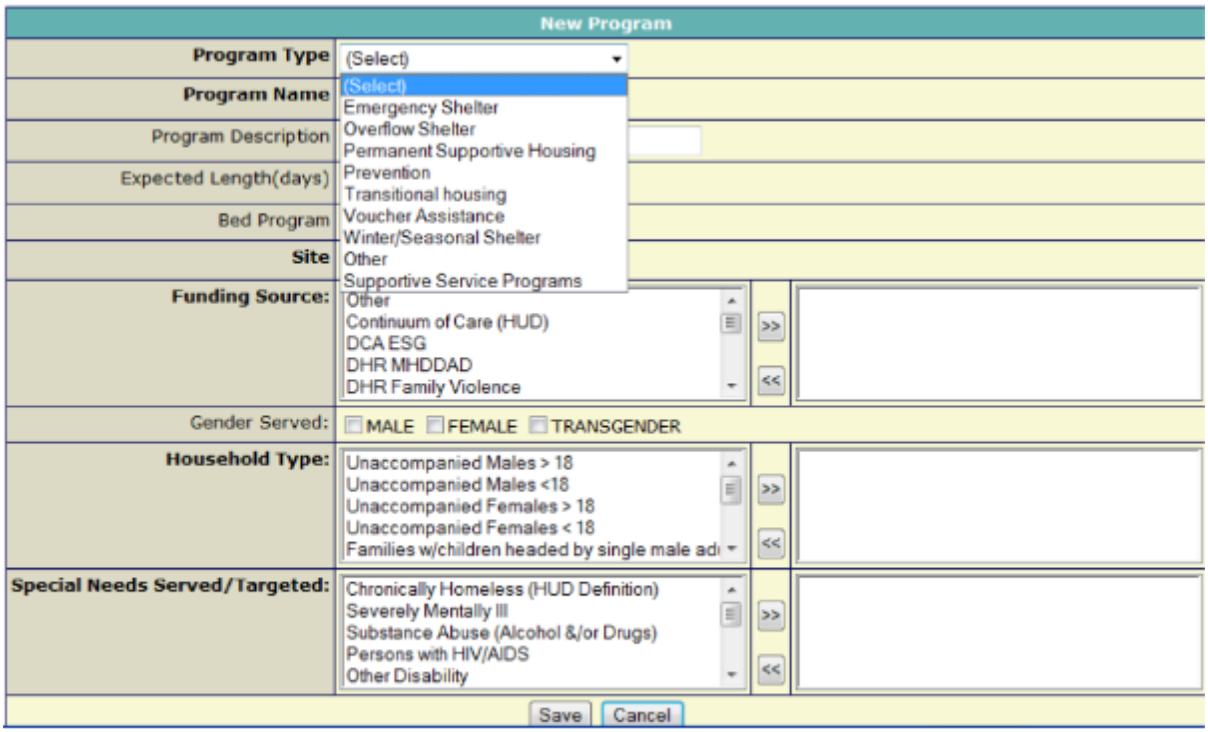


Figure 2: HMIS system Pathways used by Georgia

However, the issues we are addressing are barriers to accessing this system in the first place.

On the other side, services, including information, personal support, and resources, can join the system, but there are similar barriers in addition to others like HIPAA . Only if they are in the system can shelters direct them there. Finally, both people experiencing homelessness and many service providers, in and out of the HMIS, use the internet, especially social media, to find and post information (Corinth, 2016). This is generally not the case for shelters who do the networking.

These barriers coincide with Keniston’s (2003) and Selwyn’s (2004) descriptions of digital divides. While there are significant barriers not related to digital media, the significant interest and investment in electronic systems for people to access services and services themselves administering their business demonstrates clear opportunities for critique and suggestions for intervention. As such, we seek to improve how homeless shelters in Atlanta manage their resources, especially when

there are incidents or conditions that require immediate attention to and use of them, and to discover these events in a timely manner.

Design Intervention

Our design intervention, briefly described, is a suggestion of a way to model the information in this space and use it as a series of services. Our service design perspective is influenced by works cited, looking at systemic views of homelessness, throughout this paper as well as its use in developing countries (Cabrero et al., 2015) and the HCI for development community (Ramanujapuram & Akkihal, 2014; Blomberg & Evenson, 2006).

In particular, we are interested in providing touchpoints that would enable people to report incidents related to barriers to the system. Similar systems in other areas exist, such as customer-relationship management (CRM) systems, help forums, technical support, and even could be compared to Yelp and Amazon reviews. We don't intend to implement a rating system for individual care providers, but we don't discount the possibility of such a service to be relevant and potentially useful.

There is a similar system that we take much inspiration from, in both their information model and touchpoints. The Georgia Tech eDemocracy group has developed a suite of tools and services for election monitoring that has been iterated on by and with stakeholders in developing countries (Lazarus & Saraf, 2015; Adebola et al., 2013). The tools are primarily for reporting and responding to election day emergencies. We take inspiration from this to apply to our design intervention called ShelterShare.

ShelterShare

Like eDemocracy, our work is focused on social emergencies at the intersection of individual need and systemic provision. When a person experiencing homelessness first arrives at a service provider, they are likely in an emergency situation where failure to meet this need could result in significant endangerment. Similarly, eDemocracy is focused on reporting instances of voter fraud, violence at polling places, and other instances of systemic deprivation. It achieves this end by providing multiple ways for these instances to be reported, an aggregation and analysis point for dedicated polling places watchers, and a public web presence for increased visibility.

Also similar to eDemocracy, our approach is to develop a system rather than piece of technology to address this issue of barriers to services related to homelessness. They addressed their issue of systemic deprivation of democratic processes, especially voting, by collecting information about election progress and the delivery of that information in a way that makes sense to different actors involved in this system.

Functional Overview

Both our and the eDemocracy works can be described as a monitoring system that collates data from organized sources involving reports of issues. Information is organized by different touchpoints for people who are trained or untrained in identifying and describing these issues as reports. For example, a social worker or election monitor would be trained in reporting issues, whereas a distressed person experiencing an issue in either case would be an untrained source of information. The system also takes in reports from public sources, like social media and web feeds. These reports are all gathered and presented in another touchpoint for people who are dedicated to monitoring these reports and deciding whether they require verification and then escalated to parties who can directly address them. These individual touchpoints would be similar in function to the system as described in Figure 2, which is a model of the eDemocracy system.

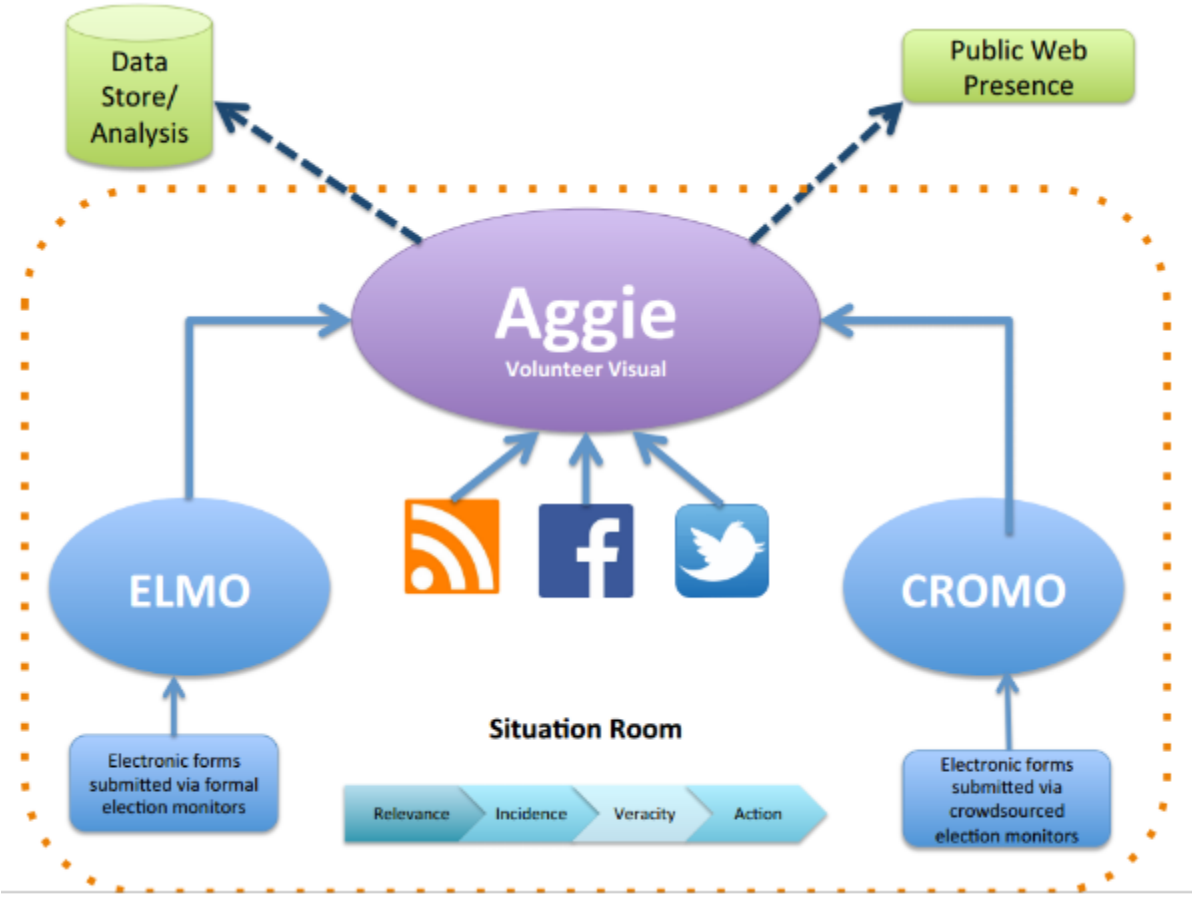


Figure 2: System diagram of the eDemocracy system, from https://vip.gatech.edu/edemocracy/vip-edemocracy.html

ELMO is eDemocracy's touchpoint for trained people to submit reports of issues, and CROMO is their touchpoint for untrained (crowdsourced) reports. The "situation room" would be a physical or digital space for people to monitor reports actively or passively and decide to validate or escalate reports as incidents to address. There is also the

opportunity to share these incidents publicly to further increase awareness of these issues.

The individual touchpoints require mobile devices such as phones and tablets to submit reports but could also be submitted via any internet-enabled device such as laptops or kiosks. The context of use would determine what form this may take to be most appropriate for users. Reports are aggregated in a database that algorithms could parse to flag incidents involving certain keywords that indicate urgency, or it could automatically sort reports by shelter or reporter or other if the touchpoints provide organized fields for this information. This would allow the "situation room" to be better organized and thus more quickly acted upon. Reports from the deployment of this system in Nigeria, for example, numbered in the hundreds of thousands within a relatively short amount of time for the number of people involved in the situation room. For this reason, it may be useful to also have a public-facing website that would allow people incidentally using computers to discover and potentially share or act on this information.

Scenario

A social worker attempting to persuade a person living on the street to come to a shelter and seek medical services may check the number of beds available in Atlanta on a mobile phone application connected to the ShelterShare system. The person may only speak Spanish and tell the worker that they were unable to access this information when they called the phone number of a shelter. The person said that when they told their sister, who also does not speak English, she shared this incident on Facebook. The social worker searches for and finds this post via the social media aggregator through ShelterShare and escalates it, tagging the shelter in question. At this point, the system has provided a way for the social worker to check current information about services, discover social media posts about an issue, create a report about this issue, and escalate it to notify relevant parties.

Literature Review

We found research conducted by the Institute for Children, Poverty, and Homelessness that targeted language as a crucial barrier that restricted homeless families of Hispanic origin from entering the homeless shelter system. The research also discussed other pertinent barriers such as the fact that this population feared the deportation of their undocumented relatives, and consequently often avoided approaching agency-run social services. Also, it stated that, the demographic 'Hispanic' joins many diverse social groups under a single category when in reality Puerto Ricans, Mexicans, and Peruvians each have demands that need to be addressed separately.

Therefore through ShelterShare, we are determined to help different homeless shelters in the region to share information and more effectively mobilize resources to meet the needs of the Hispanic community.

Methodology

Previous work

We first took interest in this specific problem space concerning Hispanic speakers in the Atlanta homeless shelter system after a personal experience with a Puerto Rican mother and two children at the Salvation Army homeless shelter last fall. One of the researchers was working at Centennial Academy, an Elementary/Middle School which is part of the Atlanta Public School System, as a Teaching Assistant Intern when one day she was asked to assist the school's social worker by serving as a translator for a distressed mother. The mother was relieved when she was finally able to speak Spanish to someone who understood, as she described the frustration she had encountered earlier that morning at the homeless shelter down the road. Initially, they had refused to take her in because of the fact that her ID said she was from Dekalb County and that shelter only serviced Fulton County. After pleading with her two children at the doorstep of the shelter, they were eventually provided with a room that had opened up. The mother described the encounter with the workers at the shelter as very stressful and offensive. She felt like they were rude to her because she didn't speak English well and that they kept laughing amongst themselves because she couldn't understand. For the children to be enrolled at the school they needed documentation from the homeless shelter stating that was their current place of residence, though the mother explained that she didn't want to go back because they wouldn't understand her. Therefore, the researcher agreed to walk back to the shelter with her and to facilitate the process of filling out the paperwork and translating the personal information needed for the documentation. Once there, the researcher understood the mother's annoyance as the workers laughed and said 'hola' sarcastically. Next, the majority of the 25 pages of written documentation was only in English, so the researcher listened to the mother's responses and transcribed all the information.

After this encounter, the researcher reflected on the experience and was alarmed by the countless barriers to entry the homeless family experienced. Language was the most apparent barrier which caused further distress for both the mother and the workers. The lack of any translation service, despite the fact that in this day in age more people in the U.S are bilingual with particularly Spanish and English, was a major flaw in the system that we were encouraged to further explore.

Focus Group

We had previous experience working with the eDemocracy team and drew from their publications. We also attended a lecture by the academic advisor for the team, Dr. Ellen Zegura, who provided further background and conceptual linkage to issues of ICT and poverty. We followed this up with an unstructured interview with Zegura and the development team to discover current issues with the system and whether it could be applicable to our domain. These influenced a survey of our class peers.

Survey

Based on that and the goals of this class, we decided to conduct a survey in class and with people outside of class. Our survey was focused on new applications for their Aggie ("situation room" touchpoint), which aggregates media feeds and allows people to flag them for further inspection. For example, an election monitor might send in a report or a voter might Tweet that there is some malfeasance at a polling place, which would be picked up by Aggie, reported by a moderator, and then dispatched the information to a party to handle the issue. The survey did not mention Aggie, but asked very broad questions about the application's uses and potential areas of expanding its use. Questions included:

1. What was the last large-scale event you attended or were aware of (over 1000) that drew significant media attention (both social media/mass media etc)?
2. How were you involved?
3. Did anything significant occur during the event that you found out about after?
4. What forms of media/social media did you engage with during the event?

Unstructured Interviews

We also recruited one participant from an external project we are loosely affiliated with called Shelter Connect. A local group dedicated to civic programming developed this as an information system for sharing shelters' bed availability. This team was advised by a city official involved in local issues of homelessness. We conducted an unstructured interview with both this official and Shelter Share developers to discover issues with local homelessness and the technical steps to address them, respectively.

Poster

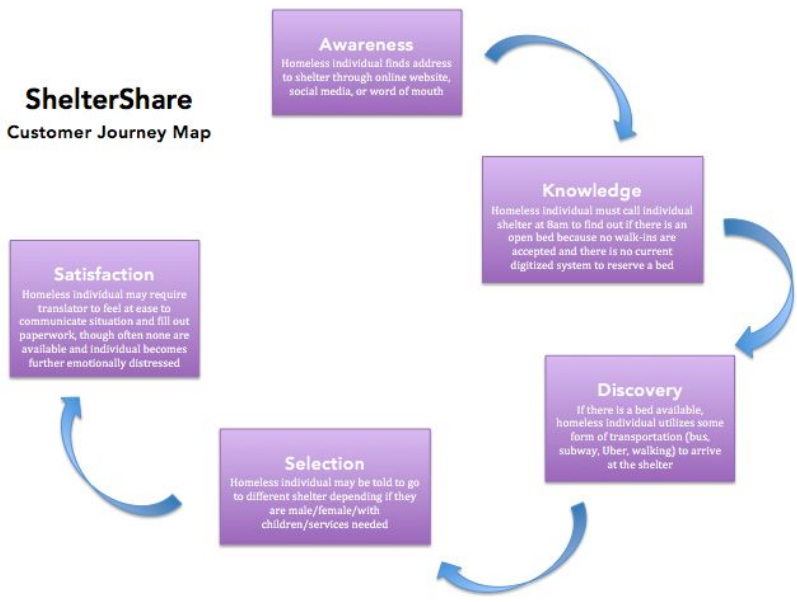
We presented our work up to this point in the form of a report, video, and poster to attendees of a poster session for other students' projects "geared towards creating a better world" (Georgia Tech, 2016). From this we received feedback on our direction and presentation of material.

Ethnomethodology of calling shelters

To gain insight into what resources were available for Spanish speakers trying to enter the shelter system in Atlanta, the researcher first compiled a list of homeless shelters by geographical location. She then proceeded to call each shelter with the goal of having the following questions answered:

- How do shelters communicate to one another and share information regarding bed availability?
- What forms of support systems exist for Spanish speakers?
- Are there native translators on staff at certain shelters?
- How are shelters made visible to Hispanic community?
- Do they turn people away when no availability?
- Is there a connection between different shelters to link Spanish speaking workers to those in need of services who only speak Spanish?

Unfortunately, the calls were largely unsuccessful in actually obtaining any responses. When the line was picked up, the researcher would say, “Hello! I’m a student from Georgia Tech interested in asking some questions to obtain information about the shelter system in Atlanta for a project.” Before any more could be said, each person on the other end of line would either say, ‘let me transfer you to someone’ or ‘here is a phone number for you to call someone else about that.’ Only those transfers turned into other transfers and eventually a voice machine asking to leave a message. The researcher realized that her introduction immediately shut off the shelter staff’s willingness to respond to questions, so she decided to call the last shelter and directly state the question as if she was someone inquiring how to reserve a bed. With this strategy, she was able to obtain more information than any of the other calls, allowing her to structure a customer journey map.



We discussed the issues we had encountered and highlighted the fact that we had better results when we simply played the role of someone in need rather than presenting oneself as a researcher. Therefore, we decided to take a new approach to obtain data regarding the resources available for Spanish speakers at the homeless shelters. As one of the researchers is a fluent Spanish speaker, we had her call the various different shelters in the Atlanta area and only speak in Spanish over the phone to gain qualitative data about the shelter staff's responses. Below were the results of the phone calls:

Researcher:

- "Hola, como puedo reservar una cama?" (Hello, how can I reserve a bed?)
- "Tienen alguien que habla Español?" (Is there anyone who speak Spanish?)

Atlanta Mission Women's Shelter

- Answers question with: "Do you speak English?"
- Moves away from phone and shouts to co-workers "Does anyone speak Spanish?"
- Returns to phone and says "no one speaks Spanish", and hangs up

Action Ministries

- Call and voice machine prompts only in English (no 'click 2 for Spanish")
- Sent to message box even when call happened during 'intake hours'

Red Shield Services: Salvation Army

- Asks, " Are you with someone who could translate to English for me"
- Says "Let me transfer you to the kitchen. Ask to speak with Alberto"
- Phone line rings and message box says no one is available and cuts off

Community Friendship

- Immediately states, "you have to speak English"
- In an offended tone states, "I don't speak Spanish"
- Does not say anything more and lets the line go silent

Therefore, it was evident that currently there is a serious lack of resources for providing services to the Hispanic population. Also, taking this research approach where the researcher make herself a probe produced very interesting results that brought light to the flaws within the system in a very apparent manner.

Findings

Survey

We collected responses from our nine survey participants and found that despite being right after Super Tuesday, most students either did not consider it to be a large-scale event or did not participate. Either way, this seems to lend credence to the common notion that formal engagement in elections is rather low in the U.S., however, many of the students in the class were not from the U.S. and perhaps were unable to participate. This low awareness indicates that even if there were a service or application that facilitated their engagement with elections, or perhaps with homelessness, that does not mean they would adopt the technology.

We did find, however, that there were some other media that Aggie does not capture, especially media that focuses on group messaging rather than one-to-many messaging and posting like Facebook and Twitter that most respondents indicated they used. One participant noted they used an app created for the event, so finding out what ad-hoc data streams are available at large events may be important. It may be useful to consider how such social media may be engaged by our system for reporting or discovering issues.

Unstructured Interviews

Our unstructured interview with the Shelter Connect advisor and team corroborated this notion that adoption is an issue.

Poster

- “Has the team done research into the difference between day shelters, transitional beds and permanent beds? Important to note the day shelter model is becoming increasingly outdated and defunded by the non-profit and funding community, many non-profits are moving away from this model.”
- “Interesting idea, to crowd source shelter needs/info, but is there any regulatory issues with doing this? Has market research been conducting? Interesting to apply a proven technology/platform in a new market, but more legwork on research needs to be done here for prove out -->Implementation.”
- “I like the idea of leveraging other technology for homeless shelter management. It sounds like a good idea but it would be nice to have more hard facts / stats about the demand for shelter space and how much is going unused due to poor reservation / space management. Great potential!”

Limitations

As we described, we faced some limitations to this project. As we had only just begun this project with nine weeks (six hours outside of class per week) left in the semester,

our time available for this project was expected to be less than 60 hours. Between the two researchers on this project, we had a fair breadth of knowledge but little overlap which resulted in a significant amount of time aligning on requirements and work. We were also limited to primarily formative work, as this class focused on challenging our idea of how scholarly and practical work should be done in the context of poverty. We also were unable to develop a research agenda in time for an IRB approval of our methods and participants, which limited us to sources of data that were already published or generally ethically gathered from non-vulnerable populations.

Future work

We have support from the eDemocracy VIP team to implement design suggestions related to the general platform, and other local volunteer groups have expressed interest in implementing the system for this case. We would also suggest funding for further development of the system, training documentation, and arranging long-term maintenance of the system so as to advance community development and bring light to the needs of marginalized individuals.

We also challenge the general notion from literature reviewed in the HCI for development research domain that development happens in developing countries. A cursory search of the ACM Digital Library yielded relatively few papers studying development in the U.S., for example. Only one (Figueria, 2014) profiled several projects briefly on homelessness. We suggest further research into HCI for development in the U.S., particularly the use of ICT.

Conclusion

Overall, once we discovered the barriers to entry for individuals, specifically Spanish speakers, trying to enter the shelter system by conducting phone calls and meetings with different sources, we worked to develop the idea for ShelterShare, which would follow the eDemocracy model and aggregate data which would be visible to the wider network of shelters and other affiliated services. The hope is that this new system would allow for a more efficient and effective mobilization of resources to more quickly serve the needs of this vulnerable population. To avoid being technologically deterministic, we made an effort to receive input from various different sources and continually iterate our idea. There is still much work to be done to further develop the idea and take into account different variables, such as how the different types of homeless individuals would interact with this system and how it could be adopted for the diverse populations. Ultimately through this research, we have brought light to a current issue that impacts thousands of individuals in the Atlanta area and look forward to continue linking resources to improve their wellbeing.

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