Compass: An Online Community that Connects Homeless People to Mentors

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Abstract
In this paper we present Compass, an online community that connects the homeless population to mentors who have successfully come out of homelessness. The current target population for this project is homeless people in the Allegheny County of Pittsburgh, Pennsylvania who want to get out of homelessness. After talking to homeless people in shelters we discovered that the initial desire to get out of homelessness is typically a personal moment of epiphany. Ten people we interviewed also mentioned that seeing others who are able to get out of homelessness inspired them to do the same. Another finding from our research is that Allegheny County does not have a directory of resources for the homeless; homeless people are not aware of all the resources they have at their disposal. The goal of Compass is to help people in this transitional period by providing them inspiration, a mentor to talk to, and access to relevant resources.

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Homeless; Mentor; Online Community; Mobile App; Web App; Social Network; Storytelling

ACM Classification Keywords
H.5.m. Information interfaces and presentation (e.g., HCI): Miscellaneous.

Introduction

It is a common assumption that most people living on the streets do not have access to the Internet and technology. However, this assumption is incorrect; over half of the homeless population in the United States own mobile phones [3]. Homeless people obtain gadgets such as smartphones and laptops by looking for them in trashcans, saving up to purchase them, or even getting them as donations [4]. Homeless people realize that the Internet is an important necessity for survival, even calling their laptops their "lifeboats" [1]. Most use the Internet to connect with family and friends. Homeless young adults' (75%) use of social networking sites such as Facebook is somewhat close to that of undergraduate college students (96.7%) [2].

So if homeless people have mobile phones and laptops, how do homeless people get access to the Internet? One method is through shelters, which often have computers and Internet access readily available. Additionally, there are places that offer free Wi-Fi services like public libraries, coffee shops, and sometimes grocery stores like Whole Foods [1]. Although the homeless have access to mobile phones, computers, and Internet access, they are still an unexplored user group. Knowing this, we wanted to design something that will allow the homeless population to reap the most benefits from the technologies they are using.

Figure 1. Interviewing Bret, a program manager at a homeless shelter.

Ideation Phase

We began our process with ethnographic research and secondary research regarding homelessness. From the secondary research we came up with multiple ideas on potential design ideas. As a team, we conducted a brainstorming session and proceeded to evaluate each idea by feasibility and by the impact it would have in solving a real problem.

One of the ideas was a code-protected food and resource box placed in urban locations where people can both donate and receive food and other supplies. We envisioned an accompanying app that will serve as a notification system for both donators and the homeless population. Another idea was an app that uses gamification to inspire and motivate homeless people in finding employment. The app would provide homeless people with daily goals that they could complete to unlock achievements and receive rewards.

Feasibility Analysis and Idea Validation

We wanted to test these ideas with the actual people who it will impact so we went to two homeless shelters in Pittsburgh, PA to first find out what their needs are, and then to test out our relevant ideas. After interviewing ten homeless people from two different shelters, our qualitative empirical evaluation found that all our initial ideas would not work. Our interviewees indicated feasibility flaws in all of the ideas.

The code-protected food and resource box had multiple issues. First, the box requires constant maintenance, which can be quite costly. The issue of trust complicated the interactions; homeless people may not trust food items placed in the box or one person may abuse the system and raid the entire box every time. Additionally there was the issue of food being spoilt and clothing items not fitting properly.

One of the major issues with the gamification app was that we realized from talking to homeless shelter workers that most homeless people are actually given the opportunity for employment, but choose not to. The choice to get out of homelessness is typically not extrinsically motivated, but a personal choice that has

Figure 2. The initial paper prototype of the search function for the inspirational stories.

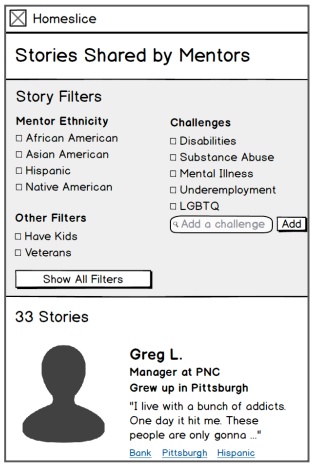

Figure 3. Click-through prototype created using Balsamiq of the filter function in the mobile version.

to be made. Another issue is that not all homeless people have phones with constant Internet access and this app requires a certain level of fluency in technology. Moreover, the gamification aspect of the app may misdirect motivation to change ones life into being extrinsically motivated rather than intrinsically.

Although our initial ideas did not pan out, we did learn important things regarding our target population and the limitations of what we can design. In addition to testing out our initial ideas, the purpose of the visit was to do contextual interviews with our end users (the homeless) and other stakeholders (shelter workers and program managers) and find out what their needs are (see figure 1).

Field Research and Contextual Interviews

In addition to testing out our initial ideas, we wanted to get to know the actual needs of our target user group and their overall experience being homeless. A common theme from all the stories gathered from four homeless people at shelters in Pittsburgh was that all of them had a moment of epiphany when they decided to get out of homelessness; it was not something that was induced by external factors. Realizing that we cannot design something that will help the homeless realize they want to change their lives, we decided to focus on the portion of the homeless population that has made the decision to change. Our interviews revealed that the problem for people in this phase is that they usually do not have someone to help them through it nor recognize the resources they can use.

Keeping the findings from our interview in mind, we went back to the drawing board and came up with additional ideas. We decided upon creating an online community that would connect homeless people with mentors who can both inspire them and keep them motivated in their journey of change. Since the mentors can be filtered by background and life-struggles they faced, our core user groups will have a more relevant source of guidance and inspiration.

Design Process

To design our online community, we used a user-centered iterative approach; essentially, we design the web application, we create a prototype, test it with our target users, and from the feedback gathered during the user test we go back to the drawing board and improve upon the previous design.

Think-aloud user testing

User testing is one of the most crucial steps of the iterative design process. We decided to utilize the think-aloud method for our user tests. In a think-aloud, users are asked to complete a series of tasks on the prototype while saying what goes through their minds aloud. The researchers observe and take notes during the process and follows up the think-aloud with some questions for the users. The purpose of the think-aloud is to see how users interact with the app, whether our design makes sense to the user or not, and which parts of the app the user struggles with. Overall feedback of the prototype is also noted for the next prototype. We did two rounds of user testing for the mobile app with the paper prototype and the Balsamiq prototype, and one round of user test with three different Balsamiq prototypes of the desktop version.

Low-fidelity paper prototype

A low-fidelity prototype is a quick and easy translation of higher-level design concepts as tangible artifacts. We created our first prototype on paper as our primary way for validating proof-of-concept (see figure 2). The

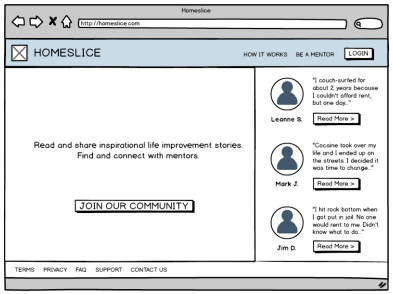

Figure 4. Click-through prototype created using Balsamiq of the homepage of the desktop version.

purpose of this initial prototype is to test out the overall functions and layouts of the app. The advantage of a paper prototype is that it is easy and fast to make and edit. We wanted this initial prototype to catch all the major failures fast and to be able to fix them quickly. During user testing, one of our team members acts as the "computer" and responds to a user's clicks by placing the corresponding paper screen in front of them. When we tested the paper prototype with homeless people and shelter managers, all of them indicated components of the app that they found interesting and would use consistently. We then took all this feedback and used it as specifications for our next round of prototype.

Medium-fidelity click-through prototype

After user testing the paper prototypes of the mobile version, we created a click-through prototype for both mobile and desktop using a program called Balsamiq (see figure 3 & 4). A click-through prototype is essentially a series of static images of the screens that simulates some functionality when users click on it.

High-fidelity Photoshop prototype

The finalized prototype we came up with is a click-through prototype with screens rendered on Photoshop. This high-fidelity prototype incorporates the layout, the functions, and the look and feel of the final product.

Our Solution

Connecting people and resources

As a result of our research, prototyping, user testing, and ideation, we propose Compass, an online community that connects homeless people who want to change their situation with mentors who have successfully gotten out of homelessness (see figure 5 & 6). The intended purpose of Compass is to provide people experiencing homelessness with resources that are dynamic and personal. By connecting homeless people with mentors who understand what being homeless means from first-hand experience, we hope that this will inspire the people currently struggling with homelessness to continue their efforts by giving them a concrete example of someone who has made it through.

Accessibility and privacy considerations

Anyone can access the mentor's success stories in Compass without signing up as a member. This is a way of establishing trust by letting potential members see the value of the responsive web app without having to first commit. What signing up offers is: a way to contact the mentors, a goal tracker, and a way to curate a personalized list of resources. We require a sign up for this so that the mentors can also know more about the person contacting them and to limit potential spammers.

One of the most essential parts of this app is privacy and anonymity. All users and mentors are only required to provide their first name and the initial of their last name. Moreover, the profile pictures are a selection of stock pictures and avatars. The reason for the anonymity is that in our research, we found that the homeless population may be very hesitant about who gets their information. In regards to mentors, they may not necessarily want to be tracked down or identified by people (e.g. their current employer). An air of anonymity often provides for more willingness for people to sign up as mentors and share their stories.

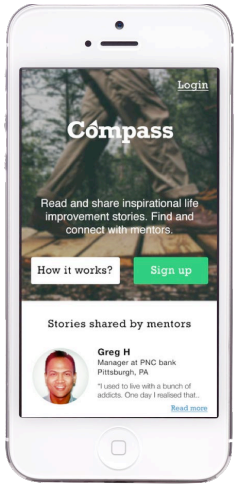

Figure 5. High-fidelity prototype of the mobile version of Compass.

Figure 6. High-fidelity prototype of the desktop version of Compass.

We of course have to balance anonymity with validating mentors. We realize that anonymity often causes people to take advantage of the system for purposes that it was not intended for. To verify the legitimacy of the mentors, the application on the responsive web app asks for references in addition to their story. Once the references check out, they will undergo an in-person interview process where other documents will be verified.

Main Features of Compass

The online community we designed has four main features: filtering inspirational stories, following mentors, communicating with mentors, creating goals, and creating a personalized resource database. A user can browse through stories and filter them based on the challenges the mentors faced (e.g. drug addiction, mental health issues, physical disabilities, incarceration, etc.), by their ethnicity, age, and other factors. The filter allows users to find mentors they relate to and that have gone through similar situations.

While a user is browsing through stories, they can also view the timeline of events in the mentor's story with embedded links for resources the mentor's used. The user has an option to add these resources to their own list if they want to refer back to them later. When browsing through mentor stories, a user can "follow" mentors they are interested in. They can also message mentors to ask for advice and for help with resources.

Additionally, Compass has a goal tracker function where users can add their own goals like "find an apartment in Pittsburgh" and add a list of subtasks to accomplish that goal based on inspirations from mentor stories. Their mentors are then able to give them feedback on their goals. Lastly, there is the resource list feature. A user can add resources they read about in mentor stories to their own list of resources. The ability to create a personalized resource list of resources that have been verified by mentors will allow for a more effective use of those resources.

Future Works and Goals

We envision Compass to initially be launched in Allegheny County of Pittsburgh, Pennsylvania, but to further expand as a nationwide online community of mentors and people who are attempting to get out of homelessness. As a starting point we see the most essential part of the online community to be the connection between mentors to the members who are attempting to get out of homelessness. Through our "add resources" function in the responsive web app, we hope that once Compass gains enough traction and members, it will also become a repository for trustworthy resources.

Another future goal is that this online community can be opened up to the community as a whole to raise awareness regarding homelessness. There are a lot of stereotypes that are imposed upon the homeless population that needs to be challenged. We hope that by reading success stories and seeing the progress and effort made by members to get out of homelessness, we will help break stereotypes about homelessness.

Conclusion

Compass is an online community that provides homeless people with an opportunity to connect with people who have experienced similar situations and managed to overcome their hardships. Additionally, members of Compass will be able to set and keep track

of goals as well as create their own personalized list of resources. By recognizing that the homeless population has access to the Internet, mobile phones, and computers, we can use this to provide an additional media for a solution to homelessness. Connecting homeless people with mentors who were once homeless can help the currently homeless remain motivated and well-informed while improving their lives.

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