

HCI - TEAM ASSIGNMENT: 1

(By: Avanti Patil, Sriharsha Srinivasa Karthik Kaipa, Naga Vijaya Saradhi Kethamakka, Sneha Vankireddy)

Problem Space:

Poverty in a broad sense means the deprivation or lack of a certain resource or material. But in modern usage, it mostly refers to the lack of money. According to the United Nations, fundamentally poverty is the inability of getting choices and opportunities, a violation of human dignity. It means lack of basic capacity to participate effectively in society. It implies not having enough to feed and clothe a family, not having a school or clinic to go to, not having the land to grow one's food or a job to earn one's living, unavailability of credit. It increases insecurity, powerlessness and exclusion of individuals, households and communities. It makes humans susceptible to violence, and it often implies living in marginal or fragile environments, without access to clean water or sanitation." ^[1]

In order for countries to keep a track and check on poverty, they introduced a concept known as poverty line or poverty threshold, which is defined as a minimum level of income required by an individual to live in that country per day. Anyone making less than the stated poverty threshold is deemed to be in absolute poverty. In 2005, the World Bank estimated the international poverty line to be \$1.25 a day. In the United States, the current poverty threshold for a family of 1 member as of 2009 is \$10,830 per annum. According to the survey conducted by the Boston Redevelopment Authority's research division that was submitted in March 2014, about 21.6% percent of the total population of Boston lives in poverty and about 17% family households live in poverty. Due to Boston being an area teeming with multinational population, the breakdown of poverty levels among the different racial minorities are as follows: 34.8% of the Hispanic population, 26.6% of the Asian population and 23% of the African American population lives in poverty. The three major areas in Boston that are affected by poverty are Fenway (43.7%), Mission Hill (40.9%) and Allston (37.0%) (excluding the Boston Harbor Islands) while the lowest rates of poverty were seen in South Boston Waterfront (3.1%), West Roxbury (5.5%) and Beacon Hill (9.8%).

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The health situation of the population living in poverty is deplorable. About one thirds of deaths all over the world are caused because of poverty related circumstances. Some of the main sufferings of those below poverty line are hunger (even starvation) leading to malnutrition, disease and psychological issues caused by discrimination. It is estimated that on an average, about 90% of maternal deaths during child birth occur in the underdeveloped countries of Asia and Africa. It has also been observed that the likelihood of people living below poverty levels developing incurable disabilities and diseases is very high.^[1.] Infectious diseases like malaria, tuberculosis are also rampant in these areas because of lack of proper sanitation and preventive measures. According to the study by Thomas E. Fuller-Rowell, Gary W. Evans, and Anthony D. Ong "The Mediated Role of Perceived Discrimination", the social-class discrimination may be a major factor in the reduced health situation of people under poverty level. This can result based on the mental stress the person feels which results in degradation of mental state of the person.

A community organizing is the process of people living close to each other, like in a community, coming together and forming an organization that acts on shared self-interests. The organizations can range from large, well established organizations with rules, regulations and elections for filling positions in the organization, to small, word of mouth organizations which are more informal. Such organizations address the various issues that arise in the community, like health, education, personal growth and community service. Community organizations can help alleviate poverty by helping members of the community participate in and set up community events like farmers' market, or community wide job fairs, potlucks etc. and help make the community self-sufficient. After that goal has been reached, it could help in setting up markets for selling their goods and crafts to people outside their community as well. By doing so, a community organization can help generate revenue where there was none and help improve the living standards of the community and help every responsible participant go above the poverty line.

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Few of the factors that determine the effectiveness of community organizing are:

- Unwillingness of the community members to participate in the betterment of the community but instead wanting to improve only themselves. If the members of the community truly band together and decide to help each other out since they are all in similar situations, the functioning of a community organizing would go smoothly
- Group of individuals of the community that want to disrupt the organizing for whatever end goal. The community could intervene as a whole and convert these individuals to add to their resources and thus help strengthen the organization
- Community size not enough to hold a proper organizing party. Such communities would benefit from trying to merge with a neighboring community and help each other out as a whole
- Lack of communication among the community members to help them know the happenings around their location to take part in the events. With a proper forum for everyone in the community to post and read about events, there will be better connectivity and hence larger gathering at events that are aimed at improving the community.

The best way for a community under poverty level to truly benefit from the different resources that are available within the community is to utilize them for various purposes within the community. This way, the community can develop itself without incurring the excessing costs it would if it depended on external resources and also help popularize the skills and crafts of everyone in the community. Few of the major factors that affect this use of internal resources could be:

- Lack of willingness of community members to participate in this internalization of resources. By being more open to this idea, the resources that they generate can help the community as a whole and also popularize their trade, thereby helping them to flourish.

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- Misuse or wastage of resources offered or gathered. By avoiding any wastage or minimizing the wastage, the community can truly benefit without incurring excess costs or losses.
- Lack of communication regarding the availability of such resources as well as about the events involving such resources can lead to the wastage of resources and thus incur losses. By having a proper platform to communicate about the availability of resources, it would greatly help the community prosper.

After observing the major causes that could impede the efforts of community organizing in the low-income neighborhoods, it can be seen that many of the issues that it might face can be eradicated by establishing proper communication channels for the people of the community. In this modern age where every household has access to at least one mobile phone with data connectivity, either through the data plans directly from the carriers or the number of free WiFi hotspots that are cropping up all over the place, technology could be used to help community organizing to eradicate or try to eradicate poverty. By creating a platform, a social network for people from the community to post about their problems or request help from others in the community or post about events and gatherings that happen all over the community, people could be made aware of all the things happening in and around the community and they can better utilize internal resources to minimize external costs. It can also function as an effort-reward platform to popularize all the events that NGOs conduct around the community, to benefit themselves.

Union Capital Boston aims to establish a sophisticated platform for this very purpose. By partnering up with other well established organizations that conduct events all over Boston, they wish to bring these to the notice of the various communities that exist in Boston that are below poverty level and help them help themselves by incentivizing various activities and events and in turn, give more back to the people.

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They also wish to connect people from different communities to help each other support and develop themselves and thus take a step forward in trying to solve the issue of poverty.

Target users for Union Capitol Boston:

Union Capitol Boston wishes to transform the social capitol into opportunity by rewarding individuals, families and communities which are affected by poverty. The target users of UCB are such Individuals and families below poverty line who want to take advantage of the rewarding community. UCB also seeks institutions and volunteers to engage in this powerful activity to fight poverty. The targeted audience is of wide range of population where about one quarter of the Boston residents live in poverty. Also Boston's Black and Latino/Hispanic residents earn only 2/3 of the average Bostonian's income. 60% of Boston's female-headed households with young children live below the poverty level. ^[2.]

Characteristics of UCB users:

It has been observed that the direct effect of poverty creates social and financial challenges like paying for school fees of children, health care of every individual and their families and most basic requirements for people to live healthy and happy life. The members of UCB are encouraged to engage in the education, health, finance and community engagement events to better their lives in every aspect. The UCB users attend these events even more because they are entitled for the rewards like UCB points after adding these details on the UCB's mobile based app which can be converted into gift cards, college saving plans and home loan assistance in exchange of community involvement. Each UCB member gets a UCB badge which they can wear while attending these events. This can help them to meet new people of the same foundation and make connections to share their ideas and reasons to join UCB. It can also help to create a new community where they can attend the events together and encourage each other to raise awareness about this rewarding community in the neighborhood. UCB provides the easy to use mobile user interface which can be used by the people with the basic knowledge of usage of the mobile phone.

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UCB also provides the users an option to send the handwritten information about events they have attended which can be entered into the system to support the users who don't own the mobile phones or can't operate one.

The way Union Capital Boston, addresses poverty

- UCB believes that their organization is an *approach* to overcome the poverty trap for individuals, families and communities. They follow an incentivized approach to community service in the areas of Education, Health, Finance and Community engagement. Members of the organization (Union Capitalists) participate in community activities and they get rewards for their time and resources. Union Capitalists are awarded with 100 points for each hour they engage in an activity. The activities are either provided by organization management or decided by the users. Activities held by partner organizations are worth double points. Union Capitalists decide, organize and earn points when they give back. [2.]
- UCB rewards its members for investing time in themselves and their families. Members can earn points by just working out in a local gym for an hour, reading to their children at homes, making doctor appointments or helping others. While taking care of personal health and spending quality time with family and friends, members are rewarded and benefited. These activities with both personal and community interest, will help them lead a better living as well as contribute to constructing a better community.

Envisioning the app further supporting organization's mission

For an organization which is rather an approach to uplift poverty, the app must offer its users, updated features in many aspects.

- Union Capitalists (UCs) must not be able to falsify the records to get points

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- UCs should be able to let others know about the activities done in the past or present
- UCs must not miss out on the events they want to participate due to lack of information
- More and more partner organizations should join hands with UCB to build a better Boston
- The app should be compelling to make users use it more and therefore participate more in the events being carried on

Information and communication Technology (ICTs) services play a pivotal role in community organizing. Organizations that cannot utilize these services properly at most certainly at a disadvantage for this handicap. As established in the **problem space**, mobile device market is increasing at an exponential rate every day. With the increasing connectivity all over the world, having the capability to mobilize the world over the network could be one of the most powerful tools.

Internet access can eradicate extreme poverty. When communities are connected, we can lift them out of poverty. – Mark Zuckerberg, UN Sustainable Development, Sept 26th, 2015.

Though tons of organizations strive to engage low-income families into community organization, very few have an application or a software tool for direct access to the users. Most of the organizations depend on volunteer distributing organizations. Every small group of activists that are passionate about community need not necessarily have skills to develop their own software tool. They register to a service that provides volunteers to various events taken up by various community service organizations. Organizations like **Boston Cares** mobilizes and trains individual and corporate volunteers who strengthen communities and improve the lives of people in need ^[3.]. While other organizations strongly use the social media platform to mobilize and create awareness among the activists all over the community. Organizations like **Occupy Our Homes**, make strongest use of social and communication media to stay in constant touch with their activists.

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Either through personal software tools or by the use of social media, strong message has to be sent out to motivate the people all over the world. A few principles that can be followed by any organization in community service, that can result in strengthened and multiplied outcomes. By exposing the hidden facts out to the public on appropriate platforms, amplifies the gravity of the cause **(Situating)** ^[4.]. By translating the relevant message, so that it can call out to various kinds of audiences with same motivation, the community cause will gather more momentum **(Codifying)** ^[5.]. By spreading out the information even to nonmembers of the organization, the cause will catch more attention and there is a very good chance of improved impact **(Scaffolding)** ^[6.].

A new innovative software tool that can accommodate all the aforementioned features can power up the process of Union Capital Boston in addressing poverty traps in Boston.

- Giving the user ability to voice her/his thoughts, helps the users to let people know of their needs
- By developing a specific page for activity of the users, UCs all over Boston can know the current and upcoming events in their neighborhood, supporting the organizations mission
- Adding the powers of a social network to the app can help UCs to increase their networks and can let their community get bigger.
- By automating most of the labor work being done to process points, the chance of any user providing fake information regarding events they participated in, can be avoided.

Critiquing the UCB app

The webpage developed majorly for mobile devises provides the following basic modules for a guest user.

Events, Check In, Points and Contact

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- The **Events** section has the upcoming and past events being organized by UCB. On selection, the event details are shown along with RSVP options. Detailed description of the event and directions to the event locations can be seen on a map.
- The **Check In** module allows the user to post attendance to events for that particular day and for a past event. Events can be filtered out according to categories viz. Health, Community Service, Education and Finance/Employment. User can submit the event and duration of stay accordingly for the reward points.
- A **Selfie Event** option is available for users who cannot find a particular event in the list of events populated to check in. User has to provide name of the event, description of the event, event category, date and duration. User wearing an UCB button can take a selfie at the event and add that photo in the event submission for 50 extra points.
- The **Points** tab will show the number of points acquired by the user and the pending transactions
- Users can submit complaints and concerns via a comment in the **Contact** section.

Though the design could use betterment in each module, the interface of the app is simple and straightforward. The webpage renders adequately depending on the device it is being loaded on. All intractable components are displayed clearly and legibly. While critiquing an application's usefulness in terms of a community, various factors can contribute to its strengths and weaknesses. Stating from the gathered problem space data.

- The application facilitates the members to participate in community activities. Since the activities are incentivized, it creates an interest in the members to be a part of growth in the community. Also the engaging nature of application allows participants to witness the problems being faced by fellow members of the community.

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- The application can use updates on dealing with members that try to take advantage of the reward system thereby disrupting the mission and vision of the organization. Currently, users can submit events by just stating the details required. There are little means to check if a member has actually been to the event. An efficient geolocation based check in system can be utilized to solve this problem
- The lack of communication amongst the members could be a major problem. The app can provide a means to post and share the activities done by a user, which can keep other members informed of the same activity.
- The app can update manual approval of points for the users. RSVPs taken beforehand and check-ins based on location can be cross referenced, which can mean a legitimate approval of points.

Citations:

[1.] <https://en.wikipedia.org/wiki/Poverty>

[2.] <http://www.unioncapitalboston.org/what-we-do/>

[3.] <http://www.bostoncares.org/mission>

[4.] Situating - Illegitimate Civic Participation: Supporting Community Activists on the Ground – Mariam Asad, Christopher A. Le Dantec.

[5.] Codifying - Illegitimate Civic Participation: Supporting Community Activists on the Ground – Mariam Asad, Christopher A. Le Dantec.

[6.] Scaffolding - Illegitimate Civic Participation: Supporting Community Activists on the Ground – Mariam Asad, Christopher A. Le Dantec.

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Contributions:

We all discussed every part of the assignments and at the end divided the parts for

- Explanation of Problem Space is written by Sriharsha Srinivasa Karthik Kaipa
- Information gathering and documentation about the target users is written by Avanti Patil
- Analyzing and writing about existing technologies is done by Naga Vijaya Saradhi Kethamakka
- Team page generation and upload on openshift is done by Sneha Vankireddy