Boulder72 User Research: Initial Findings

Sayani Ghosh, Robert Soden, Jennings Anderson, Kevin Stowe

Introduction

Despite widespread recognition that simple preparedness measures can save lives and help people weather major disasters, few people follow disaster preparedness steps put out by the CDC, the American Red Cross, and other organizations. At the same time, when disasters strike, responding agencies struggle to communicate effectively to affected individuals. Boulder recently underwent major flooding events and is currently looking at longer term strategies to increase the resilience of the city to future events. Our project will be a simple smartphone app that will seek to capitalize on the attention disasters are currently receiving by building a tool that 1: lets users enter simple information about their address, household size and composition, and other relevant information and receive basic guidelines on how best to prepare themselves and their families for emergencies; 2: receive news and alerts from the Boulder Office of Emergency Management during times of crisis; and 3: Send basic communications to friends and family expressing their situation or needs during emergencies. We hypothesize that by capitalizing on people's current interest in disasters and desire to stay informed during emergencies, they will be willing to download the app. Once installed, the tool can be used to encourage them to follow basic precautions to prepare for the next disaster.

Target Users:

Our target users are Boulder residents. We divided our participants into 2 categories: homeowners and renters. For this stage of the research, we kept our sample group small in order to test our research methods. We chose to work with close connections that represented these groups who we could ask to participate in a relatively short time-frame and assume a high response rate. In the future we envision a more granular categorization of potential users that would include business-owners, non-native English speakers, students, and the elderly.

Research methods

We employed two different methods:

1. Survey. Doing the research in the form of question-answer seemed to be pretty useful for us as well as for the participants. We could present our exact queries in the form of questions with either specific options or paragraph response: curating the form of precise response we wanted. We sent out a questionnaire in the form of a Google Form, available here. The survey focused on questions related to technology use, disaster preparedness, and participants' experience during the 2013 Colorado floods.

2. Cultural probe. We asked users about their current level of disaster preparation and asked them to take photos of items in their home that represent disaster preparedness to them. The prompt for the probe is available here. We used a cultural probe because it is a less used data collection practice, giving us experience in data inquiry which yields a very rich view into our participant's disaster preparation activities.

Four home renters responded to the survey. One homeowner and one renter responded to the cultural probe.

Findings from Method 1: Survey

- None of the participants were following Twitter to keep themselves updated during last year's flood. Three participants (all of them are students) mentioned the CU alert system and only one participant used a local news website.

- Two participants reported using Facebook and the Boulder Office of Emergency Management.

- Most of the participants were aware of all the DOs and DON'Ts during the flood which we listed.

- For maintaining contacts with friends/family most relied upon phones calls/sms rather than social networking sites.

- While some of them have prepared themselves to some extent for a future disaster, some are unsure about their preparation. None of them are fully prepared.

- One participant mentioned concerns about the high amount of energy consumption of their smartphone.

- The participants consider themselves very aware and informed of worldwide disaster events. On a scale of 1-5, they responded: (2,4,5,5).

- When asked about the usefulness of a disaster preparedness smartphone app or website, the participant response averages to 4 on a scale of 1-5 (Implying quite useful).

- Respondents were not very certain about the level of disaster preparedness of those in their social circle.

- Overall, participants reported very diverse experiences during the flood, however, none of them were directly impacted by water in their homes.
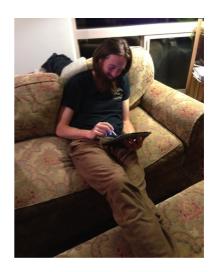
Findings from Method 2: Cultural Probe

Our two participants presented very different perspectives on both what it means to be prepared for a disaster as well as their own level of preparedness.

Respondent 1, a homeowner, viewed preparedness largely as the collection of necessary basic items and the development of a plan of action with their family for what to do and where to meet during an event. Their pictures were primarily of bottled water and food in their pantry. This respondent didn't feel particularly well-prepared for the next emergency and the actions they reported that they could take included stocking up on these items. Respondent 1 did mention the importance of their social network and having the family and pets documents organized. There was no mention of communication devices or other technology in their writeup.

Respondent 2, a renter, focused primarily on their social network and means of communication during emergencies. Their pictures included one of their roommate as well as their laptop, and the importance of technology as a means of finding information in disaster events. Interestingly, this respondent reported not owning a smart-phone. They also highlighted the uneven impacts of disasters on women and minority groups and stressed the importance of strong social networks as a means countermanding the effects of this tendency. Developing strong relationships with neighbors and the wider community was identified as an important part of their strategy for personal preparedness for disasters.

Conclusion

In general, our participants feel mostly prepared for a future disaster and don't seem to be terribly concerned. This contrasted somewhat with what they actually reported about their current activities and practices related to preparedness. For example, no respondent mentioned stock of batteries, emergency hand-held radios, or smoke detectors. The only respondent to mention an emergency plan indicated that they did not have one. We feel that this is an indicator that, despite their being significant information available to the public on such matters, people aren't seeking out this information or paying close attention to recommendations. During emergencies, people looked to traditional sources like the Boulder Office of Emergency Management and News Outlets but also Facebook and their own social networks. Twitter was reported by one user as providing information faster than some traditional outlets. The CU Alert system that sends text messages to registered users was also mentioned by respondents. Almost every participant stressed the importance of social networks and their friends and family during emergencies. We feel that a social dimension to the preparedness app might allow us to bridge this recognition in order to help convince people to take appropriate steps in advance.

Challenges for Research Methods

Overall, we think our research strategy was on target. For the survey, it appeared that people preferred to tick checkboxes rather than giving descriptive answers. Their descriptive answers were often very short, implying that they did not want to spend significant amounts of time on completing the survey. We might adjust our approach by stressing the importance of this work in the introduction to the survey or replacing some of the open-ended questions with multiple choice. The cultural probe returned very rich and interesting results. Our two respondents both spent more time on the written section than the photos. We think the photos are important for understanding people's perceptions of the physical elements of disaster preparedness and that we can reword the descriptions to emphasize this part of the probe.

Participation Summary

Robert prepared and curated the Cultural Probe while Jennings and Sayani worked on creating and distributing the Questionnaire. Everyone collaborated on the write-up. Kevin was busy finalizing his preliminary exam (it was due on Oct. 1). He has agreed to make up the workload balance discrepancy in the next team project assignment.