Friendsourcing for the Greater Good: Perceptions of Social Microvolunteering

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Abstract

People with disabilities can be reluctant to friendsource help from their own friends for fear of appearing dependent or annoying. Our *social microvolunteering* approach has volunteers post friendsourcing tasks on behalf of people with disabilities. We demonstrate this approach via a Facebook application that answers visual questions on behalf of blind users.

Introduction

Traditional crowdsourcing has proved a convenient way to quickly get tasks done that are too difficult for computers to do alone (Kittur, Chi, and Suh 2008). For instance, the VizWiz smartphone application allows blind users to send visual questions to sighted crowd workers and get answers in a few seconds (Bigham et al. 2010). However, the scalability of these applications is limited by the cost of the paid workers. If the cost of these tasks are passed on directly to the user, they can become prohibitive over time. This may be especially true for blind users of VizWiz, as people with disabilities are often not in the labor force, or if they are, have higher unemployment rates than the general population (Bureau of Labor Statistics 2014).

One free method of crowdsourcing is friendsourcing, in which users post questions to their social network, who then answer for free. Friendsourcing often provides answers that are seen by the asker as more trustworthy and tailored to their interests than using a search engine (Morris, Teevan, and Panovich 2010), and can lead to increased bridging social capital in the users' friend network when weaker ties respond (Gray et al. 2013).

While VizWiz users can also post their questions to their own social networks, when surveyed many indicated reluctance to do so out of concerns of low response rates or speeds (due to their lower-than-average network sizes) or to avoid bothering their friends (Brady et al. 2013). Fear of stigmatization or seeming helpless may also contribute to their hesitation to use friendsourcing for everyday questions.

We propose a new kind of intermediated friendsourcing, which we call *social microvolunteering*, to take advantage of the cost and quality benefits of friendsourcing, while avoiding the issues that arise when blind users post questions to their own networks. In social microvolunteering, a volunteer serves as an intermediary to post questions to their network of friends on behalf of a blind VizWiz user. While this model imitates traditional friendsourcing, it has the additional benefit of allowing the intermediary and their friends who answer to connect over a shared altruistic experience.

Below, we describe an example social microvolunteering application we developed, and report on a preliminary survey and pilot study of the application. Most of the 95 survey participants responded positively to the idea of the application, and 27 installed it for a week of pilot-testing. The answers received were typically of high quality, and when looking across users, the first answers to each question asked came in an average of 4 minutes and 8 seconds.

System Design

In order to explore the concept of social microvolunteering, we created the Visual Answers Facebook application. This application allows the intermediaries who install it and their friends to answer visual questions from blind people.

These questions originate from VizWiz, a smartphone application where blind people take pictures of visual questions they have, send their questions in to sighted crowd workers, and receive answers in nearly realtime (Bigham et al. 2010). Running since 2011, VizWiz has now been used to answer nearly 70,000 questions for blind users. However, it is currently funded by research grants which pay for crowd workers to answer questions. A free model like social microvolunteering could reduce the projects' dependence on grants and allow it to operate more sustainably in the future.

As seen in Figure 1, when a blind user of VizWiz asks a question (a), it is sent to the VizWiz server and posted automatically to the Facebook feeds of the intermediaries who installed the Visual Answers app (b). Any of these intermediaries and their Facebook friends who are online when the question is asked can answer the question, and their comments are forwarded back to the server (c) and then to the VizWiz user who asked the question (d).

Initial Reactions

In order to examine user reactions to the application, we conducted an initial survey, introducing participants to Visual Answers as a hypothetical application and gauging their
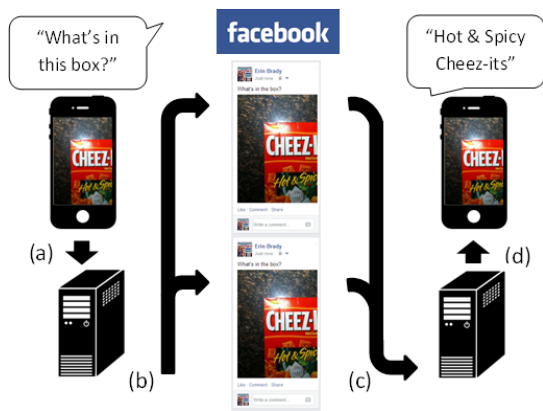
Figure 1: The design of the Visual Answers application.

opinions on the application. After they completed the survey, they were presented with an opportunity to install the application and pilot it for our research team.

The survey was advertised via Facebook Ads to US-based, 18+ Facebook users interested in "charity", who were offered a $5 Amazon Gift Card for their participation. 95 respondents completed the survey. They were primarily female (65%), with a median age of 48 (ranging from 18 to 83). Respondents had high levels of Facebook experience - 85% had used the site for 3 or more years, and nearly all (97%) logged in once a day or more. However, many had not used Facebook applications that posted to their wall (only 28.4% indicated having ever installed such an application).

When asking respondents their opinions of the proposed Visual Answers application, we split them into two conditions. Respondents in the *personal* condition (n=47) were asked how they personally would respond to the application (eg. would they install Visual Answers), while respondents in the *general* condition (n=48) were asked how Facebook users in general would respond (eg. would Facebook users install Visual Answers). 63% responded positively to installing the application, though those in the general condition were significantly more likely to respond positively (72.9%) than those in the personal condition (53.2%)$_{p<0.05}$.

Those who responded positively to installing said reasons to install were to help people (92%), raise awareness of disability issues (68%), or to feel good (55%). Those who responded negatively to installing cited some issues that were specific to Visual Answers, like not thinking the application would be effective (31%), but also Facebook-specific reasons such as privacy concerns (40%), not thinking apps like this are what Facebook is meant for (26%), or not wanting to annoy their friends (26%).

Application Use

After completing the survey, respondents were offered the opportunity to install the Visual Answers application. Respondents were alternately offered the option to receive $20 Amazon gift cards for their participation in the pilot, or were not offered compensation. 27 respondents installed the ap-

plication, with 14 in the paid and 13 in the unpaid condition. One participant from both the paid and unpaid conditions deactivated the application during the pilot, for a total of 25 completed pilot installers. For these 25, we analyzed data from their first week of having the application installed.

We had a pool of 20 questions to post to participants walls. 10 were answerable from the photograph provided, and 10 were unanswerable from the photograph provided (typically due to photographic errors such as blur, lighting, or framing/composition). During the week, 186 questions were posted (as we varied participants evenly to post every other day, every day, or twice a day).

99 of the 186 questions posted got one or more comments, either from the intermediary who had installed the application, or from their friends. Out of the total 164 comments received, 139 were "good-faith" answers - either correct answers for answerable questions, or photography suggestions/"I'm not sure" for unanswerable questions. Comments that weren't "good-faith" included questions about the application, or conversations among answerers.

On any individual post on an intermediary's wall, the average time to get a first response was 39.7 minutes (median 15.8 minutes). However, when comparing the average time for a first answer to each of the 20 questions by any user, the average time to first response was 4.13 minutes (median 2.82 minutes), indicating that response times could be drastically reduced for the blind VizWiz user by distributing questions to more than one user at a time.

Conclusion

In this paper we presented social microvolunteering, an intermediated form of friendsourcing that allows Facebook users to automatically post tasks to their friends on behalf of a disabled user. Both survey responses and a pilot of Visual Answers, our social microvolunteering application, indicate that this paradigm could be useful as a replacement for paid crowdsourcing for tasks with an altruistic component.

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