Inspiring Neighborhood Data Contributions through Different Motivators

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Abstract
Geographical information is important to various organizations including the government to provide needed services or city improvements, and gathering data can be tedious and expensive. However, such data may also be obtained freely via local volunteers. We conducted a preliminary pilot study to analyze which of two motivators are more effective for prompting crowds to volunteer data about their neighborhoods. Our results show a glimpse of what kind of features are worth considering to motivate citizens to contribute to neighborhood collective data efforts.

Introduction
Citizens can provide updated information about their neighborhood which can include semantic data not picked up by sensors around the city or necessarily provided by expert curators [3, 1]. The data citizens provide can improve the neighborhood, and help others navigate and learn things that are not necessarily obvious. Therefore, a design that meets the needs of the community is key [2].

However, it can be challenging to obtain free and accurate geographic information from citizens. It can be especially difficult to motivate them to continue contributing as the city changes. Citizens are motivated by different things and it is important to keep in mind what they find

Interface Totals	Social Good	Gaming
Comments (Tips)	12	134
Median Num. Words	9	6
Least Num. Words in Tip	2	1
Most Num. Words in Tip	23	33
Photos	3	34
Total Data	15	168
Total Places Visited	12	116

Figure 1: The table displays the amounts and type of data contributed by users for each interface as a group.

Figure 2: Person contributing information about the shops around the neighborhood.

motivating when designing applications. We need to design flexible applications that aim to gather as many volunteers as possible. In our study, we explored the effectiveness of two different motivators.

Methodology

We conducted a between groups study that lasted 5 days. We randomly assigned our 6 participants into two equal groups: the social good group contributed to help the community and used the social good interface, and the gaming group competed for prizes and used the gaming interface. Participants were asked to use the interfaces we designed to upload photos and comments on places they had visited. The social good interface ranked neighborhood locations from least contributed data to most. The interface tried to encourage contributions to places which lacked data for the purpose of helping the neighborhood. The gaming interface did not rank locations in any order, but instead ranked users by their contributions in three categories: most comments, most photos, and most comments and photos combined. The gaming interface tried to motivate citizens to compete against each other to contribute more neighborhood data.

Results

Overall results showed that citizens contributed more data when motivated through gaming than when helping their community. Figure 1 shows a data table that displays the data citizens contributed to each interface. The users of the gaming interface contributed 1020% more data overall with 31 additional photos, 122 additional comments, and 104 additional places visited in comparison to their social good interface user counterparts. While the users of the gaming interface had a lower median of words and the shortest comment, they also had the longest comment. After manual inspection of the results, all the photos contributed by the users of both groups were relevant and most of the comments were useful.

Discussion and Future Work

Our results show that citizens are more motivated to contribute geographical data through gaming. However, providing prizes the way we did in our study may not be ideal for a whole community. One idea would be for gaming companies to volunteer for this cause by offering citizens a reward in their game for providing accurate geographical data of their choice, which could be verified by other citizens. The reward could be something simple such as a new sprite, a cosmetic item, in game currency, a title, or a bonus. In this way, awareness of geographical data applications would be raised and it could motivate citizens to participate. Additionally, it would provide a relatively easy way for gaming companies to volunteer and have a bigger impact in society, which some companies aim to do. Additionally, exploring how to create gaming interfaces for collecting neighborhood data during the CSCW workshop could be another interesting venue.

References

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