

Using a Mobile Application to Encourage Community Interactions at a Local Event

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1. INTRODUCTION

Since 1967, the Central Pennsylvania Festival of the Arts has been a large cultural event in State College, PA. This event annually attracts vendors and attendees from all over the country and is an event that has become an annual tradition for many local families, students, and visiting alumni of the Pennsylvania State University. Community festivals are important to economic development and regional tourism, but also build community pride. In the digital age, much of our daily life is experienced through the use of mobile devices and social media. While the use of technology can isolate individuals from their community [5], our research explores ways to enhance sense of community by designing a social game that blends the use of mobile devices with a social infrastructure for face-to-face community interactions.

The Pew Research Center (2014) reported that 90% of American Adults have a cell phone and 58% of American adults have a smart phone, thus making wide scale social media content creation inevitable at such a widely attended cultural event. Such a large event, coupled with wide usage of smart phones and other mobile devices, presents unique opportunities for documenting and researching online social network usage, using twitter posts, geolocation information, and other components of social media posts, and for creating opportunities for engagement. In this paper, we describe community information generated through our own mobile application and how it was used to enhance sense of community at the festival.

2. PREVIOUS RESEARCH AND BACKGROUND

Mobile applications increase community interactions by providing community members with opportunities to interact with each other in different ways than they normally would [3]. Since 2008, the Center for Human-Computer Interaction has developed the official mobile application for the Central Pennsylvania Festival of the Arts (ArtsFest). In previous prototypes, our ArtsFest mobile application included an interactive calendar of events, but the ArtsFest 2014 application was the first version to contain interactive features. Other researchers have employed similar features in applications for festivals [2], but have focused their research on infrastructure and methods used to employ such features, as opposed to the networks created by these systems.

Previous research has also focused on context aware computing within community networks. Researchers have used context aware computer and mobile applications to tap into already present communities and to virtually connect users of these applications [1] and have found that community members generally participate in these new online forums. However, there is a dearth of research focusing on online forums that bring people together in the real world, which is a gap that our research attempts to close by adding a social game component to our application. At the 2014 ArtsFest, we explored how social infrastructures aided by mobile technology can increase social connections and sense of community.

4. RESEARCH METHODS

Festival attendees downloaded the ArtsFest 2014 application on both iOS (n=1025) and Android (n=413) platforms. A subsample of participants agreed to participate in a social game (n=150) intended to encourage more content creation and to increase the sense of community among app users. The subsample of participants was asked to wear a colored badge indicating festival interests, specifically, food, music, or art. When a participant saw another festival attendee wearing the same colored badge, they were asked to use a feature of the festival app to take a “selfie” together and post the picture to the app where other festival attendees could view, like, or comment on the photo. Participants who agreed to participate in this social game completed a survey that asked: demographic information; festival economic impact assessment questions; and a scale relating to perceived sense of community when viewing photos posted to the app.

Activity data within the app was matched with survey data to provide a robust perspective of differences in users’ activities. Upon launch of the app, users were presented with a terms of usage agreement describing that all posts to the app would be included in academic research. The application activity data that was recorded includes picture posting; commenting on pictures; liking pictures; a “leaderboard” of top users; RSVPing to events; and a map of all pictures posted. Analysis of survey and activity data compared participants in the social game that went on to contribute to content creation in the app (by posting photos and selfies) to those that did not. Of the participants in the social game, social interactions were mapped using a social

network analysis wherein festival attendees were linked through their co-appearance in selfies.

5. RESULTS

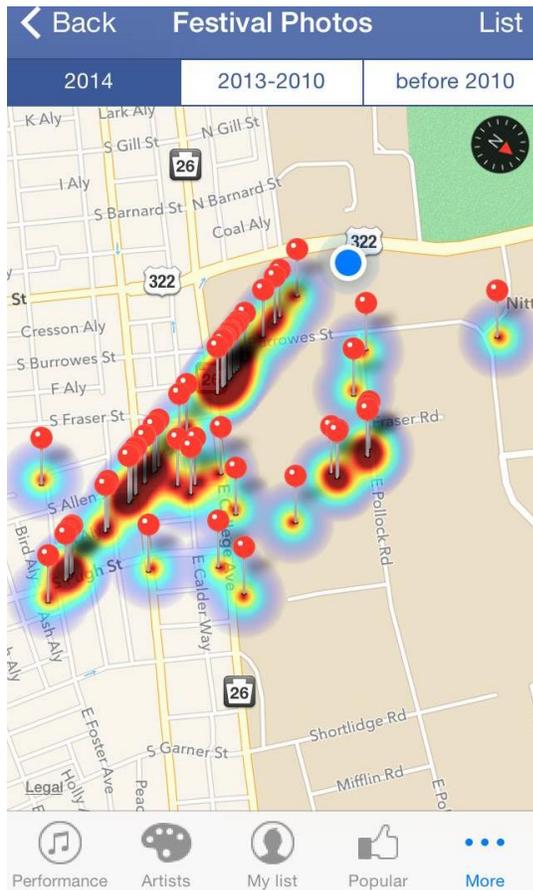


Figure 1: Heat map of photo geolocation

The photos posted were used to create a heat map of activities throughout the festival; hotspots of activity are highlighted in Figure 1. Social game participants posted 142 photos to the app while general app users only posted 3 photos to the app. Of those photos, 125 photos were selfies. On average, participants of the social game that posted photos ($n=66$), compared to those that did not ($n=84$), spent less money at the Arts Festival (posted $M=259$; did not post $M=372$), were younger (posted $M=31.9$; did not post $M=38.4$), had attended the Arts Festival more years (posted $M=7.4$; did not post $M=5.8$), and reported less education (on a scale of 1 to 5 indicating level of education posted $M=3.5$; did not post $M=5.8$). While there were some differences in the demographics of participants, there was no significant difference between the two groups when it came to the sense of community perceived by viewing Arts Festival Photos. Using the sense of community scale (wherein 1 indicates strongly disagree and 5 indicates strongly agree), participants in the social game agreed that seeing photos and comments made them feel that it was good to be a member of the community ($M=4.18$, $SD=.78$),

that they trust people in this community ($M=3.97$, $SD=.73$), that they enjoy being with other members of the community ($M=3.9$, $SD=0.89$), and that they would like to be a part of the community for a long time ($M=4.02$, $SD=.87$).

In the social network, 65 people appeared in selfies, comprising a network of people appearing in selfies together, as shown in Figure 2. In this network, each person was a node; nodes connected to each other by appearing in selfies together. The maximum number of people in a connected component within this network was 38.



Figure 2: Sociogram of Social Interactions in Selfie Game

6. CONCLUSION

Although the Arts Festival app provided opportunities for festival goers to share content with one another, few general app users that were not enrolled in the social game contributed photos to the app. Overall, participants of the social game indicated that they felt a sense of community simply by viewing the photos. Even though the sense of community felt by viewing the photos did not correlate with a user's own content creation, the use of a social game was a successful method to promote further content creation. Furthermore, engagement in the social game provided a conduit for social interactions among community members that may have not have occurred otherwise.

7. CITATIONS

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