WishBoard: Promoting Self-expression in Public Displays to Leverage the Notion of Community

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Abstract
The spread of mobile devices into the streets combined with the growing interest in interactive technologies in public settings raise a host of new challenge for human computer interaction. This study investigates the use of public displays in promoting the sense of community through the public self-expression. The approach involves a temporary interactive art installation that promotes people’s engagement on sharing anonymous wishes. This public sharing potentially leverage the feeling of a neutral ground for gathering and, consequently, socializing. In order to elicit data, we have made two deploys of a prototype named WishBoard in a ‘socially abandoned’ space. Analyzing the expressed wishes, we noticed cultural trails describing the profile of that community. Overall, this study demonstrates the role public displays and mobile devices can play in creating community meeting spaces and enabling individual expression in such social and communal spaces.

Author Keywords
Self-expression, ICT interactive installation, art installation, public display, socialization, thirdplaceness.

ACM Classification Keywords
H.5.m. Information interfaces and presentation (e.g., HCI): H.5.2.i. Interaction styles; H.5.2.i. Screen design; Miscellaneous.
Expression of thoughts, preferences, and feelings is a common and habitual practice. This expression reveals people’s internal attributes, such as preferences, beliefs, and values [7]. With the rise of social media, new possibilities of expression and communication are emerging. People can keep in touch with friends and family on-the-go through their mobile devices creating new social practices. However, supporting traditional social interaction (face-to-face) is still an important issue in order to support local communities and to avoid its fragmentation [3]. According to Kiesler & Sakumura [6] when people express their thoughts, using words, they may feel more committed to their thoughts and bound by them. Furthermore, designing tools for self-expression in public spaces has an important role for people in a community, remembering and celebrating their own culture [3]. In order to improve people’s engagement with their community, interactive public displays and public art installations are mechanisms widely used. Several studies show that public displays and public art installations can promote place attachment, community awareness, technology-supported relationships, foster face-to-face interaction, and encourage collaboration among community members [1][3][8]. Moreover, public art installations can give people the opportunity to express their individuality, thoughts and aspirations with their community. In this context, our goal was to understand if an art installation, called WishBoard [5], which allows self-expression, combining interaction between mobile devices and public displays, can support community awareness and socialization. To address this, we conducted an empirical study at a workplace to investigate the community experience in-the-wild and cultural trails in the anonymous posts shared.

**WishBoard**

WishBoard [5] is an interactive art project that invites people to share their individual aspirations and expectations in a public and common space. The installation gives people a reason and an opportunity to express openly their thoughts and feelings in a public and common space. This installation creates a space for people to socialize freely supporting the sense of community belonging and socialization. WishBoard consists of five screens allowing people to read and send messages, providing information for people that can leverage discussions and socialization. In addition, WishBoard translates the essence of Before I Die [4] with some adaptations maintaining the proposal of sharing in a public space, promoting individual reflection, supporting anonymous self-expression, and allowing variations. Before I Die [4] aims at contemplating death to restore people’ perspective and remind them of the things that make our lives meaningful. On the other hand, WishBoard celebrates life reflecting about individual expectations for the future filling the template “For the next year I want”.

**Study Design**

Aiming at investigating the real-use of the WishBoard, we carried out an in-the-wild study. We conducted this investigation dividing into two deployments allowing us collect data from messages, spontaneous comments and video recordings filming both the users and the installation. Besides that, one concealed observer was present taking field notes. This approach makes users behave most natural making the findings ecologically highly valid. In both deployments, we used the lobby of the Department of Computing at Federal University of Sao Carlos, once that space is a transitional and socially forgotten space, as well as, the space was in

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**Figure 1.** WishBoard installation (a), user interface (b), and a high level view of the system architecture (c).

**Figure 2.** The first Before I Die installation and people writing their aspirations on the wall [4].
the first Before I Die installation. In both deployments, the installation was available for five days. Regarding to privacy and ethical issues, we have used the department’s mailing list for informing people about the study, collect of data, and our privacy policies. We presented our concerns on keeping their anonymous nature using the content for research only, and even explaining how not to participate. However, we took care not to expose information that could influence the results. Moreover, we did not request register information from the users, e.g., name and email.

**Data Analysis & Findings**

*Understanding the audience behavior*

In this work, we manually analyzed fifty hours of recording from both deployments, captured by two cameras, making annotations, coding, and then summarizing the results. Inter-rater reliability was substantial (Cohen’s Kappa = .75). Observing the aspects described by Alt et al. [1]:

1. **Audience Behavior:** we noticed that users felt engaged in posting a message when they were in a group, about 68% of the messages. Groups formed around the screens started a competition for the most creative message. We also observed the Honey-pot effect in many situations. Sometimes people stopped late and had to walk back trying to explore/understand more about the installation when there was no one in the space or people were in a hurry noticing something new on site. In few moments, people appropriated the installation sending messages for the immediate present instead of future. People began to exchange messages to each other and to play to each other. People sent emoticons and internet slang expressions, e.g., ‘hauhauhau’ to express laughs in Brazil.

2. **Display Effectiveness:** it was evident the passersby turning their head to the installation area attracted by the screens. Some people kept on walking looking at the displays and some people mentioned curiosity in testing the system. In the first deployment, about 30% of the passersby stayed in the installation and more than half of these people remained there for more than one minute [5]. In the second one, about 25% of the passersby stayed in the installation and about 60% of these people remained there for more than one minute. We counted about 325 users sending messages in front of the screens.

3. **Social Impact:** people used the WishBoard space, once socially forgotten, to gather, to introduce themselves, and to talk about their common interests. People democratically shared devices, the pouf and even the floor. The messages leveraged discussions and laughs. We observed people experiencing unexpected encounters with their acquaintances. The place became a space for students, professors, employees and visitors to share playful conversations.

4. **User Acceptance:** we reviewed the videos observing regulars, people who used the installation more than twice and invited others to use it. In the first deployment, we had identified about seven regulars [5]. In the second, we found four regulars.

5. **Privacy concerns:** we noticed that some people wanted to show their message to others, to take a photo of their message and nobody expressed any privacy concerns.

*Finding cultural trails in anonymous messages*

In order to enhance our understanding about the audience, we conducted a language dependent analysis considering the 391 messages collected in the deployments. We classified these messages into the themes presented in ‘Before I Die, the book’ [4]: helping others, love, well-being, celebrities, fame,
family, religion, wealth, work, travel, outer space and sex. Moreover, we introduced three new themes: study, humor and politics. For each sentence, we classified in at least one of these themes. Our findings show that the both deployments have a similar pattern, suggesting their preferred topics. Comparing the results of Before I Die with the WishBoard results there is also a similar pattern, as presented in figure 5. However, WishBoard had a higher expression about work, study and wealth themes. On the other hand, we did not find messages in the themes: helping others, religion, and outer space. These results suggest that the place may lead people to think and talk more about the local context, in our case a workplace for some and study place for others. Furthermore, the Before I Die promotes a reflection about the life that has an end leading people to express religious values and feelings related to family. Interestingly, in a morphologic analysis we found out that 20% of the messages had superlative and comparative adjectives, predominating 'more' and 'better' words. In addition, 24% of the messages were metaphors.

Conclusion
In this paper, we demonstrate the relevance of supporting self-expression in public spaces through an interactive art installation at the workplace. This installation creates an environment to people express their thoughts, feelings, and aspirations. People shared the environment, once socially forgotten, using to discuss various topics and enjoying each other's company. The installation gave people a chance to socialize taking the advantage of the Honey-pot effect and provided information that leveraged conversations reinforcing their notion of community. Our study found that, by allowing this expression, offers the neutral ground to people express freely. In addition, we noticed the importance of allowing appropriation of use in self-expression. Overall, it validates previous work [5] reinforcing the essential role that public displays and mobile devices can play in providing an accessible mean for people express their individuality.

Acknowledgments
We would like to thank Boeing, FAPESP and CAPES.

References