Translating Art Installation into ICT: Lessons Learned from an Experience at Workspace

Vinicius Ferreira  Junia Anacleto  Andre Bueno
Advanced Interaction Laboratory Department of Computing
Federal University of Sao Carlos
LIA – UFSCar
Brazil
{vinicius.ferreira; junia; andre.obueno}@dc.ufscar.br

ABSTRACT
Interactive digital art can create innovative ways to stimulate and engage audience, what could benefit the space where the installation is done. Aiming at promoting the adoption of non-used places through pleasant experiences, we considered an art project that promotes people engagement to make them become the community’s wishes expression. We focus on understanding the process to translate the essence of an artistic expression using Information and Communications Technology (ICT). We translated this artistic expression into digital art installation within a socially ‘abandoned’ space at a workplace. The biggest challenge is to understand how people interact with the dynamic art-system, that, potentially, it leads audience to experience a highly intimate relationship with the installation and the space. Preliminary results reveal a similar behavior in the audience at both installations, which highlights the potential of ICT to translate the essence of an artistic expression and promote the adoption of a space.

Categories and Subject Descriptors
H.5.m Information interfaces and presentation (e.g., HCI); H.5.2.i Interaction styles; H.5.2.1. Screen design; Miscellaneous.

General Terms
Design, Experimentation, Human Factors.

Keywords
Interactive digital art installation, art installation, public display, socialization, WishBoard.

1. INTRODUCTION
In an interactive digital art, the artwork consists in creating a relationship between the active audience and the dynamic art-system [8]. These relationships are part of the relational aesthetics concept, a tendency in contemporary art in which art is a set of artistic practices that produce a social experience completing the artwork [5]. According to Fels [26], people build relationships with external objects to their own self depending on how deeply embodied the person is into an object or an object is into the person. These objects may be people, devices, or external entities.

For artists, achieving a deeply type of embodiment is challenging [26]. Issues relating to Human-Computer Interaction (HCI) are important for interactive digital art and may help artists in decision-making. In interactive digital arts, artists need to be concerned about the behavior of the artwork, the audience experience interacting with it or even each other, and with their degree of engagement [9].

Interactive art is a form of art that privileges experience over static objects. Taking the advantage of new technologies, interactive digital art can create innovative ways to stimulate and engage audience to interact with the dynamic art-system [8]. However, it is necessary more empirical research on translating (or transposing) the essence of artistic expressions from an interactive traditional art installation into an interactive digital art.

Translation is regarded as a process of transformation an object into an equivalent object in a different language or format retaining, as far as possible, the content of the message, features and functional roles of the original object [4]. Aiming at observing the potential of the mobile technology to produce the same personal involvement of an interactive art installation, we translated the essence of an art expression into an ICT installation. We also compared the results of our translated installation with the original art installation.

2. MAKING THE PUBLIC SPACE PUBLIC
Cities are evolving at a rapid pace contributing to a lack of interconnectedness among people in their daily routine. Public art installations have been used to improve people’s engagement with their city and community. These kinds of installation give people a space and a chance to express their individuality, thoughts and aspirations with their community, improving or creating relationships among them [6].

Designing space for self-expression and socialization has an important role for people in a community, remembering and celebrating their own culture [6]. Several art projects such as “Wishing Wall” [23], “Community Chalkboards” [12] and “Before I Die” [7] used the public space to promote community awareness of the audience through art as seen in figure 1. These art projects explored inclusive ways for reflecting and sharing a public space using relatively simple materials, e.g., post-its, stickers and stencils. In those studies, it was found that people decided to interact not only with the installation, but also with each other around them in that space. Furthermore, socio-cultural aspects in the audience expression were noticed in the installations [23][12][7].
In Wishing wall (deployed temporarily in Cape Town), people shared their wishes by asking for happiness, love and prosperity, and it was evident the lack of jobs in the city due to the number of job applications [23]. In Community Chalkboards, an art project chosen to be a memorial of the First Amendment to the United States Constitution, people used the place to hold public meetings both improvised and planned [12]. In Before I Die, an art project created by Candy Chang using an abandoned house in her neighborhood, people could pick up a chalk and complete the sentence “Before I die I want to …” in the wall, sharing their personal aspirations in a public space [7]. Chang observed that the space became a meeting point for neighbors introduce themselves and, consequently, people started taking care of that place [7].

Before I Die inspired thousands of people to replicate or to create several variations (remixes) in worldwide [7].

The present study considers the potential of ubiquitous computing technology to set up a space for socialization and self-expression at a workplace, a place where people can gather and the community awareness can flourish. For this, we translated the essence of “Before I Die” to an interactive digital art installation called “WishBoard”, which uses mobile devices as a way of interacting with the system.

3. TRANSLATING AN ART INSTALLATION USING ICT

Translating goes beyond transforming an object into an equivalent. Cultural issues play an important role in a translated object influencing its acceptance by people [16]. Lefevere and Broek [16] argue that communicative value and the time-place-tradition elements of the source object need to be translated by their nearest possible equivalents in the target object. Our previous studies show that ICT can be sensitive to culture [3]. Therefore, we intend to understand the essence of Before I Die and translate this essence using ICT due to their successful replications (about 425 walls in more than 60 countries). By doing that, we wanted to observe if an interactive digital art could promote the same personal involvement as the physical project does [7].

After losing someone she loved, Chang [7] had the idea to build an art installation in which people could reflect about what is important for them. She describes that, in order to build a Before I Die installation, it requires a location filled with people, a permission from the owner of the site and, finally, it is necessary to consider the city rules concerning public art. Then spread the word, make and install the installation; and, take care of the installation by adding chalks and erasing inappropriate messages. Gradually people’s responses set the tone of the installation [7]. Following the above-described steps, we started our translation process.

In the first Before I Die installation, Chang [7] used a socially abandoned space to bring it back to “life”. In order to do the same, we chose the lobby of the Department of Computer Science at Federal University of São Carlos (UFSCar) for the first installation of the WishBoard. This lobby was chosen once this space is a socially forgotten space, used only as an access way for people, although, the space is nicely located. As described by Chang [7], we asked a permission to the department’s head, who supported our idea, giving us permission to use the site.

The translation process of the installation considered finding the action possibilities and affordances in a Before I Die installation. According to McGrenere & Ho [18], when action possibilities and affordances of an artifact coincide with the goals of allowing the user performing the action, this coincidence determines its utility. For Gibson [11], an affordance exists regarding the action capacity of an actor and the affordance existence is independent of the agent skills to perceive them. An affordance does not change as the needs and goals of the agent do. Users have several action possibilities in the Before I Die installation, which are: a) leave a message, b) personalize your message, c) read messages and d) erase messages especially inappropriate one. In addition to these actions, Before I Die affords people to express freely without identifying themselves and, also, creating variations (remixes), adapting to other contexts.

In order to allow users to do the same actions of the original installation, in WishBoard, we adapted the Before I Die according to users’ action goals. For example, to leave a message on Before I Die wall, it is necessary to use chalk. In WishBoard, this ‘chalk’ was translated into personal mobile device, making this action flexible by allowing computers to be used as well. Figure 2 shows other differences between Before I Die and WishBoard, such as, people can personalize their message selecting a color - this was how we translated the colored chalk; WishBoard is formed by a set of displays where users can read messages instead of chalkboards or walls.

Figure 1: a) Wishing wall [23]; b) Community Chalkboards [12]; c) Before I Die [7].

Figure 2. Before I Die and WishBoard: a) leave a message (chalk versus phone); b) personalize message (chalk versus font); c) read messages (blackboard versus public screen).
According to Farnham et al. [10], McCarthy et al. [17] and Salvador et al. [24], by promoting community awareness, co-located interactions and technology-supported relationships, public displays can enrich the nature of existing spaces by enhancing place attachment and strengthening the sense of community through face-to-face human interaction. Scheible, et al. [25] and Kim et al. [13] also suggest that the use of public displays can promote collaboration among community members in public spaces. Public displays to support community interaction have a rich body of related work.

Regarding sentences that were not appropriate to show in the display, we integrated a filter into the system. This filter is based on a keyword blacklist and allows us to analyze the messages later. We implemented this filter due to the experience reported by Chang [7] about “wise-ass comments” written by some people, i.e., bad things.

4. DESIGNING A DYNAMIC ART-SYSTEM

Designing successful systems involve engaging users on the behavioral, visceral, and reflective levels [21]. In dynamic art-systems, the core of the interactive art is the interaction between the user and the computational system. Due the complexity of the behavior of human beings, observing them using an interactive system in action may be the only way to understand their behavior. Furthermore, the nature of an interactive work requires intensive testing before the final deployment. Beta_Space is a great example of an approach to refine work in different stages of development [9].

The design process of the dynamic art-system for WishBoard involved creating two medium fidelity prototypes. The first prototype took into consideration an effect like a ‘lottery’ of phrases which shuffling letters formed new sentences every 15 seconds (see figure 3a). The inspiration for a second prototype considered the imaginary and dreams, where sentences flowed from the screen going in perspective as if they were flying through the clouds (see figure 3b). After a preliminary investigation with the research group, the second prototype was chose as the best one by them. In contrast to the first prototype (more static), the second one provided a notion of continuous growth and it expressed better the individuality of the messages by differentiating the kinds of fonts.

Figure 3. WishBoard’s (a) first and (b) second prototypes. The evolution added movement to the messages.

In order to present the messages, we used a set of displays as shown in figure 4. Every time someone sends a message to the WishBoard, a typographic art animation is executed, displaying the message on the screen (see figure 5a). After that, the sentence ‘flies through the clouds’. While the recent sent message was presented on the main screen, other messages with some degree of similarity were displayed on secondary monitors. This was done to allow users to see what people around them posted about the same topic.

According to Fels [26], successful human computer interaction needs to consider and to allow the creation of relations between people and objects. For him, there are four types of relationships: response, control, contemplation, and belonging. These types of relationships may overlap during an interactive experience, developing an intimacy relation between a person and an interactive system. In the WishBoard, the first relationship called response begins with the first contact with the installation, also characterized as exploratory. In this relationship, people are attracted to the installation trying to understand more about it and, depending upon if the person’s expectations were satisfied, the relationship intensity increases. In the second relationship, control, the person feels able to interact with the installation. The contemplation occurs when people begin a dialogue with the displays, starting a reflection about the messages or initiating a guessing about whom sent those messages. The most intimate relationship, belonging, it can occur when the person sends a message, this message goes to the ‘clouds’ and it becomes part of the installation, giving the sense that the user is part of a community. Furthermore, the movement in perspective of the messages in the clouds creates the appearance of continuous growth that can be hypnotic attracting people to spend more time on the site. In addition, the installation creates an illusion of a link to a remote location in this virtual event as the ‘window’ mental model described in [10].

5. WISHBOARD EXPERIMENT

WishBoard is an interactive art project that explores the potential of mobile interaction with contextualized situated public displays. The installation gives people a space to share their individual aspirations and expectations.

Figure 4. WishBoard Public installation.

In order to provide people an inviting place, we placed a small rug and a pouf where people could sit, send messages and talk about what they were seeing on the displays (see figures 4b and 5). In addition, candies were available to all. We placed a banner and a folder to invite and explain people how to interact with the installation, sending a message, as seen in figure 4c.

Figure 5. Group of students hanging out.
Wireless Internet was available allowing people to submit their messages accessing a website. QR code and URL was provided for accessing the website to send messages (see figure 6), but there was also an option of sending via SMS. Before posting a phrase, the system presented to people the ethical agreement we have on keeping their anonymous nature and use the content for research only. Furthermore, they would be aware about the use of images to illustrate the study and no login information was requested, e.g., name and email.

**Figure 6. WishBoard smartphone interface.**

For five days, we deployed the installation to conduct a field study at a workspace collecting data from observations and logging, describing the experience in-the-wild. Some spontaneous comments were collected from people while they were at the place. About 26 hours of video were recorded filming the users and the installation.

The installation was done in December what motivated us to use the prefix ‘For next year, I want …’. We used the lobby of the Department of Computing to be visible for everybody passing by, attracting them to interact with the installation. In addition, the installation was set according to the model of central and peripheral attention [27] and observations done in our previous work.

6. DATA ANALYSIS AND RESULTS

Analyzing audience behavior may involve some measurements, which indicate what researchers hope to learn from users, defining their interests. In public space, the efforts in evaluation have been focused on identifying humans and clustering behaviors. By doing that, they aim at finding unusual behaviors that may help to model human interactions [28]. Automated processes as systems to track people can facilitate the task of identifying people and audience behavior. However, complicated scenes and uncontrolled environment can decrease the accuracy of these systems [28]. In our experiment, we manually analyzed the footage. Our aim was to observe the attractiveness of the installation, people’s behavior around the installation, social interaction between users and people’s concerns about their privacy. We also examined and classified all the sent messages and we compared the results with the reported experiences in the Before I Die installations [7].

In the WishBoard installation, we observed many of the passersby being attracted by the displays, turning their head to the installation area. About thirty percent of the passersby stayed in the installation and, more than half of these people, remained there for more than one minute. People used the place to gather, to introduce themselves, to send messages and talk about their common interests as well as to see what was being shown in the display (see figure 5). Sometimes, people subverted the installation proposal by sending messages about what they wanted at that time (immediately), instead of posting wishes for the future. People began to exchange messages to each other and messages with jokes to each other. Some groups formed around the screen started competing among them to see who would send the most creative message. One person sent an emoticon and another one sent a message for himself. Some people wanted to show someone else's messages (see figure 7) and some people tried to take a photo of their message. We also identified about seven regulars. The place became a space for students, professors, employees and visitors to share laughs and playful conversations. Similar behaviors were observed in the Before I Die installations. People used the Before I Die space to introduce themselves, to talk about what they read on the wall, and to write jokes, as seen in figure 8. Some people drew figures on the Before I Die wall, such as, hearts, stars and rainbows. Other people wrote wishes for the present, e.g., in Berlin, a man wrote on the wall that he wanted to eat a strawberry cake and then immediately he entered in the nearest café. In several Before I Die installations, it was evident the presence of regulars and some people took photos in front of the installation.

**Figure 8. Group of people being formed around the WishBoard and a Before I Die installation [7].**

In the collected comments from the audience, people were comfortable about using the system because they perceived that it was not possible to identify their messages. In Before I Die, some people reported that the anonymous nature of the contribution could also allow shy people to express themselves, working somehow as a kind of therapy [7]. Regarding the screens, in WishBoard, people said that they did not notice the connection between the messages that appeared on the secondary screens and the messages on the main screen. This happened because only a few messages contained verbs in the infinitive form and the algorithm for searching similarities cannot normalize phrases, what led the installation to present random messages on the secondary displays.
We classified the 244 messages collected into the themes presented in ‘Before I Die, the book’ [7]: helping others, love, well-being, celebrities, fame, family, religion, wealth, work, travel, outer space and sex. In addition, we introduced three new themes: study, humor and politics. For each sentence, we analyzed their words classifying in at least one of these themes. Comparing the results of Before I Die with the WishBoard results, as presented in figure 9, there is a similar pattern, but WishBoard had a higher expression about work, study and wealth themes. On the other hand, no messages were posted in the themes helping others, religion and outer space. This result may be explained by the fact that once we were at the workspace for some and study space for others, that could have lead them to think about work and study. Furthermore, at the end of the year, people are excited and happy with expectations related to the Holidays and the New Year, what led them to talk about positive things and wishes. For Chang, who was inspired by the loss of a friend, talking about life and death was important and led people to express religious values and feeling related to family. We also observed that people took care of the installation maintaining its high spirits. The WishBoard filter only blocked four messages by being potentially offensive.

There was a positive correlation between the sentences in both, WishBoard and Before I Die, for example: people want to live intensely, lose weight, find a love, be rich and visit other countries. In the analysis of some themes with a large amount of messages in the WishBoard, we see that messages in the well-being theme are about topics related to making people happy, wishing more parties and a asking for a better food at the university restaurant (figure 10a). In the work theme, people talk about the decreasing number of work meetings and bureaucracy, or about developing software or obtaining the master’s or doctorate degree, as well as the topic related to getting a scholarship (figure 10b). In the celebrities theme, the topic was mainly soccer, with some wishes for victories of the teams they cheer for and, also, some wishes for defeats of the opposing teams. Furthermore, some people posted parts of lyrics, their favorite movies' name and games, as presented in figure 10c. Interestingly, we found out that one in five messages had superlative and comparative adjectives, predominating 'more' and 'better' words, and 24% of the messages were metaphors.

7. CONCLUSION

In this investigation, we aimed at observing the potential of ICT to reproduce the same personal involvement of an interactive art installation. We presented how ICT can translate the essence of an artistic expression to promote people engagement. In order to do that, we conducted an experiment using a translated interactive art installation at a workplace. Professors, students, employees and visitors shared the space and used the ICT installation to express and discuss various topics, such as the ongoing Brazilian soccer championship, upcoming episodes of their favorite tv series, their wishes for love, peace, success and common interests. The installation provided ways for people to talk to each other and to spend some time together. Some people started to invite others to interact with the WishBoard and some showed their message to others. A casual tone marked the place, making people feel free to use the installation and stay around as long as they want, sitting on the pouf or even on the floor. In both installations, people openly shared their wishes and messages expressing their feelings, thoughts and jokes. By the analysis of the data collected and all the observations done during this project, we can say that ICT successfully translated the essence of an art installation and promoted the same personal involvement proposed by the original work.

The findings of this study also suggest that ICT can provide information to leverage discussions in a process of socialization, which can lead to strong social links and the place attachment. As next steps, we want to continue this study as well as to do some design refinements in WishBoard’s art-system to present the notion of quantity (number of sent messages), giving a better notion of the degree of collaboration and to explore the continuity along the screens. In addition, we want to verify if the collected messages can be used to define the cultural profile of a community. As an example, we had a large number of messages about soccer and no reference to any other sports, what can be connected to the Brazilian passion for soccer, culturally defining them. Also, Brazilians are known by their playful nature and easy going personality, what can justify the large number of statements related to jokes, metaphors, music and poetry.

8. ACKNOWLEDGMENT

We would like to thank Boeing, FAPESP and CAPES.
9. REFERENCES


