

Designing ICT for Thirdplaceness

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Abstract Thirdplaceness is the sense of being in a third place without architectural constraints. Third places are places that host regular, spontaneous, democratic, neutral, informal, and pleasurable anticipated gathering of individuals in which people can express themselves freely. These places contrast with the realms of home and work (first and second places), having an important role in community life in supporting civic engagement and community strength. Oldenburg defined the need for and properties of third places more than two decades ago, describing them as the heart of a community's social vitality. Bars, bakeries, parks, town squares, theaters, and churches are typical examples of potential third places. In third places, thirdplaceness occurs often maintaining and reinforcing in the community this sense of third place. Once society and technology have changed since Oldenburg introduced the concept of third place, we describe in this chapter how to design applications for public spaces in order to promote thirdplaceness. In addition, we present and discuss two public installations—Selfie Cafe and WishBoard—used to observe the incidence of thirdplaceness that emerged through the interaction with the interactive system. In both installations, we were able to notice the essential role that Information and Communications Technology (ICTs) can play in promoting self-expression supporting, encouraging, and fostering social interaction and thirdplaceness creating a social place.

Keywords Thirdplaceness · Pervasive computing · Urban computing · Social computing · Entertainment computing

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1 Introduction

Interactive technologies in public contexts are becoming an increasingly ubiquitous and public affair. This growing interest raises a host of new design challenges for Human-Computer Interaction (HCI), considering a more social perspective. In this hyperconnected world, public spaces once used as gathering places for the community, such as parks and squares, are getting less appealing than virtual spaces, resulting in a lack of interconnection among locals and community fragmentation (Brenny and Hu 2013). Such gathering places outside work or family-based contexts, described as third places, provide the feeling of inclusiveness and belonging to a community. Third places host the casual, voluntary, regular, and happily anticipated gatherings of individuals. Such places are the core setting of informal public life in a community. Oldenburg (1999) argues that the neutral and leveler ground in third places support to strengthen citizenship, performing a crucial role in the development of societies and communities. Traditionally, third places are a generic designation for a great variety of public places such as pubs, cafes, coffee houses, barbershops and beauty salons. However, to constitute a third place those places must exhibit certain attributes constructed through specific social and environmental characteristics, discussed in the Sect. 2.

In contemporary society, individuals suffer from the lack of places to relief from the stressful demands of work and home life, leading to a consumption-oriented culture and the absence of informal public life. Spaces for relaxation and leisure are becoming objects of consumption and private ownership (Putnam 2000). For the greater community, the third place fosters stronger community ties through social interaction, promotes quality of life and reinforces in their regulars the sense of community.

Sense of community is a perception of similarity that makes one feels as part of a larger dependable and stable structure, an interdependence that people have with others combined with a willingness to maintain this interdependence (Sarason 1986). Sense of community can emerge combining territorial and relation dimensions (McMillan and Chavis 1986). The territorial dimension focuses on the territory, shared space, and proximity. On the other hand, the relational dimension includes factors of nature and quality of relationships.

Aiming at strengthening the sense of community, several studies have found that the use of Information and Communications Technologies (ICT) such as public displays often associated with personal mobile devices, wireless internet available and the presence in virtual social networks (e.g., Facebook and Twitter) when contextualized in public settings can enrich the nature of the existing spaces. In addition, those technologies can enhance the community awareness, foster civic engagement, and promote socialization through face social interaction (Farnham et al. 2009; McCarthy et al. 2009; Salvador et al. 2005). Thus, understanding how to design for social experience in public and semi-public spaces is getting ever more pertinent.

In this chapter, first we describe the concept of third places and its evolution into thirdplaceness. Second, how ICT can support communities and allow self-expression. Then, we present how we approached to design two installations exploring different ways of promoting thirdplaceness using ICTs and enabling people to express themselves, and then we discuss our findings with these installations. Finally, we describe our conclusion claiming that public sharing represents a promising model for mobile social collaboration in promoting thirdplaceness and reinforcing the sense of community.

2 Third Places

Oldenburg (1999) coined the term “third place” or “great good places” to describe public places where people gather for social interaction and enjoy each other’s company. Beyond the realms of home (first place) and workplace (second place), third places promote an intimate personal ties among individuals who attend such places strengthening the sense of community. However, a harmonious balance between the domestic, productive, and sociable realms of everyday life is necessary to maintain a good quality of life.

Third place emerged from the separation of social and everyday experience in three places: first, second, and third. The home is the “first place,” characterized by being a domestic and private location. The “second place” is the work, environment dedicated to achieving a productive and/or paid activity. The “third place” is an environment for inclusive socialization and conversation, where life in society can flourish (Oldenburg 1999).

The term third place represents those public places characterized by being democratic, promoting informal conversations and discussion of ideas, thus forging the community profile. These places nourish relationships and a diversity of human contact complementing the social experience of individuals in a society, in addition to work and home. However, third places are not mere shelters of home and work (Oldenburg 1999). Cafes, coffee shops, community centers, bars, beauty parlors, theaters, and squares are examples of third places, once they meet certain characteristics.

In order to promote the unique social experiences associated with these great good places and to consider a place as a traditional third place, the following characteristics are essential:

- **Neutral ground:** the place should allow occupants the ability to come and go when they want, without any obligation or undertaking, be it financial, political, legal, or any order;
- **Leveler:** there can be no importance on the social or economic status of individuals, no prerequisites or requirements for participation or acceptance in a third place;

- **Conversation is the main activity:** the relaxed and humorous conversation is the main focus of activity in third places, although do not need to be the only activity;
- **Accessibility and accommodation:** the place should be economically and physically accessible, provide the necessary to make people accommodated and feel that their needs were met;
- **The regulars:** the place has regulars who help define the characteristics of the space and facilitate the accommodation of new patrons, making them feel welcome;
- **A low profile:** no extravagance in architecture and design and offer a welcoming atmosphere for people from different social classes;
- **The mood is playful:** With no tension or hostility, the tone of the conversation is always relaxed;
- **A home away from home:** the occupants often may feel belonging to the environment, feeling comparable to the warmth they feel in their own homes.

Third places are crucial components in a community, helping to create a sense of community and place. These places often invoke a sense of civic pride, diversifying and enriching local culture and democracy. However, according to Oldenburg (1999) World War II marks the decline of informal public life, mainly, in the United States. He claims that urbanization process prompted an urban renewal taking down the importance of congenial, unified, and vital neighborhoods. Unlike the old neighborhoods, most residential areas have been designed to protect people from community rather than connect them to it. Putnam (2000) also associate this decline of third places to the new media, explaining that third places are means to keep in touch with reality, giving the people opportunity to question, protest, sound out, supplement, and form opinion locally and collectively. In contrast, efficient home-delivery media systems, such as television and newspapers, tend to be one-way communication, which can make shut-ins. On the other hand, many scholars have questioned that, once new media might be part of the solution (Schuler 1994; Wellman 1998).

2.1 *From Third Places to Thirdplaceness*

Directly addressing to Oldenburg's third places, studies of virtual environments such as social networks, chat rooms, and multi-user systems claim that cyberspace can rebuild aspects of community working as a third place (Kendall 2002; Schuler 1994). According to Agren (1997), as a reaction to the disappearance of third places in the physical world people have found in virtual environments their third places. These virtual environments have provided "the death of distance" and opportunities for people with common interests to communicate synchronously and asynchronously in cyberspace leveraging third place characteristics (Pasick 2004). Several online social networks have attributes that describe a third place. Taking as an example the social networks Facebook and Twitter, they are affordable virtual

environments, inclusive and anyone with a registration can discuss or express comments and opinions, serving different user profiles and regular. These virtual environments are a neutral ground, warm and relaxed for some regulars are kind of like a “home away from home” (Soukup 2006; Memarovic et al. 2014).

However, those virtual environments are not the same kind of place that Oldenburg had in mind, once they do not provide the “realness” of the interaction or need for simulation (Turkle 1996). According to Farina (1998), a third place exists only attached to its neighborhoods, to local work, play and family life, to the institutions and activities that encompass daily routine. In addition, virtual environments dramatically differ from third places, once third places emphasize localized community, are social levelers and accessible (Soukup 2006). Nevertheless, both public places (e.g., third places) and more private or exclusive places are crucial in building social capital (Putnam 2000).

With the absence of third places, some companies began to announce that its stores are third places, e.g., Starbucks and Applebee’s. Despite that, these companies have failed in meeting some characteristics of third places and they do not engage its customers to have informal social interactions (Khermouch and Veronsky 1995). For Oldenburg (1999), third places have a civic responsibility for the maintenance and revitalization of the community. On the other hand, locations such as Starbucks emphasize customer satisfaction rather than civic responsibility, referring to an interpretation of “third-place-ness” (Walker 2010). However, this interpretation may not meet to social needs of a third place. Considering the lack of third places and the need for promoting the sense of being in a third place, we prefer to use the definition of thirdplaceness as the event of achieving the third place’s characteristics in certain place and time (Ferreira et al. 2015a).

Thirdplaceness is defined as the state where and when a specific space have the features of a third place, independent of time constraints (e.g., a happy hour). Thirdplaceness is the feeling that people have in a certain place at a certain time that makes them feel, interact and express themselves as in a third place, in a process of socialization. This sense of place and time for community socialization is built and sustained through the experiences and interactions with the space at a certain time, with others who are present there, and may be physically or virtually (Ferreira et al. 2015a).

Studies from Memarovic et al. (2014) and Calderon et al. (2012) found evidences of the thirdplaceness experience, observing a spontaneous and unplanned formation of groups in public spaces (e.g., on a sidewalk, a corridor, a gateway) to socialize and discuss everyday issues. In those groups, people came in and out forming as they please: forming, changing, and ending groups over time. Memarovic et al. (2014) associate this experience with the creation of discussion groups on Facebook, suggesting that this behavior is a clue to the similarity between the way people tend to deal with others in physical and virtual sites, blurring the distinction between physical and virtual world.

Memarovic et al. (2014) and Ferreira et al. (2014b) argue that using ICT to promote thirdplaceness experience can give communities more opportunities to strength their identity and ties. Furthermore, thirdplaceness experience can transform

the location in a third place for a moment or, sometimes, permanently. However, in third places the thirdplaceness experience is very often maintaining in the community that feeling of ‘great good place’.

Ferreira et al. (2015b) and Calderon et al. (2012) have observed that ICTs can provide content and contextual information to leverage discussions, interactions and collaborations among people. According to Anacleto (2014), this occurs since ICT provide information to people facilitating and encouraging conversation and social interaction. In addition, ICT provide access to the desired information to promote discussion. People can have access to different ways for people to interact with each other, both locally and virtually. Interactivity can strengthen the relationship between the third place and its visitors leading to stronger social ties.

Thus, the concept of thirdplaceness evolves the crucial role that third places have spaces in society, transforming the concept of third places in a phenomenon and not a place at a certain time. We believe that urban planners and designers should discuss and develop thirdplaceness, considering the future of urban spaces, sustainability of community life, promoting interconnection among people, remembering and celebrating the culture of the community.

Third places provide means for people to connect with their community through personal ties outside the realms of home and work (Oldenburg 1999). For the individual, third places provide a sense of inclusion and belonging to the community (Soukup 2006). These factors are crucial in supporting thirdplaceness, which is the focus of this chapter. In addition, the design of applications for public spaces should consider the user experience and other variables beyond the technology, as the space where the user will use the application (Preece et al. 2002).

Thirdplaceness emerges from the experiences and interactions with and in the place, which can transform a space in a third place-like permanently or just for a certain time. To achieve thirdplaceness, designers need to promote a context for sociability, spontaneity, community building and emotional expressiveness. In addition, thirdplaceness is not limited to architectural constrains as a third place is. For example, in a barbecue or in a house party the thirdplaceness can occur, giving the people the temporary sense of being in a third place.

Aiming at creating a favorable environment to support the feeling of being in a third place defined as thirdplaceness, we describe the design of two interactive public installations in the Sect. 4. With these installations, we intend to stimulate public self-expression using public displays in a space socially abandoned by the community to promote thirdplaceness.

3 ICT to Support Community

Cities are evolving at a rapid pace bringing new challenges for urban designers, such as air pollution, increased energy consumption, traffic congestion and effective representation of citizens’ interests. Until recently, these problems have been nearly impossible to mitigate, given the complexity and dynamics of cities. However,

nowadays there are technological means to help at solving such problems by capturing and interpreting data produced in urban areas. Such data may produce information to help in the planning and development of cities, one of the goals of urban computing (Zheng et al. 2011).

Urban computing is a process of acquisition, integration and analysis of a large and heterogeneous set of data generated by various sources in urban areas, such as sensors, devices, vehicles, buildings and human beings. With such data is also possible to understand the nature of urban phenomena and even predict the future of cities (Zheng et al. 2014). Therefore, urban computing comprises an interdisciplinary field of research, integrating computer science with traditional fields, such as transportation, civil engineering, economy, ecology, and sociology, in the context of urban spaces.

The vision of urban computing is on the need to address the problems of big cities. For this, this research area aims at extracting knowledge from the data collected in urban spaces by technologies to benefit people who live in those cities (Zheng et al. 2014). Urban computing is an emerging and challenging field of study intending to provide new experiences to people to improve their lives while living in the urban area through computer applications.

Although urban computing is a recent research area, since the early 1990s (Schuler 1994) there has been a considerable enthusiasm on how to use ICTs to support local community ties. However, many government strategies and policies focused on providing infrastructure and public internet access points (Gaved and Anderson 2006). Paulos et al. (2004) state that mobiles devices readily connect us to friends and known acquaintances. Nevertheless, there is a lack in exploring and playing with our subtle connections to strangers in public spaces.

Information and communications technology applications are increasingly pervading our shared urban spaces. We claim that promoting self-expression through public sharing technological applications represents a promising model for mobile social collaboration in promoting and reinforcing the sense of community.

3.1 Promoting Self-expression with ICT

Self-expression is a common practice for humans in everyday life. This kind of expression occurs in several ways and involves projecting thoughts, feelings, opinions, and identity into the world. With this practice, people reveal their internal attributes, such as preferences, beliefs and values. In Western culture, self-expression is valued as a powerful sign of freedom for individuals (Kim and Sherman 2007).

For many years, people have been using public space to express themselves, either to protest and show their indignation by a subject, or to show their creativity using for example a graffiti on a wall or writing in public toilets doors. According to Brenny and Hu (2013) people are always looking for ways to express themselves, but some forms of expression can be illegal when done in a non-organized manner. Promoting

organized forms using urban interactive installations are a great way to foster self-expression and to strength the sense of community and interconnection among people in a community.

In order to help people to break the social barriers several studies have explored the possibilities of ubiquitous technologies in public spaces. Abouzied and Chen (2014) explored the use of a wristband, called CommonTies, to encourage social interaction among strangers. This technological device tries to match contextual information among people and warns users when there is someone close by with same interests. CommonTie considers as contextual information data from users, such as, where they are heading to and how close they are. By having something in common, this can facilitates and encourages people to find someone and start a conversation. Aiming at proving relevant content for people content to support socialization, Kim et al. (2010) conceived a social media platform. This platform provides recommendations based on user's location, interests and social relationship information, allowing people to know better each other.

Collaboration in public spaces is also an important issue. The ActiveCampus project (Griswold et al. 2004) uses location aware systems and public broadcasting to stimulate social interactions among students in a university campus. In this application, they observed that people are more likely to message each other when they are in close proximity to one another, even with strangers. This study suggests that relative location is a relevant factor for designers in community-oriented applications.

Taking the idea of a community gardening, Bueno et al. (2014) created a system called "Watering the Garden." This system consists of a small garden enclosed into a coffee table, a projected display, a situated large display and a sofa. The main goal of the system is to engage people to interact with strangers when they are using the system to take care of the garden. With this project, they argue that introducing physical objects on an interactive system can effectively attract passersby to interact with it.

To promote community interaction and place awareness, Memarovic et al. (2012) proposes a framework called Interacting Places Framework (IFP) focusing on public displays. This framework covers the key elements of interacting places, helping designers to develop public display applications. IFP comprises the following components:

- **Content providers:** people who are supplying or posting the content;
- **Content viewers:** people who are consuming or visualizing the content;
- **Communication channels:** they deliver the content and range from public to closed-group channels;
- **Awareness diffusion layer:** this layer promotes community interaction either explicitly (through content tailored towards a specific audience) or implicitly (by observing the output for other people).

An example of a community-oriented application is an installation called "City-Wall" (Peltonen et al. 2008). This installation has a multi-touch large public display that shows pictures from Flickr tagged with 'Helsinki'—the name of the city in Finland. In this study, they observed that people, without noticing it, started

to talk with strangers when the image they were manipulating went to the other part of the screen where there was someone else.

Public authoring enriches the space by sharing local information, knowledge and experiences (Lane et al. 2005). 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 can promote place attachment, community awareness, co-located interactions and technology-supported relationships (Farnham et al. 2009; McCarthy et al. 2009; Salvador et al. 2005). In addition, public displays can foster face-to-face human interaction and encourage collaboration among community.

Transforming in playful spaces is another strategy adopted in public spaces (Silva and Hjorth 2009). By using games, the urban space can work as a game board allowing people to interact with interactive installations or buildings. Silva et al. (2014) created an instance of the game breakout enabling people to play with the game with their body. They found that using games can allow people to collaborate with strangers without realizing. For Abouzied and Chen (2014), adopting technology to introduce new practices and change the way people use a certain space does not necessarily mean a problem.

Emotional expression is a critical component of social interaction and ICT can enable this kind of expression. For this, Silva and Anacleto (2015) implemented a system called "Emotifed" that allows staffs to give emotional feedback anonymously about the announcements from their superiors. They observed a change in the organization into a more organic and flexible structure, promoting an emotional balance in the community.

Designing tools for self-expression in public spaces has an important role for people in a community, remembering and celebrating their own culture (Brenny and Hu 2013). However, the tools need to emphasize social engagement, long-term social impact, and social capital, attending people with little or no technical knowledge. For Scheible et al. (2007), creative and playful approaches can provide people a community awareness and belonging, making people feel that they are collaboratively contributing to a common goal. Moreover, to understand the role and impact of technologies to promote thirdplaceness and socialization in a public space, an increasingly adopted approach is the in-the-wild study.

In-the-wild study involves the deployment of technologies in real-world conditions to observe the use of these technologies by people in a real context of use (Rogers 2011). Rogers et al. (2007), studies conducted in the laboratory of certain technologies, especially the ubiquitous, may fail to capture many of the complexities of the situations in which applications will pass. The in-the-wild approach allows researchers to explore and understand how people understand, use and appropriate new technologies. In addition, this approach has been widely adopted by researchers in several areas, such as, Ubiquitous Computing, HCI and Computer Supported Cooperative Work. The advantage of using this approach is that users behave more naturally, making the findings more ecologically valid. On the other hand, researchers must have a concern on the privacy of users and the exposure of participants (Marshall et al. 2011).



Fig. 1 Selfie Cafe installation in a common space at a public university department

In order to increase the feeling of interconnection among people of a public space, we present in the next sections two interactive installations—Selfie Cafe and Wish-Board. We deployed these installations in a (semi-)public space, using the approach of an in-the-wild study.

4 Selfie Cafe

Selfie Cafe is an interactive installation that allows users to take a selfie (a photo of themselves) and share it publicly in a large display. With this application, we intend to support, encourage and foster social interaction among students, professors, staff, and visitors of a university.

We placed the installation near of a coffee machine situated inside of a university department, as presented in Fig. 1. The focus of the application is to work as an “ice-breaker,” creating a social buzz and helping strangers to interact to each other.

4.1 *Installation Design*

The idea of creating Selfie Cafe came from the growing movement around taking a “selfie.” According to Shipley (2015), the pure and ideal form of the selfie involves taking a photo by holding the camera at arm’s length, preferably using the front camera of a smartphone to compose the image on the screen or point it into a mirror. Selfies can be individual or posed with others. However, this aesthetics of the selfie have evolved to such an extent that an individual no longer have to take the photo himself or even be in it for it to be considered a selfie. Selfie is a type of self-representation of an individual with the self as the main protagonist. The ideology of selfieness is from taking a picture of the subject of the selfie in a spontaneous moment of self-production.

To support taking selfies in a playful way, we created the Selfie Cafe. This application differs from others in the way of taking photos. Instead of asking people to use their mobile devices to take the pictures, we used a toolkit called UbiDisplays (Hardy 2013). This toolkit allows creating interactive interfaces from projected displays, transforming any surface into a touchable one. We used this to let people curious to how the application works, motivating the use and adoption of the installation.

The process of interacting with Selfie Cafe and taking a picture consists of three steps. First, the user touches on the camera icon displayed on the touchable screen on the wall. After that, a 5 seconds countdown starts on the projected screen, over the image of the user captured by a webcam. With this countdown, the user can be prepared for the shot. When the countdown finishes, the system takes the selfie and the projection freezes allowing user to review the picture taken. Thenceforth, users can choose to share or delete the photo. After choosing one of these options, the system gives a feedback message to the users.

We used a large display to show publicly the selfies taken using a photo carousel. We placed this large display at the side of the projection on the wall, where people would take the photos. Every time a new photo comes into Selfie Cafe system, the large displays present it allowing people to show others.

In order to introduce some gamification element, we included a voting system for people elect the best selfie. The winners within the most voted selfie win a prize, which in our case is free ticket for the coffee machine situated at the side of the system. To allow people voting, we provided a QR code and a tiny URL. Moreover, we presented on the large display the three photos most voted to make people aware of the competition status. Therefore, even if people do not want to take a selfie they can participate of the social activity by voting or talking about the shared photo.

The system was developed using C#, PHP and JavaScript and we used the MySQL database to store the photos that were converted to base64 data, to better manage the access to those pictures. We also used a Microsoft Kinect Sensor in order to capture the users’ movements on the wall to make it touchable with support of the UbiDisplays toolkit.

4.2 Discussion

Aiming at observing the impact of the installation and the adoption process, we decide to approach an in-the-wild study with Selfie Cafe. We collected data from observations and spontaneous comments, without any interference from the researchers. The space chosen was a public space near to the community kitchen area of the computing department of a public university.

Before installing the application, we carried out an analysis of the space, in order to understand how people were using that space. After 2 weeks, we found that between the classes were the times people crowded that space in order to buy a coffee in the coffee machine. However, the time they spend in there were quite short, 5 minutes in average including the 2 minutes to get a coffee in the machine.

Regarding people's privacy, we placed a folder announcing generically the study to prevent influencing the results, making people aware of the study.

Selfie Cafe installation evoked interest from people who interact with it. After visualizing their image projected on the wall, people usually tried to explore more. They were curious on discovering the purpose of the installation and if it was interactive. This curiosity becomes clear in some spontaneous comments, such as, "Oh my God, this is so cool. Can I try it?" and "Is this real? I want to try it." This states the appealing factor of the installation.

After exploring the installation, people started to realize that they could use it by touching on the image projected on the wall. We observed that once someone was willing to take the photo, they usually started to laugh and they want to take the photo with someone close by. This fact can be the opportunity for interacting with a stranger.

When the photo was taken, people looked excited and curious in understanding how the installation works. This curiosity can leverage discussions among people around. Once we deployed in a computer department, the installation evoked some theories in our audience. They started to discuss on how the installation probably works and what technologies are involved in the system.

About the photos displayed on the large screen, people started to hangout around the installation commenting the photos, and we observed some of them getting their mobile device to access the Selfie Cafe website to vote. We notice some people taking a picture of their displayed picture with their mobile phones. In addition, we noticed some indices that some people were invited by others to interact with the installation.

With Selfie Cafe, we provided a social activity to create a community-meeting place where people could spend some good moment, enjoy each other's company and share conversations, laughs, and photos.

5 WishBoard

WishBoard is an explorative artistic representation of the community wishes. The installation invites people to share openly their individual expectations, thoughts, and feelings in a public space. WishBoard aims at promoting the sense of community through a collaborative artistic expression of the wishes of its participants. This kind of self-expression is a powerful sign of individual freedom in western culture, revealing people internal attributes, such as preferences, opinions, and values. Since we all have dreams, plans and goals for the future, the installation works as a reminder for people of a community to pursue their dreams, contributing to strengthen interconnectedness among people (Ferreira et al. 2014a).

The main concept of this project is a reinterpretation of a chalk-and-wall-based art installation called *Before I Die*. *Before I Die* is an art project that invites people to reflect on the finitude of life, pick a chalk and write on a chalkboard painted wall their individual aspirations for before death in a public space (Chang 2013). On the other hand, WishBoard celebrates life giving people a chance to share their future goals, creating a social place where people may attend to discuss their wishes, socialize, and relief from the stressful demands of everyday life. In this democratic space, community social life can flourish, which can lead to stronger community ties.

WishBoard comprises a concept of using technology to share wishes in public spaces aiming to provide a sense of community. We are exploring different metaphors to embody this project, as shown in Fig. 2.

For a community, having spaces for self-expression and socialization plays a crucial role in keeping their own culture alive (Brenny and Hu 2013). WishBoard gives people an opportunity to deeper know the community and the local people expectations for future. In addition, people can learn about the culture of the group, including its values, attitudes, and expectations, once that is part of the process of socialization (Corcoran and Clark 1984). From the perception of similarity to others, people can feel part of a larger dependable and stable structure, defined as sense of community (McMillan and Chavis 1986).

5.1 Installation Design

The inspiration for this project came from the *Before I die* project (Chang 2013). Aiming to provoke a similar feeling and engagement on the audience we reinterpreted it using the concept of translating art using ICT (Ferreira et al. 2014a) and the embodiment design (Fels 2004).

According to Fels (2004), 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. He suggests four relationships: response, control, contemplation, and belonging. These types of relationships occur during the interactive experience



Fig. 2 WishBoard installations exploring multiple screens and projections

and may overlap, increasing the intimacy relation between a person and an object. In both installations, WishBoard and Before I Die, the first relationship, called response, is exploratory and begins with the first contact with the installation. 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. Regarding the second relationship, control, the person feels able to interact with the installation using either a mobile device or a chalk. The contemplation occurs when people begin a dialogue with the displays or wall, starting a reflection about the messages or initiating a guessing about whom sent those messages. The most intimate relationship, belonging, can occur when people participate of the artwork contributing with their message that becomes part of the installation, giving the sense of community belonging to the user. Furthermore, the messages and the quantity of messages can afford people to spend more time on the installation.

Aiming at building a great experience leading to an intimate relationship between audience and the installation, WishBoard considered imaginary and dreams as key metaphors. The main screen represents a “wish catcher,” in reference to the “dream catcher” from Native American culture. This “wish catcher” selects the wishes giving a visible space for them. People can follow the shared wishes coming from the main screen, flying through the clouds and going into other screen. Moreover, every time a new wish comes to the installation, the system presents the message with a typographic art animation for few seconds, expressing the uniqueness of the wish. After that, the message goes to the “clouds” and joins to the collective on the wall, becoming part of the installation. With this collaborative expression, the installation provides the sense of belonging to the community and place attachment, as if a part of themselves was rooted in that place. In addition, the main screen creates an illusion of a “window” to a remote place linking that virtual place to the physical place when the message comes out of the screen and goes to the wall or other screen.

This project explores the interaction with contextualized situated public displays using personal mobile phones to build an intimacy and embodiment relationship between people and people, and people and the dynamic art-system. WishBoard offers a space for self-reflection and contemplation, creating a rich aesthetic interactive experience on the behavioral, visceral, and reflective levels.

In a process of self-reflection, using words to express thoughts can make people feel more committed and bound to them. Regarding the sharing of wishes on WishBoard, people just need connect to the installation wireless signal using their mobile device and then fill a sentence. This creates a link to the place as a space for self-expression, leveraging to place attachment and supporting the occurrence of thirdplaceness.

In order to maintain a playful mood in the installation and avoid display unsuitable sentences, WishBoard has a keyword-based filter. WishBoard system is web-based written in a combination of HTML5, CSS3, and JavaScript. In order to control and synchronize the screens we implement a websocket server.

5.2 Discussion

In order to understand the audience behavior and the impact of the technological installation in a public space, we carried out an in-the-wild study with WishBoard. We collected data from shared messages, spontaneous comments and video recordings filming both users and the installation. In addition, a researcher was present in a strategic place, taking field notes without disturbing the normal characteristics of the space. We deployed WishBoard at a hall of a university department in two different occasions, totalizing 2 weeks of experiment.

To deal with the privacy, we used the mailing list of department to inform people about the installation, as well as data collection, the presence of cameras, and privacy policies. In addition, before posting a message, the system presents to users our privacy policies and the ethical agreement on the use the collected data only for

research purposes. Besides that, we did not collect personal data (e.g., name, e-mail, and age) and we de-identified all data that can identify participants or that might embarrass them.

In order to make installation visible for passersby, we used the central and peripheral model. In this model, Weiser and Brown (1997) argue that technology can engage users without generating a visual or cognitive discomfort. The model of central and peripheral attention describes that objects can attract the viewer's attention, even though the peripheral zone of vision. According to this model, much of our brain is devoted to processing peripheral (sensory). Thus, when there is something unusual in place, you can capture and bring this new information to the central area of the user's attention.

During the analysis of the recordings and the notes, we observed that users felt more involved and committed in interacting with the installation by posting a message on WishBoard when they were in a group (68 % of the messages). A behavior observed in the groups formed around the installation, was a competition for the most creative or funniest message. Moreover, it became clear that in many situations, the public around the installation progressively increased when there was a group in front of screens, forming a 'buzz' social in place and creating the effect defined as honey-pot (Brignull and Rogers 2003).

Beyond the honey-pot, sometimes people were attracted to the installation, making a late stop and walking back, trying to explore and understand more about the installation. Unlike the honey-pot, this effect, known as landing effect (Müller et al. 2012), occurred more frequently when there was no one in the installation and in some cases when people were in a hurry and through peripheral vision sensed something different in place.

During the experiment and analysis, moments found that people appropriated the installation. According to Salovaara et al. (2011) appropriation refers to the creative and innovative ways in which users adapt technologies, assigning a new purpose and adapting the solution to their goals. In WishBoard installation, people subverted the proposed installation in some situations, sending messages related to immediate present rather than the future, as the theme of the installation suggested. An example of this appropriation is in the following sentence: "For next year I want a coffee." Another example is the use of the installation as a messenger to exchange messages, sometimes going with a relaxed tone, such as the message: "For this year I want Lucas really work." In addition, people sent emoticons and common expressions in internet communication contexts, as "hauhau" to express laughs by Brazilians (Ferreira et al. 2015b). This suggests that, in public spaces, installations must be prepared for the honey-pot and landing effects. Besides that, self-expression tools need to allow appropriation of use, as a sign of new uses for the installation, reflecting the needs of some users.

Attracting the attention of users through interactive installations is not a quite simple task for designers. In public spaces, the challenge is even greater due to the presence of many other objects competing for user attention (Müller et al. 2012). In WishBoard installation, we observed passersby turning their heads to the installation area, feeling attracted by the public display. Some people mentioned having curiosity

in testing the system, asking questions about the installation to other people on the site. In the first deployment, approximately 30 % of passersby stayed in the installation and more than half of these people remained in the place for more than 1 minute. In the second, about 25 % of passersby stayed in the installation and about 60 % of them remained in the place for more than 1 minute. Moreover, in both deployments we counted approximately 325 users sending messages in front of screens (Ferreira et al. 2015b).

To achieve the effectiveness of the installation, the attractiveness plays a key role to draw the audience’s attention and engage them in using WishBoard. Since this appeal goes beyond aesthetics and encompasses factors related to the physical location of deployment, disposal of the installation and the ease of access to the site. Moreover, the effectiveness of the public display raises an issue of whether the system is able to maintain the public attracted and engaged for long term.

In both deployments with WishBoard, people appropriated of the space, previously used only as access to the department, as a meeting place to introduce to each other and talk about their common interests. People shared democratically their personal mobile devices and the furniture available. The displayed messages in the public displays leveraged discussions and even laughs. For example, a group of people began to discuss about the messages displayed on the screen attempting to guess who could have sent those messages, showing an interest in knowing more about their community. During the analysis, we found the occurrence of unexpected encounters between friends and acquaintances, as presented in Fig. 3.

The space, previously socially abandoned, transformed into a social place for students, faculty, staff and visitors to share casual and informal conversations. We



Fig. 3 User greeting an acquaintance while he was using WishBoard (Ferreira et al. 2015b)

noticed that public displays support the notion of community built and maintained by experience and interaction with and in place. In addition, self-expression and content provided by these public displays can lead to leverage discussions among people.

Attractive design systems that are able to make users feel encouraged and interested in interacting with them compose one of the biggest challenges in public installations. Nevertheless, keeping people involved in a continuous and regular use with the installation is even more difficult. Regulars are important for installation that promotes thirdplaceness because they shape the “tone” of space, encouraging others to use the installation and the space. In this context, we considered as regular people who sent messages for installation at different moments (two or more times) and invited other people to interact with WishBoard. In the first deployment, we identified seven regulars in the second implantation four other regulars. To illustrate how we identified these regulars, Fig. 4 shows some of these regulars.

Regarding privacy concerns, we perceived in WishBoard people willing to show their message to others, pointing their finger to the message or even calling someone



Fig. 4 Users using WishBoard at different occasions, engaging others to use the installation and talking about the shared wishes in a socialization process (Ferreira et al. 2015b)



Fig. 5 **a** Student celebrating a message sent to her and **b** users taking pictures of the messages they sent on WishBoard (Ferreira et al. 2015b)

to see your message. For example, a user called a friend to go in front of the screen because he will send a message for her wishing that she finished her doctoral degree. After she reads the message for here, as response to the surprise, she smiled and raised his hands in celebration, as shown in Fig. 5a. In addition, some people took pictures of their messages, as presented in Fig. 5b.

In the collected comments, people said they realized that it was not possible to identify your messages, making the system use more comfortable for them. Besides that, no one expressed any concerns about privacy. For Chang (2013), in public installations anonymity play an important role allowing shy people to express themselves more easily. This anonymous nature of the wishes creates a neutral and leveling ground, where everyone can participate without worrying about their status in the community.

In our deployments, we have noticed that people kept their spirits high, avoiding spreading bad feelings. Moreover, we are thinking in engaging the community to report the unsuitable sentences to help in the maintenance of the installation.

6 Conclusions and Future Work

In this chapter, we focus on how ICT can promote thirdplaceness and support communities. For that, we designed two installations and deployed them in-the-wild to observe the occurrence of thirdplaceness in a place augmented by ICT and that is not a third place. Thirdplaceness gives people the experience of a “great good place” transforming a space in a third place for a period or permanently.

Third place is a community-meeting place where people can talk freely, openly, and entertain without caring about their social status. Oldenburg (1999) describes third places as a means to “keep in touch with reality” promoting close personal ties outside the home and workplace. These sites have a key role in community life by providing a democratic environment and available to discuss topics such as politics, sport and events in the region. The neutrality of these spaces allows people to express themselves spontaneously, thereby strengthening the sense of belonging and sense of community. However, these places are disappearing, partly because of unplanned urbanization process and the modern lifestyle, leading people to have fewer opportunities to attend such spaces. This lack of third places can affect quality of life of individuals in a community. Therefore, thirdplaceness is the “event” where and when the characteristics of a third place are reached, creating the feeling of being in a third place. Furthermore, providing opportunities for socialization of a third place and confronting the isolation stigma of using technologies in public spaces.

Based on the third places characteristics defined by Oldenburg (1999) and in our observations, we believe that to achieve thirdplaceness people need to feel free to be and express themselves. Promoting tools for self-expression can support to achieve this feeling. Moreover, providing anonymity can comfort audience, mainly shy people, giving them a chance to express themselves. People might have the same privileges and opportunities to participate in the activities, giving leveler awareness in such space. The experiences and interactions with and within the place can empower relationships among people and promote place attachment. ICTs can encourage activities among its users such as competitions, and provide information that can leverage discussions and conversations. Besides that, people had a chance to socialize taking the advantage of the Honey-pot effect. The place needs to be easy to access and allows appropriation of use to provide the feeling of fulfilled needs in the occupants. ICT installations need to ease to use and accessible providing information and, eventually, even Wi-Fi signal. Encouraging self-expression can often promote the relative feelings of warmth, possession, and belonging for people and they can feel that a piece of themselves is rooted in that space.

We demonstrate the relevance of supporting self-expression in public spaces through interactive installations. These installations create an environment to people express their thoughts, feelings, aspirations, emotions, and identity. During the deployments, people shared the environment to discuss various topics and enjoying each other’s company. The installations gave people a chance to socialize and provided information that leveraged conversations reinforcing their notion of community. Our study found that allowing self-expression offers the neutral ground

to people express freely their individuality. In addition, we showed the importance of allowing appropriation of use in self-expression. Overall, our research reinforces the crucial role that public displays and mobile devices can play in providing an affordable way for people to express their identity, promoting thirdplaceness.

As future work, we hope to revise the third places characteristics for the concept of thirdplaceness as Memarovic et al. (2014). Furthermore, we also hope to explore other technology interventions to support a sense of community in further different settings.

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