

Write vs. Type:

Tangible and digital media for situated engagement

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Abstract: Digital media is often criticised for being intangible, transient and ephemeral. These characteristics limit the provision of long-lasting social experiences, as it is through the use of all our senses that we attach meaning to space, creating a sense of place. This paper presents a comparative study of the affordances of two design interventions, one tangible paper-based, called *Print + Talk = Love* (PTL), the other digital screen-based, called *Discussions in Space* (DIS). The emphasis is on a) how tangible media, such as paper, provides different and meaningful collective experiences, and b) how it can stand on its own as an interactive design intervention and as a comprehensive data-gathering tool in urban public places. By positioning PTL and DIS within the context of urban public places and testing their abilities to engage participants, we examine their particular situated engagement abilities through a mixed method approach. As a result, the digital aspects of DIS, e.g., using Twitter, extend the situated experience beyond the actual location of the intervention. Moreover, informing a hybrid approach, we also found that the physical aspects of PTL and its tangible presence, kept the user experience focused on the actual place and event surrounding the intervention.

Key words: *Situated engagement, user interface, tangible media, urban informatics, interaction design.*

1. Introduction

Our social and cultural experiences are increasingly being influenced and mediated by an ever-expanding presence of ubiquitous digital products and social media, and a rising number of mobile devices [8]. Digital media has been criticised for being intangible and largely confined to Graphical User Interfaces (GUIs), when it could be employing sophisticated human physical skills for sensing or manipulating physical environments [12, 15]. By being confined to GUIs, Ishii [14] notes that interacting with GUI screens is inconsistent with how we interact with our physical environment. Hornecker and Buur [12] suggest that by including a tangible element to interactive artifacts, the social experience could be intensified and improved by building upon people's previous experience of interacting with the physical world. Further lowering the threshold for activity and supporting social interaction [12]. In the context of this paper, we explore and compare the affordances and possibilities offered by tangible media, specifically paper, in contrast to digital media.

Print + Talk = Love (PTL), a paper-based engagement tool, and *Discussions in Space* (DIS), a digital public participation tool for situated engagement [26], were deployed in conjunction with each other at two public events in Brisbane, Queensland in 2012. Both PTL and DIS invite citizens to provide feedback about location-specific topics, such as their suggestions about how to improve a particular neighborhood. PTL invites participants to pin

small pieces of paper to a cardboard surface. DIS allows users to send messages through SMS, Twitter and a web-based interface. PTL and DIS allow users to write and publish their feedback or opinion.

The comparative study discussed in this paper aims to identify the situated engagement potential offered by PTL in the context of a highly digitally mediated urban environment such as Brisbane and other similar cities. In this paper we focus on the content and thematic analysis of the data obtained from both tools. This data is used to compare and inform how an engagement tool designed for widely used tangible media, such as paper, through its own affordances can offer different possibilities as a way to support situated engagement in urban public places. This paper discusses the interactions created by the design interventions, PTL and DIS, and how they affect the notion of place. The purpose of this study is to investigate the affordances of physical media, such as paper, and through this, further our understanding for a possible hybrid approach to community involvement, which would include both digital and non-digital alternatives. The knowledge gained from this study contributes to our understanding of a future hybrid approach. In this paper we focus on PTL as a design intervention that specifically examines the question: how can tangible media support situated engagement? After reviewing related work, we provide an overview of PTL and DIS and present the methods employed in the study. The discussion includes an analysis of user-generated content.

2. Literature Review

2.1 Urban Space and Place

Our world today is constantly flowing [7] and evolving between the physical and digital spaces that we experience through our multiple senses. It is the use of these senses that assist in attaching meaning to space, therefore creating a sense of place [2, 6]. It is through the intention of creating memorable experiences for people within urban public spaces that PTL and DIS are designed as place-making interventions. By asking participants to reflect on relevant urban issues, single and collective members of the community have the opportunity to construct shared identity symbols [2]. Harrison and Dourish [10] recognise that people create notions of place within digital environments as well as in physical environments. These factors have influenced the creation of PTL and DIS.

PTL and DIS are methods of participatory action research (PAR) for place-making in urban environments [3, 11] which can also be considered as forms of Guerrilla Research Tactics [5]. The aim of PAR is to empower ordinary people and the public in and through the research by creating a socially owned process [16]. Therefore, the results of the research are directly informed by the people who are connected to the place of question and often involve the use of research methods using performative methods like diagramming, theatre or video [16]. Guerrilla research tactics are a combination of PAR and unobstrusive methods developed to acquire information in situations when attracting participants through traditional methods is challenging. Guerrilla research tactics rely on creative and fun approaches to engage with research participants while focusing on critical social and urban issues relying on local communities to take action in order for solutions to occur [5]. The design and deployment of our installations expose context specific questions related to place and encourages ordinary people to have their say about local issues.

2.2 Situated Engagement

Situated engagement refers to enhancing social interaction and collective participation within a particular locality [26]. Examples of engagement situated in urban public places include: taking advantages of civic engagement opportunities with public screens and mobile devices [25]; and empowering art practices using mobile devices [23]. These location-centric media channels have been widely recognised to contribute to engage citizens while they occupy local, civic space [26]. Due to the intrinsic qualities of urban public places, interfaces designed for it, should be intuitive and accessible without pre-requisites [17]. As such, the issue of access is crucial in these places, for instance within a context of community consultation processes or smart city learning. For the purposes of this research, PTL and DIS [26] addressed situated engagement within such context.

2.3 Tangible Media

Digital media and its largely GUI-based approach has been criticised by not offering possibilities to utilise and employ highly developed human physical skills [14, 15]. GUIs and the interactions they offer are usually not consistent with how we sense, manipulate and interact with our physical environment. To address this issue, Ishii [14] suggests that tangible components should be integrated. Examples of interfaces that have explored these issues in urban settings include mobile media hybrids, using mobile phones for painting on large projections [9, 24], or remote controlled cars for printing with spray paint text messages on the floor [1]. However, little is still known about how to design such interfaces, especially how to enable interaction in the context of the city [23]. The research discussed in this paper seeks to address these questions by comparing a paper- and a screen-based urban interface designed to promote interactions within local communities about local communities.

2.4 Paper in Prototyping

The field of Interaction Design has been exploring paper prototyping as a means to further understand experience factors, usability issues, aesthetic components and design specification among others, and the method is acknowledged as a tool that provides strong insights pertaining to the design process [4, 20-22]. Within this context, the design interventions discussed in this paper respond to Matthews et al. [19] by purposefully being site specific in the nature of the questions asked and the location and placement of the interventions. In addition, one of the many implications of the qualities of paper prototyping is that they are considered as transitional, limited in scope, and as such, usually regarded as rudimentary, often falling well short of fully operational prototypes [22].

Current research has shown that when compared to everyday digital devices, paper's affordances could be unique in per se. Takano et al. [28] explore how current digital technologies (i.e. laptop PC and iPad) compare to paper, and state that they might not be the best media to use when discussion and exchange of knowledge need to take place. Analysing the role of paper in an interactive environment and how people handle it, can offer clues into what could be explored with paper-based interfaces and their alternative uses [28]. By identifying when paper prototyping is better suited for communicating with others, its use can go beyond the temporary and ephemeral through the possibility of using it as the final product for use in human-computer interaction designs.

Paper has physical and tangible qualities that affect the ways in which people perceive and interact with it. Such formal and tangible qualities are; being tactile, having a smell, and producing sound when touched, all of which attracting the human senses and producing an affectionate connection to paper. Due to these physical qualities of paper it is flexible in its use where it can be physically moved, used creatively, folded, filed, and manipulated. The design of PTL continues to explore the opportunities and possibilities for the use of paper as an

affective interface in an urban setting. The results of the research discussed in this paper continue to investigate how people perceive the value of paper.

4 Methodology

Based on the work of Lentini and Decortis [18], this study makes use of a mixed method approach, which includes participant observation, content analysis, and thematic identification. The main focus of this study was to empower users through responsibility and value, eliciting face-to-face interactions and favouring rich collective experiences between users [18].

4.1 Tangible Design Intervention: Print + Talk = Love



Figure 1: An image of Print + Talk = Love at the Changing Lanes event May 2012

PTL (Figure 1) is a situated paper-based design intervention composed of a large piece of corrugated cardboard and pieces of paper with printed questions. Several coloured pens are clipped onto the cardboard attached by strings. A series of small pieces of paper are pinned all over the board right from the beginning. Each paper has a question addressing particular issues related to each event and blank space providing participants with room to write their answer to the question. The simplicity, ease of use, and rapid assembly are key design factors allowing the opportunity to both the researchers and participants to engage with it in multiple ways. Due to the tangible qualities of paper discussed earlier, participants are able to personalise the papers by using different colours or types of writing to emphasise their comments. Due to the tangible qualities of paper discussed earlier, participants are able to personalise the papers by using different colours or types of writing to emphasise their comments. Participants are able to take the papers off the board or change their location. They can tear or manipulate the paper however they like. For the researchers the design of PTL is flexible in its ability to adapt to the place of implementation through changing its location because it is independent of electricity. Through observation the researchers can adapt the board to engage with co-located people. These factors are critical to the design, as one of the requirements for situated engagement is to provide a low entry barrier with nearly no pre-requisites. Deployment considerations include defining a suitable installation space, visibility, content, and how the pieces of paper are made available to those interacting with PTL. Once deployed, the board is positioned and fixed so that it is self-supporting and self-contained. As a result, the research team can make unobtrusive observations from afar.

4.2 Digital Design Intervention: Discussions in Space



Figure 2: An image of Discussions in Space at the Changing Lanes event May 2012

Discussions in Space (DIS) (Figure 2) is a situated interactive screen application for urban public places aiming to engage with local citizens about local civic issues [25, 26]. The screen presents a topic and a set of questions. Users are invited to directly provide their comments and feedback while being in front of the screen by either SMS texting or tweeting. An optional real-time moderation backend ensures that messages are appropriate before appearing on the public screen. Incoming messages appear in a dynamic and animated way, changing and shifting to grab attention and encourage engagement from the public audience. DIS is a highly successful¹ application that has been deployed in a number of public venues and events including Federation Square in Melbourne, the State Library of Queensland in Brisbane, and as a public participation tool within a real-world urban planning project.

There are many external parameters that influence the uptake and success of such public screen applications including location parameters such as the nature of the installation space, but also the positioning of the screen, its size, etc.; people parameters such as the demographic, age, technology affinity; and content parameters such as whether it is specific or general, fun or serious, or contextualized to the environment or not [26]. However, if the sweet spot is hit within those parameters, the application has demonstrated to engage with young citizens that would otherwise not have their say [25] and collect useful urban planning related data that is different to data collected through more common public participation tools [27].

4.3 Context

New mechanisms are needed to offer additional benefits for civic participation beyond the standard tools proposed by Hornecker and Buur [13], in particular to give voice to those who otherwise would not necessarily be heard within local communities [26]. In order to explore these new mechanisms, we examine the contribution of PTL and DIS as urban interfaces that promote community interaction and engagement. Both were deployed at the same time during two public events in Brisbane, Queensland: Changing Lanes and Grey St. Exchange 2.0.

4.3.1 Case Study 1: Changing Lanes

Changing Lanes was a laneway party held on 25 May 2012. This public event was organised by a local design community, and supported by a local university. The target audience was predominantly university students among the local community. The purpose of the event was to stimulate and activate a local laneway through the involvement of experts in design disciplines. The event also featured a range of student built street furniture

¹ In 2012 DIS won the Queensland iAward Merit and National iAward Merit in the Research and Development Category.

installations, student design work on exhibition, digital projections, a DJ, food and beverage stalls. Approximately 500 people attended the event.

PTL was positioned between one of the food stalls and the main stage, in an illuminated section of the laneway. By being located in between highly active areas of the laneway, attendants encounter PTL regularly. During this event, the PTL board was accessible to the public from 6pm to 12am.

In parallel to PTL, DIS was displayed on a big, white wall using a data projector. It was a typical ‘event screen’ installation, where the screen is not permanent but part of a temporary event [26]. The screen was located nearly at the end of the laneway, next to the main stage and food stalls. It was highly visible and was facing the crowd. The moderation tool was not active during this event, so all messages appeared on the screen unfiltered. Both PTL and DIS ran the same question, asking to complete the following sentence: *Brisbane Laneways need more...?*

3.2 Case Study 2: Grey St Xchange 2.0

The Grey St. Exchange 2.0 exhibition was co-hosted by a local university along with South Bank Corporation on 2 November 2012. The purpose of the exhibition was to showcase student design work to the local community. At the opening night of the exhibition, there was live music and approximately 100 people in attendance. The exhibition was open to the general public over the weekend and attendees ranged widely in background and age.

The PTL board was set up and accessible to the public from 5pm Friday 2 November to 4pm Sunday 4 November. PTL was located to the left of the entrance of the shop where the event took place, facing the street. The comments and written notes were left on the board throughout the entire exposure of the board. DIS was installed via a small 40 inch LED TV mounted on a wheeled cart, slightly above eye-sight. During the opening evening, the TV was positioned outdoors to the right of the entrance of the shop facing the street. The screen was bright and highly visible. During the remaining four days and nights, DIS was located indoors behind a glass window facing the street, therefore less bright and visible during the day.

PTL and DIS asked the following question: *What is your Great Idea for Grey Street?* The purpose of having the same question on both PTL and DIS was to enable the research team to compare the results between the digital responses received via DIS and the handwritten responses on PTL. Both questions were intentionally formulated to address and engage participants with issues relating to the specific places of the installations.

Observations: Throughout the time of the installation at both locations, Changing Lanes and Grey St. Exchange 2.0, the research team unobtrusively observed participants and photographed the design interventions.

Interviews: Initially the research team expected to interview PTL participants after having written on a piece of paper. This however was a difficult task as it became clear that participants did not want to speak with the research team. Participants did not answer the email call for interviews. Alternatively the research team distributed an anonymous online survey to potential participants of the PTL installation.

Surveys: As PTL is a new design intervention, a survey targeting its users took place. It included seven questions of which one set was about general information about occupation, age, location where interaction took place, and another one about how participants understood PTL as an interactive installation, the differences between texting and writing on paper, and content. Unidentified participants answered 5 surveys. This survey did not include questions about DIS because there is existing data regarding its deployment in other locations, see [25, 26].

5. Analysis

The analysis of acquired data borrowed grounded theory techniques where information was categorised into commonly occurring themes.

5.1 Observations

As with DIS [26], it was observed that location and positioning of the installation affects the interaction of participants. High visibility is critical to the success of the installations. During both of the case study events, Changing Lanes and Grey St. Exchange 2.0, people showed interest in PTL by stopping to have a look at the papers. Mostly, people would only read what others had posted rather than post themselves.

Some people seemed reluctant to approach PTL and write on it, and some asked for permission to write. This indicates that it was not clear what was expected of people to do with PTL. For subsequent iterations it is critical to make it clear that people are encouraged and expected to write something on PTL. If there were more than one or two people standing at the board other people would not approach it. Participants were not interested in being interviewed, they simply wanted to engage with the board and move on.

In regards to DIS, in Changing Lanes the projection was highly visible, and received a large number of messages. In Grey St. Exchange 2.0 DIS was deployed on a TV screen, behind a window. People did not seem to acknowledge the screen, and ignored its content throughout the whole event. Schroeter et al. [26] refer to the ideal situation where the system not only collects a relevant number of messages, but also good quality messages, or messages within topic, as the sweet spot.

5.2 Survey Results

The survey shows that most participants were able to identify different benefits that could be obtained from PTL in comparison to DIS, including generating interest and user engagement in connection to the place where each installation was deployed. In relation to how participants perceived PTL, respondents indicate that it presented opportunities for exploring different aspects of participation in the redefinition of urban public places and reflecting about location, as shown in the following comment: “[PTL] Asks you to reflect on the space, it makes you really take conscious of the surroundings...” – P2.

Furthermore, by providing immediate access to all previous comments from other participants, it is acknowledged that feedback under these circumstances was fluid and effective. Users enjoyed reading what other people had to write. The notes from other people seemed to have affected the tone or content of users who wrote on the board. “I read them and they were a good prompt as to the topics I should be writing about,” – P2. “I was one of the first that wrote on it but I definitely looked at the couple of other answers that were on there.” – P3.

Participants reflected on the experience of writing on a piece of paper versus texting or tweeting. In comparison, both texting and writing are considered to have social implications, or individual implications. “Texting has this implication of social construct... it’s something you do for social reasons and social engagement... typing is something a lot more formal” – P1.

The tangible aspect of PTL is considered as a significant feature, not only by providing a means of detaching comments from one’s own identity, but also by providing a sense of intimacy and familiarity. “(writing is) more intimate and (I) feel like a ‘real’ person will read what I write,” – P4. “(writing) seems to have more meaning than sending a tweet to a digital screen,” – P2.

The following comment depicts how participants understand and assess issues of privacy and engagement with others. “...I’m hesitant to interact with unfamiliar sources using social media (Twitter or Facebook) due to

privacy and security concerns... (Paper) can no longer be traced back to me, and I think that allows people to leave more meaningful and truthful interactions.” – P2.

The notion of a statement remaining in time is also mentioned, showing how participants think about the temporality or permanence of their messages in relation to tangible or digital media. *“...[typing] can exist virtually and forever if you want it to...a piece of paper lasts for as long as its maintained...[because of] its formal and a physical stature...” – P1.*

In some instances it is noted that due to its uncommon appearance, PTL is perceived as a peculiar intervention. The atypical format of PTL, and consequently how it was perceived was twofold. The advantages offered by it prevail over its disadvantages, but it is also worth mentioning that a number of access barriers are described. The most significant factor and barriers are; the location of the intervention, hesitancy of writing on it, a lack of something to say and not fully understanding the purpose of it, which is consistent with DIS previous findings [25]. *“I felt, a little underwhelmed and a little unsure exactly of what was going on and what is was for,” – P5.* *“The general location, design, aesthetics of the PTL (along with the rain on the night) made it feel not so engaging.” – P5.*

5.3 Discourse Analysis

PTL collected a total of 85 handwritten pieces of paper during Changing Lanes, and 78 during Grey St. Exchange 2.0. DIS on the other hand collected 164 messages during Changing Lanes, most of them through Twitter and SMS, and only 5 during Grey St. Exchange 2.0 through SMS texts. All of the written notes collected at Changing Lanes and Grey St. Exchange 2.0 from PTL and the texted or tweeted comments from DIS were transcribed and thematically coded in the same manner. The first obstacle was to filter the comments by classifying them as either spam or thoughtful comments. Spam comments were considered to be either offensive or inappropriate.

In PTL the number of occurrences of spam messages was considerably lower than in DIS. During the Changing Lanes event, PTL collected a total of 85 handwritten pieces of paper with 37 of them considered spam (43.5%). At the same event, DIS collected a total of 164 messages with 118 of them being spam (72%). Both PTL and DIS had similar numbers of thoughtful messages with 48 in PTL, and 46 in DIS. However, these numbers dramatically changed during the Grey St. Exchange 2.0 deployment. 20 out of 78 paper pieces (26%) had spam messages in PTL, and 4 out of 5 (80%) messages were spam in DIS. Focusing only on the thoughtful comments left by participants, the thematic coding placed comments into categories based on similar topics. The following describes the main topics for each design intervention at each location.

Case Study 1 Results: PTL at Changing Lanes

The question that was proposed to the public through both PTL and DIS during the Changing Lanes event was: *Brisbane Laneways need more...?* The most frequent topic that was written about by participants was categorised as Urban Conditions. This topic includes the role of urban design in addressing local interests and the vibrant aspects of local urban features, e.g.: *“We need more indoor/outdoor spaces not replicated laneways,” “Lighting.”*

The second most frequent topic was Entertainment, which includes expression channels, cultural outlets, and sports, e.g.: *“Personality, outlets 4 input like this, street art,” “Art & cafes, music,” “Interactive artwork and cute cafés,” “Laneway Parties!” “Ragtime and swing (dance),” “Interpretive dance and flashmobs,” “Energy,” and “Sports!”* Food and drink was the third most common topic. Participants mentioned cafés, temporary street food carts and other food-specific preferences, e.g.: *“Soup carts!” “Cozy cafés,” “Pop-up bars,” and “Ice-cream.”* Other comments cover such things as local government related issues and retail.

Case Study 1 Results: DIS at Changing Lanes

The majority of the comments that were received by SMS or tweets through DIS is related to the actual event and did not necessarily answer the question that was being asked. Most messages received are related to the excitement of the night. It can be inferred from the examples below that the event was energetic and lively, and that most people who submitted a message to DIS were enthusiastic about the event: *“Awesome stuff at #brislanes,” “#brislanes this is cool!” and “#brislanes congrats new market well done.”*

Urban conditions had the next highest amount of comments. 50% of the messages related to the rainy weather conditions of the day, and the others related to the design of the urban environment including shelter or traffic restrictions amongst others. Food and Drink was also a frequent topic.

Case Study 2 Results: PTL at Grey St. Xchange 2.0

During Grey St. Exchange 2.0, PTL and DIS displayed the following question to the public: *What is your Great Idea for Grey Street?* The purpose was to obtain information from local stakeholders as to what they considered to be great ideas for Grey St. There were 58 thoughtful written comments. The most frequent category was entertainment, with 19 comments. Within it, art and culture were prevalent: *“More concerts, free.”* Also within that category, there were many comments that mentioned a range of activities including city-specific, season-specific sports, and others: *“Parkour Park,” “Skateboarding area,” “Ice-rink, street entertainment.”*

The second most frequent topic was focused on facilities. Free parking appears to be a big issue at a place such as South Bank, which is often busy on weekends. The third most common topic was urban conditions: *“Improved lighting,” “More child friendly furniture and areas.”*

Food and drink and shop hours together gathered a good number of comments, and this is probably related to South Bank’s well-known nightlife: *“Dinner after 10pm please,” “Shops open at night.”* Six participants commented on gardens and parks. Most of the comments respond to the needs of families and young children reflecting the type of people who live or spend time in South Bank: *“A playground!”*

Case Study 2 Results: DIS at Grey St. Xchange 2.0

DIS only received 5 comments in total throughout the Grey St. Exchange 2.0 event. Comments regarding the opening hours of restaurants and shops was most frequent: *“24/7 shops!”* Similar to PTL there was a comment regarding free parking, and one comment about the urban conditions of South Bank.

6. Discussion

The written comments left on the installation by participants supplement our understanding of the effectiveness of the installation in creating a memorable experience for participants. When examining the content of the comments left by participants in both PTL and DIS it is critical to reflect on the nature of the questions that were asked during each iteration of the installations. Both of the questions asked passers-by to directly respond to the urban environment in which the installations were placed, explaining why the category of urban conditions occurred across both installations at both events.

Common to PTL at both events was the category of entertainment including arts, culture, and activities, which did not arise in DIS. However, it is expected that the entertainment category would be commented on in both installations due to the nature of the events. Both events included a DJ or live music, and had similar demographics of people such as university students in addition to the local public. Perhaps this unexpected finding

correlates to how people perceive a difference within the act of writing on paper versus typing a text or a tweet. In one of the quotes from the survey the participant makes a remark about how writing on paper embeds a higher interactive complexity: *“It [writing] is more interactive,” – P3.*

Due to the fact that the category of entertainment was only common to PTL we can begin to distinguish the quality of comments left by participants between PTL and DIS. Because PTL is a physical installation with a tangible presence people perceive it differently than DIS in a way that is more intimate, and provides room for reflection. When examining the survey responses regarding the tangible experience of writing versus typing, it becomes clear that people had mixed understandings of the anonymity and temporal or permanent factors of writing on paper. One respondent believed that writing on paper was more anonymous than typing and this affected the type and quality of answer that participants would leave behind, as can be seen in the following quote: *“Once I’ve pinned the piece of paper to that board it can no longer be traced back to me, and I think that allows people to leave more meaningful and truthful interactions,” – P2.* The meaning of permanence and how people interact with paper versus digital media affects how they interact with PTL and DIS.

When comparing comments left on PTL and DIS it is clear that DIS received a lot more spam than PTL. Even though anonymity in PTL is readily available, it seems that self-regulation is exercised to a greater extent, which could explain the lower ratio of spam messages. The possibility to freely engage and write in public spaces is rarely offered, and the disruptive approach could be conflictive. However, the results show that it is well received.

Another difference between the types of comments and the ways in which participants used PTL and DIS during Changing Lanes is found when examining the main category of event related for DIS. PTL is only available to co-located users and participants. Because DIS receives comments from Twitter, it has the ability to communicate with others beyond the physical location of the installation. It is apparent that DIS users at Changing Lanes were attempting to communicate to a larger public, and engage them in Changing Lanes activities, or at least acknowledge them: *“Changing Lanes at Fortitude Valley is now open! #brislanes is happening.”* Some comments include links to photographs where users show aspects of the event to others on their digital networks.

7. Conclusions

As a result of an increased number of readily available digital products and media in recent times, more and more digital interfaces mediate how we interact with each other [8] and the urban public spaces we inhabit. A large body of research has inquired how digital interventions can extend and engage people in urban contexts, but has overlooked the potential of exploring well-known techniques that could stand on their own. We have examined and compared a physical and tangible intervention versus a well-tested digital one. The results indicate that both types of installations can be affective means of engaging with public communities. The purely physical installation has its benefits and drawbacks, as does the purely digital.

From this study we can conclude that PTL was successful in two areas. First, PTL was successful in creating situated engagement, which is attributed to its tangible qualities and abilities for participation, adaptation, and appropriation [10] therefore creating place. Second, PTL proved to be a valuable tool for acquiring data on urban issues from local participants and can be considered as a meaningful participatory design method in urban design ,planning and possibly other disciplines related to urban public spaces.

Both deployments were highly successful in regards to data gathering, however, data gathering after the events was difficult. A call for interviews was sent out to local networks of people that attended both events, but was unsuccessful in gathering any interest. A further questionnaire was sent out, and even though was answered by only five people it provided the team with enough material to work with. In further deployments, the research team would like to interview participants in-situ, as the results show that participants are interested in maintaining their anonymity. Furthermore, by elaborating on Schroeter et al.'s [26] sweet spot and re-purposing it, further deployments of PTL could be fine-tuned.

The merit of this study is to emphasise the affectiveness and the affordances of tangible and physical installations when attempting to create situated user interfaces for urban public places. In this context the following question arises, how can these differences be mediated and integrated to create a hybrid approach addressing the merits of both the physical and the digital? We argue that the future of situated engagement can no longer be purely digital or purely physical, there is a need for elements of both to be integrated to maximise the effectiveness of future tools. The features of these future interventions should include a low entry barrier by integrating a familiar data input across a range of users, ways to effectively protect the identity of the participants, offer the possibility to access other participants' messages, provide means to reach out to people and communities beyond co-located users, but at the same be intimate enough to keep co-location relevant.

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