

Experiences from a Real-Time Mobile Collaborative Writing System in an Art Gallery

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Abstract. We present first experiences from Local Area Artworks, a system enabling collaborative art interpretation on-site, deployed during an exhibition in a local art gallery. Through the system, we explore ways to re-connect people to local places by making use of their personal mobile devices as interfaces to the shared physical space. With a collocated collaborative writing system in the semi-public space of a gallery, we encourage local art discussions and provide a platform for the public to actively participate in interpretations of individual artworks. In this paper, we focus on the experiences of small groups of strangers or acquaintances experiencing the exhibition together.

Introduction

Wikipedia has long been the role model for the feasibility of enabling constructive participation in collaborative deliberation online (Bryant, Forte & Bruckman, 2005). But what happens if similar technologies for participation are brought into the physical local environment in order to foster local communities where they meet? With Local Area Artworks, we explore such an approach, where participation is closely tied to a particular locality in the community. We have deployed Local Area Artworks, an on-site collaborative art interpretation system, in an art gallery in Denmark.

Visits to museums and galleries are inherently social (Falk & Dierking, 1992). Many people go there not primarily to take in the art, but to socialize with those

that they go with – friends, family, etc. With an increasing trend to involve gallery visitors more actively in exhibitions (cf. Macdonald, 2007; e.g., Heath, vom Lehn & Osborne, 2005; Ferris et al., 2004), our goal is to deeply intertwine Wikipedia-style participation with the physical world by facilitating collocated collaboration about specific localities situated in these localities. For this purpose, shared surfaces in the form of situated displays are installed in the gallery as local physical representations. They are combined with visitors’ personal mobile devices, a medium rather familiar to them, to access the system through this private remote control (see Figure 1).

In Local Area Artworks, we facilitate collaboration and exchange on two levels: one direct, same time, and face-to-face with those collocated in the physical space (acquaintances or strangers) and another one over time, throughout the course of the exhibition with other visitors mediated through jointly produced text. In this paper, we discuss our initial findings regarding how the social dimensions of *joint visits* to the art exhibition were augmented or disturbed by the introduction of our experimental system – as a post-hoc analysis rather than an original design intent.



Figure 1. Visitors interacting with the system through their personal devices to write comments.

System Overview

Local Area Artworks was deployed during an art exhibition that ran throughout May 2013. The installation comprised of six digital interpretation panels as one is shown in Figure 2, next to six individual artworks. The panels are thought to replace curatorial text on traditional description panels with a shared space for collaborative interpretation (unstructured, free form text). Visitors connect their own smartphone (or a borrowed device) to a dedicated open wireless network that, beyond the system, provides no internet connection. The shared surface of the panels mediates collocated same-time and different-time collaboration.

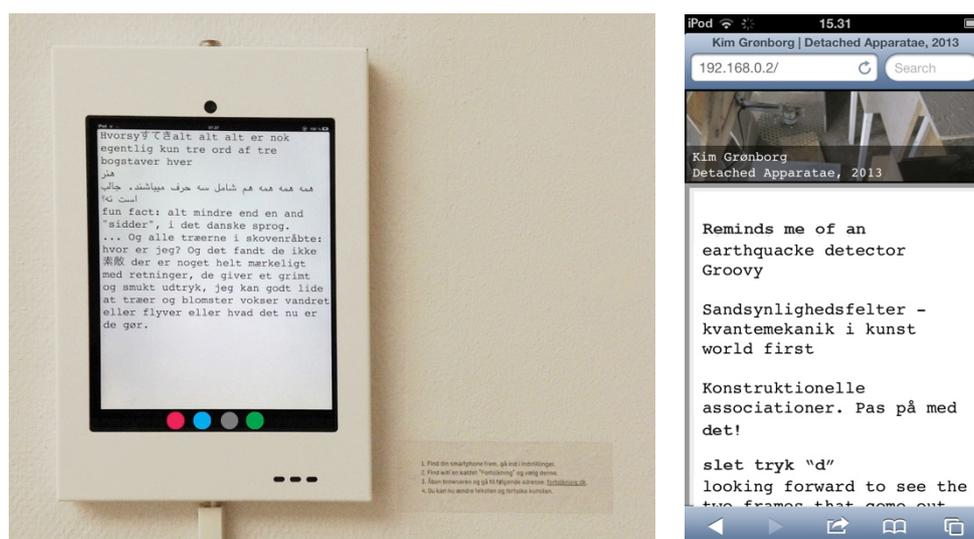


Figure 2. Left: A digital interpretation panel with instructions on how to connect next to it. Right: A smartphone connected to a panel with the text that visitors can edit.

When visitors open a browser on their phone, they will automatically be redirected to our web-based system. Making use of WiFi proximity detection (Polli, Korn, & Klokmose, 2013), if they move into proximity of a panel (within 2 to 3 meters), the browser will be redirected to an editable version of the text. To provide a better experience of collocated use, the text is live updated on the panel and other connected devices as soon as someone starts writing something. Moving to another artwork automatically redirects to the respective editable text. Moving out of reach of any panel, visitors will be presented with an overview map of the art gallery indicating where the panels are located.

In order to facilitate a form of group awareness when collocated visitors look at and write on a joint text at the same time, each panel provides an abstract representation (see Figure 2) of how many devices connected to the network are in proximity (grey dots; potential current users) and how many people are actively editing (colored dots; actual current users). Newly written text will appear in these respective colors to create awareness of the live updating and especially the same-time editing of several people writing together. These colors of the different authors vanish after a predefined amount of time (5 minutes) in order to suggest the emergence of one coherent and jointly written piece of text over time.

A further measure to facilitate the emergence of a joint text is that the amount of text people can write on a panel is limited to what fits on the display in a specific font size (no scrolling). After a while the display will be full, hence provoking people to delete or edit what has previously been written. Visitors can only participate actively by being there, by being in close physical proximity of an artwork. For further implementation details of the system see Polli, Korn, & Klokmose (2013).

Method and Participants

The project was deployed at the art gallery for over one month, the period of an exhibition. We have conducted 19 semi-structured on-site interviews with visitors, both those who engaged with our system and those who were there with them. We conducted observations on four days with two hours each, and applied space syntax analysis (Steen, Blombergsson, & Wiklander, 2005). We set up formal panel discussions as well as more informal discussion meetings with artists, curators and staff from the gallery. At the exit, we put out questionnaires asking visitors to fill them out, which amounted to 25 responses. Lastly, we logged a plethora of different user activities in the system and recorded the full history of the text being written. A variety of people took part in the studies, such as families, couples, and individuals, among those were regular visitors and artists. The interviewee's age was broad and ranged from around 15 to 55.

Initial Findings

Gallery and museum visits are an inherently social activity. Socializing with the person(s) you go there has been found to be the primary reason for people to visit such institutions (Falk & Dierking, 1992). Hence, introducing an interactive system that might take time away from face-to-face interaction creates tensions.

Some people questioned the need and purpose of the system: "You will have the discussion between the people you are there with, not with the machine," said one of the participating artists. The system might break social relationships of people going together: why write something, when I already discuss it with my partner? On the other side, it also inspired (even forced) the verbalization of interpretations (or at least reflections) among acquaintances co-experiencing the augmented exhibition – both within and beyond the system – which would not take place otherwise. It has shown to entice conversations and discussions among gallery visitors. Hence, the system at times rather functioned as a conversation starter than a collaborative writing tool. The question becomes how can it also transfer and convey these discussions to other, non-concurrent visitors?

Forms of Collocated Collaborative Interaction

A number of distinct forms of collocated collaborative interaction with the system emerged. When couples, friends or families were gathering together around a digital screen, they were rarely using more than one mobile phone at a time. Only one person connected with his/her phone and largely remained in control over the interaction. They were only rarely passed on from one person to another. People in small groups either discussed before they wrote a comment or the one in

control started writing and the others provided comments verbally. The most serious discussions emerged when people deliberated about what to delete in order to write something when the panel is full:

“When the screens were full of text and we needed space to write our comments, we had to delete something... we had long discussions on what previous comments were the best choice or which ones are not so important so we could delete them.”

People were rather hesitant to delete text written by others, because they did not think they would come up with anything better or more thoughtful than what was already there.

Interestingly, instead of watching the output of what people were writing on the live-updating panels, companions were rather peeking over the shoulder of the one writing to follow the activity on the personal device. In this respect, the panels rarely enticed or even facilitated face-to-face interaction. They rarely bridged the isolating barrier of the personal mobile phone. This may be due to the novelty of the real-time live update functionality, but also, more profoundly we hypothesize, because of people paying attention to where the action is, i.e., where people are actually acting to control the system. Hence, while the combination of personal devices and shared surfaces is beneficial for engaging people into participatory projects (due to people’s familiarity with the medium), it is a challenging combination for the purpose of facilitating face-to-face interaction. The shared screen is not enough to alleviate the barrier of the personal device.

Pacing Through the Exhibition Space

The system imposes its own pace on visitors in a number of ways. It greatly changes the experience of the gallery visit for everyone taking note of it. It ‘slows down’ those that want to write and engage with it more deeply. It may even subconsciously lead visitors through the exhibition space, changing which artworks they perceive and how they perceive them. The presence of the system has also shown to separate groups of acquaintances due to the different people’s varying levels of engagement with it.

While people reading the text on the panels already spend more time at individual artworks, people actually writing comments are slowed down in their movement through the exhibition space more severely. This leads them to become separated from their group, e.g., in the case of a family: The father deeply engaged with the system, first taking time to figure out how to connect with his mobile phone and then seeking to write something on several panels. Other members of the family being only interested in reading some of the texts followed a different pace and moved on in the exhibition. When he was asked to compare his experiences with the augmented panels to a traditional exhibition, he stated:

“It is interesting to use new technology like that, but when you are in a group, and you are the only one that uses it, suddenly you are alone and you are not together with the rest of the

people anymore, so you go apart from them, and this is ok when the art gallery is small like this because then you pump into the group again.”

In a larger institution, he said, falling so far behind would make him uncomfortable, the chance of losing sight of his family in a bigger building.

However, people often easily accommodate for such social, co-experiential situations: On another family’s way through the exhibition to a special kids event, the father approached one of the panels, started reading and made a step towards engaging with it with his mobile phone. His family and friends continued walking and when they went to another room, out of his field of view, he stopped the interaction and continued walking with his family. When his children were entertained at the event, he came back to the panel and continued where he left off by writing his thoughts up on the screen.

Conclusion

In this paper, we discuss our initial findings with respect to the social dimensions of collocated visitors engaging with our experimental system for collaborative interpretations in an art gallery. We identified tensions in the use of the system where it generally enticed conversations about interpretations on the one side, but also hindered face-to-face interaction when people were immersed in their phones to write something. The presence of the system also sometimes separated groups who engaged with it to varying degrees and hence each followed a different pace. In the future, we want to better understand which mechanisms and features support or hinder face-to-face interaction in galleries or other collocated settings.

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