The Co-realisation of a Village Photo Display

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ABSTRACT

We describe the techniques used to evaluate the potential of situated photo displays in supporting notions of community in a rural village. Through a combination of ethnography, technology probe deployments and a design workshop, we have deployed and evaluated a successful prototype display.

Author Keywords

Situated display, participatory design, technology probe.

ACM Classification Keywords

H5.m. Information interfaces and presentation (e.g., HCI): Miscellaneous.

INTRODUCTION

The goal of our work is to explore the potential role for situated display-based technologies in supporting notions of community [7] in Wray, a rural village in North West England. The village community has a population of approximately five hundred people and contains a number of public social spaces, including a village hall, post-office and local pubs (public houses), and runs various annual events, including a Scarecrow Festival, village fair and a produce show. As part of another university project investigating resilient networking, a wireless mesh network has been installed across the village.

Our major challenges have been the problems inherent when studying an intangible concept such as community and how to evaluate whether a design has succeeded in supporting or improving notions of community. This intangibility also has implications for communicating to the end users what we were trying to achieve. We must also consider the experience of our users and be careful to avoid issues such as social embarrassment [1].

Our approach to this study has employed a number of methods to drive the design of a technology to support the community, which we describe in this paper: *rapid ethnography* of the setting; *technology probe* deployment; and a *design workshop* with members of the community.

An overview of the early work on the design and deployment of the Wray Photo Display can be found in [8] and a discussion of the early ethnography work can be found in [2]. In this paper we summarise the early work on the Wray Photo Display system and our research methodology and describe a recent design workshop which we held with members of the community to gain insights into interaction difficulties and obtain new design ideas, ultimately leading to the co-realisation [5] of the display.

RAPID ETHNOGRAPHY OF THE SETTING

We began by conducting a small number of site visits to the village in order to familiarise ourselves with the deployment domain, involving taking pictures of locations which seemed to have relevance to notions of community and publicly displayed information.

Following this, we developed a cultural probe pack [4], shown in Figure 1, to hand out at the Computer Club, aimed at identifying the ways information was displayed in the village and the social spaces critical to the community. Two of the authors (one a computer scientist, the other a social scientist) attended a meeting in April 2006 to distribute the packs. At the end of the meeting the authors were asked to help move a large scarecrow across the village—this certainly felt like an initiation and an important step in reciprocating the help that the community were offering. Finally, one of the authors attended the annual Scarecrow Festival in May 2006 and observed first hand the strong community nature of the event.

Figure 1. Probe packs highlighted areas of social importance in the village.

Figure 2. The Photo Display deployed in Wray's post office.

TECHNOLOGY PROBE

Following this investigation, we used the well-established technology probe method [6] which prescribes the deployment of a simple 'seed technology', with the goals of exploring the environment, field testing the technology and, most importantly for co-realisation, generating new ideas by demonstrating potential uses of technology.

In late May 2006, we discussed with residents the possibility of deploying a simple photo gallery display. For some members of the community it was clear how this could support notions of community, but others needed slightly more convincing; we highlighted the black and white pictures of the village's past decorating the inside of the pub as an example of photos supporting community. Drawing upon this concrete example of use in the room where we were meeting appeared very effective.

We also found expectation management to be very important at this stage. It was necessary to make sure the users understood that our approach required a simple but reliable system and so could not include all the functionality they might desire. We knew that the display must be reliable to maintain the trust relationship that we were starting to build with the community. In particular, the experimental nature of the network in Wray required that prototypes be resilient to potential network problems.

From our own observations of the village and data from the probe packs, we identified the village hall as an ideal location for the first Photo Display deployment. This was a central social space in the village which already housed notice boards and photographs, as well as the Computer Club. The Photo Display was deployed there in August 2006, but due to plans to renovate part of the building, it was later moved to the village post office (Figure 2).

At the time of writing, the probe has been gathering data for 14 months, including usage data from automatic logs and a comments book. We have also gathered direct feedback from a number of events which authors attended to observe interaction and discuss the system with end users, including the produce fair shortly after deployment and annual Wray Fair in May 2007.

The technology probe quickly proved its potential for generating ideas from the community; a number of

suggestions arose which led to further modifications to the display. For example, it was suggested that when an image is touched, a larger version should be displayed. Further requests led to the expansion of the display website from a simple administration page to a public web application that allowed all users to upload images and manage categories.

Feedback in general was extremely positive and residents particularly praised the potential of the display. One email summed up the community's response particularly well: "*The digital noticeboard has many advantages for the village… There are quite a few new people in the village and this gives them an insight as to what Wray used to look like… The flood photos are one way the old and newer village can be seen. Also the photos of the previous villagers… are invaluable in the history of Wray. It also gives information of important events in the village… All in all it is a very good way of communication vital in small villages.*" Many of the comments invoked the notions of boundaries, relationships and change described in [7].

Despite the generally positive attitude towards the display, visitors at the Wray Fair deployment appeared reticent over approaching the display and needed encouraging to interact—with the exception of children, who would immediately run to touch the display, often to their parents' dismay! Regardless, we were able to discuss the display with a large number of users, meet community members who had contributed to the display and observe interaction problems to consider in future revisions of the application.

DESIGN WORKSHOP

The probe feedback was complemented by our design workshop in late May 2007. Members of the Computer Club were invited to an informal discussion about the display in order to obtain new design ideas and feedback on problems. We planned a structured session using scenarios to elicit ideas, but quickly found that the participants had their own plans—as they were keen to express their own views, we chose not to enforce our intended structure.

Much of the workshop was taken up by problems with the website user interface, which were voiced by several participants. Two new users walked through the registration, login and image upload procedures, allowing us to identify problematic areas (Figure 3). Both users were typical of many community members interested in the project: over 50, with home PCs and Internet connections, but limited IT experience. Generally speaking, problems arose due to an overestimation of our typical user's

Figure 3. Residents took part in a design workshop to evaluate the system.

experience with web applications—common features such as login forms and uploads caused confusion.

There was also a discussion regarding a frequently requested feature to allow users to browse the entire gallery online. We found that participants saw a very large distinction between viewing images on the display and via the web—in particular, that images viewed at home could be downloaded or printed, while images on the display could not easily be 'taken away'. There was particular concern regarding images of children, due to the potential for misuse of such images and legal issues.

We also visited the local primary school (4 to 11 year olds) to gain a fresh perspective on the display from a vastly different group of users. We found that most children were aware of the display, but less had used it. They suggested ideas such as buying and selling ("WrayBay"), "before and after" images of the village and emailing images.

We employed the BadIdeas technique [3], which asks participants to think of bad ideas and then uses a series of prompts to explore the domain. We have previously found this to be a useful way to elicit novel ideas; it helps people to think 'outside of the box' and reduces personal attachment towards their ideas. We had never previously tried this with young children, so largely omitted the analytic parts and simply asked for bad or silly ideas. Answers ranged from the physical (punching the display) to the inevitable scatological. One child gave "photo of a sheep" as a bad idea—on prompting she explained she meant a zoom-in image of a tiny patch of wool. When asked why, she explained it would be "boring". This displayed a sophisticated understanding of imaging, but also suggests puzzles where oddly cropped parts of images need to be identified or found in the photo collection.

CONCLUSIONS

We have found our approach of a technology probe coupled with participatory design workshops to be highly successful in generating longitudinal feedback from users, enabling the co-realisation of applications and allowing gradual evolution for the benefit of the community. Obviously technology alone is no easy way back to the 'paradise lost' of community, but this study reveals some of the myriad ways in which, through their interactions with technology, notions of community, communal history, membership, belonging and responsibility are continuously asserted and reinforced. So far, the Photo Display has proved promising as a means of supporting community.

One incident which occurred during the Scarecrow Festival is noteworthy; a scarecrow caused disapproval and was removed from the show, but a photo was unintentionally uploaded to the display and prompted a complaint. While at one level, this is about issues of moderation and acceptability, it is interesting that the display formed a seamless part of a minor drama of village life.

Participants in the study have been forthcoming with ideas for functionality and were quick to point out issues we needed to address. Comments and feedback show it is popular, further evidenced by the 600 photos uploaded. In fact, this has lead to a design problem, as there are too many images for the fixed number of categories and villagers have requested a more complex category system.

Based on our findings and generated feedback, we plan to continue developing the Photo Display, aiming to provide better functionality and improved user experience. In the early system the focus was on designing a system that elicited ideas, but as the active user group expands, traditional usability and interface design is likely to become more critical. However, while the design emphasis may shift, the ultimate aim will continue to be better support for the people of Wray and to learn more about the subtle interaction between technology and community in the process.

REFERENCES
1. Brignull, H. and Rogers, Y. Enticing people to interact with large public displays in public places. *Proc. Interact 2003*, IOS Press (2003), 17-24.

2. Cheverst, K., Conder, C., Graham, C. and Rouncefield, M. Scarecrow Ethnography. Ethnography Conference, University of Liverpool (2006).

3. Dix, A., Ormerod, T., Twidale, M., Sas, C., Gomes da Silva, P. and McKnight, L. Why bad ideas are a good idea. In *Proc. HCIEd.2006*, (2006).

4. Gaver, B., Dunne, T. and Pacenti, E. Design: Cultural probes. *interactions* 6, 1 (1999), 21-29.

5. Hartswood, M., Procter, R., Slack, R., Voß, A., Buscher, M., Rouncefield, M. and Rouchy, P. Co-realisation: towards a principled synthesis of ethnomethodology and participatory design. *Scandinavian Journal of Information Systems* 14, 2 (2002), 9-30.

6. Hutchinson, H., Mackay, W., Westerlund, B., Bederson, B. B., Druin, A., Plaisant, C., Beaudouin-Lafon, M., Conversy, S., Evans, H., Hansen, H., Roussel, N. and Eiderbäck, B. Technology probes: inspiring design for and with families. In *Proc. CHI 2003*, ACM Press (2003), 17-24.

7. Mynatt, E. D., O'Day, V. L., Adler, A. and Ito, M. Network Communities: Something Old, Something New, Something Borrowed…. *Computing Supported Cooperative Work* 7, 1-2 (1998), 123-156.

8. Taylor, N., Cheverst, K., Fitton, D., Race, N., Rouncefield, M. and Graham, C. Probing communities: Study of a village photo display. To appear in *Proc. OzCHI 2007*.