

# Affordances and Signifiers of Community Noticeboards

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**Abstract.** Digital community displays pose many socio-technical challenges which must be overcome if they are to make successful contributions to a community, yet paper-based noticeboards appear spontaneously as surfaces are appropriated for notices with little or no design effort. We speculate on how this appropriation of surfaces might be harnessed to design more successful digital noticeboards.

## 1 Introduction

The noticeboard is an indispensable and ubiquitous part of many communities, found in neighbourhoods, workplaces and other forms of social network. They can be used to advertise events, jobs, services or items for sale and allow lightweight advertising to members of the public, usually free of charge. Many of these displays are spontaneous and self-organising: any surface can become a noticeboard and any window a display case. As availability of suitable technology leads to a rise in public displays, the use of these displays as noticeboards has been a natural step, both in the workplace (e.g. Plasma Poster [1] and the Notification Collage [2]) and increasingly in public areas (e.g. eyeCanvas [3] and Campiello [4]).

Our experience with digital noticeboards derives from two real-world deployments. In Wray, a small rural community in North West England, we have deployed a public photo display in an effort to understand the ways in which public displays can support communities [5]. From the outset, feedback from residents has spoken of a desire for community information which might commonly be found on noticeboards, such as advertisements, timetables and newsletters. For this reason, we are particularly interested in the ways that existing public displays, especially noticeboards, are utilised within the community.

In Münster, Germany, the iDisplay system [6] has been installed in university hallways, providing much of the functionality desired in Wray. Notices can be posted using a web application, to appear besides information such as bus timetables and weather forecasts. Users can connect to the display using Bluetooth to download notices, request an email containing the information or send them to a friend using SMS.

One of our greatest challenges in deploying such digital displays has been achieving the kind of natural behaviour seen in non-digital displays, due to the complexity brought by technology. In this paper, we examine how we might take cues from existing noticeboards when designing our digital displays.

## 2 What Makes a Noticeboard?

Despite our observations that designing to support communities is a complex socio-technical problem, communities are nevertheless filled with community noticeboard displays, some of which are planned by local authorities and some of which have developed organically over time through the contributions of community members. In Wray, for example, the village post office is home to two noticeboards: an actual pinboard specifically installed for community notices and a second noticeboard which has appeared on the side of a branded drinks refrigerator (Fig. 1). Both feature a similar selection of local businesses, small job openings, services for hire and items for sale, but the second board seems to be somewhat more active and certainly more vibrant. What was it about this appliance that invited dozens of villagers to leave advertisements?



Fig. 1. Two post office noticeboards.

Donald A. Norman appropriated the term ‘affordances’ to refer to the tasks which a user *perceives* an object to be capable of [7] and more recently, this was expanded upon to include ‘signifiers’, suggesting “we know how to behave by watching the behaviour of others, or [...] the trails they leave behind” [8]. In many ways this is similar to Harrison and Dourish’s ‘spaces’ and ‘places’, in which interactions are governed by both the physical space in which they are situated and the cultural expectations associated with that particular place [9].

Certainly, the presence of a large, smooth surface in the post office invites notices to be posted using adhesive tape or tack, and the refrigerator is located where customers will queue to reach the counter at busy times, while the pinboard faces away from the majority of the shop. Although we had speculated

that it might even have been an intentional attempt to cover a large, unwelcome advertisement, the actual motivation was more prosaic: the shopkeeper had wanted somewhere noticeable to post upcoming events etc. while keeping long-term advertisements (largely business cards) on the pinboard.

In this case, action by an authority figure caused the surface to afford the qualities of a noticeboard, but this need not always be the case. For example, a whiteboard in our department kitchen had remained blank and unused for several years until one of the authors wrote a message (“Has this always been here?”) as an experiment, to see whether this would inspire further use of the board. Within an hour, a response had appeared, followed by a word association game and drawings. Although the board was wiped clean repeatedly by a member of staff, messages continue to appear, followed by a rack of pens and magnets and it eventually came to be used for official notices. After the first message, the board appeared to afford lightweight, playful messaging by provoking a response and signifying that leaving a message was ‘allowed’, much like the ‘honey pot’ effect in which activity around a display invites further participation [10].

### 3 Designing Digital Noticeboards

Digital noticeboards can potentially offer several clear advantages over traditional noticeboards: multimedia notices; automatic clearing of out-dated content; more fine-grained access control; adverts which grow more urgent as deadlines approach etc., but these advantages might come to the cost of the natural interactions described above as complexity is introduced. Here we consider several design guidelines which might be followed to help digital displays afford greater levels of simple, intuitive interaction to communities.

In both the cases described above, a surface began to afford the qualities of a noticeboard after a single person took steps to use the surface in this way. Often, new community systems may be devoid of content, leaving potential users wary of contributing something inappropriate or unwilling to contribute first. By seeding the display with existing content, perhaps from other noticeboards, this problem could be overcome. This approach was successful with the Wray display, which one of the authors seeded with his own photos of the annual village fair. However, there is a danger that this might restrict the types of content contributed by users if they choose only to follow the example set by early content.

Similarly, there may be advantages to leaving ‘stale’ content in place. Although we had cited removal of such content as a potential advantage of digital noticeboards, past notices can provide vibrancy to community spaces and signify that the surface is a noticeboard. Were all the notices on the display to expire and be removed, the perceived affordances and signifiers of the surface might disappear. It might be beneficial to ensure that a certain amount of content appears on displays at all times, regardless of its timeliness.

It may also be advantageous to provide multiple methods of communication with displays. Different people are comfortable with different technologies—whereas one person might be most comfortable using SMS, another might prefer

free Bluetooth transfers, while another may prefer to access the system from the privacy of their home Internet connection. Many more notices were posted on the kitchen whiteboard after magnets were introduced to allow printed notices, while the iDisplay system provided a variety of different interaction techniques and mediums allowing users to fit the display within their existing routines and processes. This might extend beyond digital technologies: there may often be community members who are uncomfortable with technology altogether and we are currently considering ways for such users to contribute content on paper which could be uploaded by volunteers.

## 4 Summary

In the foreseeable future, it is perhaps unlikely that digital displays will become as simple to use or widely accepted as paper noticeboards, as their benefits come with the cost of additional complexity. However, through careful consideration of the design, placement and content of displays, we can afford certain interactions and signify appropriate behaviours, decreasing the restrictions introduced by technology to allow digital noticeboards to play a greater role in communities.

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