

Gustbowl: Technology Supporting Affective Communication through Routine Ritual Interactions

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ABSTRACT

The Gustbowl enables parents and out-of-house children to bring back the feeling of coming home and allow for low-threshold, uncomplicated communication through using an aesthetically pleasing product. Technology is used to reconnect mother and grown-up son, by anchoring communication in routine daily actions. Prototypes were tested over longer periods of time to develop and evaluate both the intended routine use and improvised focused use of the bowl.

CATEGORIES & SUBJECT DESCRIPTORS: human factors; evaluation/ methodology; interaction styles; prototyping; user-centered design;

GENERAL TERMS: design; experimentation, human factors;

KEYWORDS: Interaction design, experience design, product design, calm technology, presence, prototyping.

INTRODUCTION

Most digital products that we use today have been designed from the notion of intensive and conscious use: they require the user's full attention. This is different from the way we use everyday 'physical' products such as cups, pens and photos, which we use while doing other things. Products such as mobile phones demand their user's full attention, and often interfere with social situations, e.g., by ringing during a theatre performance.

In part these problems are due to the limitations of design and usability methods. In task analysis, thinking aloud and most user testing methods, participants are given a task to be fulfilled within a relatively short period of time and often in a laboratory setting that is quite different from the everyday situation in which would use the product. Such sessions often are too short, and too intense, to allow nuanced social interactions between people, which rely on subtle messages, body language, and modulations and pauses in routine behavior. Our tools for design and usability testing should support such low-key, but rich-affect interactions.

For instance, mothers and their grown-up sons have no real problems using technology to communicate on explicitly important things in their lives: we can phone. However, new digital technologies are too intense for just 'keeping in touch'. As a result, people have pointless phone

conversations while they miss updates on small events.

Weiser and Seely Brown argued for 'calm' technology [6], low-key interfaces that don't require intense attention. One example of this is the Peek-a-drawer, which uses routine low-threshold behavior [1]. One feature of that project was testing over longer times than in single user confrontations, so the prototype can slip into the background of the user's life. In the design project described here, we also took extended user studies in their home environment, as a necessary ingredient in developing the design for a communication device for 'keeping in touch'.

DESIGN TEAM

The first author is a member of design team 'the Mamasboys', a group of four MSc students Industrial Design Engineering. This team participated in the Microsoft Research Design Expo 2003, hosted by Lili Cheng and S. Joy Mountford. Teams from design schools at four universities tackled the problem of sharing of rich personal media. The Mamasboys team was the entry from TU Delft, and was supervised by an interdisciplinary group at the multidisciplinary ID-StudioLab [3].

MOM, I'M HOME!

The team chose to use the communication between students and their parents as the focus of their project. For them it was an accessible user group. All four team members had left the parental nest for university some years before. Over the years they had noted that their relationships with their parents had changed, but the means of communication haven't evolved with that.

This starting point was elaborated through use of participatory design techniques [2]. In these studies it turned out that what the parents miss is not regular conversations, but the moment of coming home. This strongly emotional and rich moment is captured in the moment of a twelve-year old son screaming "Mom, I'm home!" before rushing up the stairs to his room. Similarly, what the sons want in communicating with their parents is a loose, non-obligatory, form of keeping in touch.

THE GUSTBOWL

The team's design resulted in the Gustbowl: a non-invasive communication device which builds on the routine of coming home. Many people perform a small ritual when they enter their homes: after taking off our coats, we empty our pockets of things like money, keys and mobile phones when we enter our apartments. The Gustbowl, a rounded dish

about the size and shape of a fruit bowl found in many households, offers a good place to hold such items. It offers the semiotic qualities needed for blending the new functions into existing rituals [5].

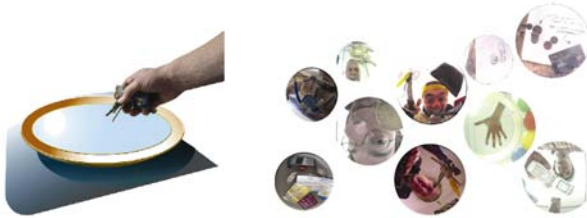


Figure 1: (left) keys are dropped into the Gustbowl, (right) four sample 'gust' images recorded by prototypes.

Because the Gustbowl has a rounded bottom, dropping things into it makes it wobble. Sensors in the bowl detect the movement; a camera built into the bottom of the bowl takes a snapshot of the contents of the bowl and things above it. The image and motion parameters are transmitted to another Gustbowl located at the parent's living room. This bowl will then start to wobble and display the picture captured by the first bowl. After about two hours, the image of the son's personal items will slowly disappear. Because both bowls are identical, parents can send back a 'message' by causing a movement of their bowl when it has come to a standstill.

The wobble and the picture constitute a "Gust of Presence", similar to saying "Mom, I'm Home!". The wobble of the Gustbowl tells the mother her son has come home and the picture gives her an idea of what is happening with her son and reassuring her [4]. The mother doesn't have to get up to see the picture to know that her son has come home, and she doesn't have to be there when the son comes home to see what is happening with him. On the son's side, the act of throwing things in a bowl is a routine act that doesn't invade his daily ritual.

TESTING OVER AN EXTENDED PERIOD

Two working prototypes were made (see Figure 2), each a table-sized enclosure supporting the bowls, and containing a motor, a camera and a sensor, all controlled by a computer linked to the Internet. For technical reasons, the images were displayed not inside the bowl, but on a screen next to it.

These working prototypes were tested for over a week in a real situation with a mother and son. During this period over 80 'gusts' were sent back and forth, of which 6 wobbles were actually noticed when coming in. All gusts were logged. Data from the test gave the team a clearer idea what kind of messages were sent, at what times, and at what level of explicit communication. Especially the messages sent by the mother through the Gustbowl provided new insights into how people improvise in using the device. For instance, the mother used the bowl to send pictures of her son's old belongings and memorabilia.



Figure 2: working prototypes in home situation (left: son's home; right: mother's home). Each prototype contains a camera, motor and sensor, a bowl, display, and internet-linked personal computers.

Also, the son reported that while on the road he collected stuff to put on the bowl to 'send home to mom'. Figure 1, right, some pictures to show how users improvise in sending messages with the prototypes.

CONCLUSIONS

The Gustbowl shows an example of a high-tech product supporting everyday communication in a low-key fashion. Findings from testing the prototypes strengthened the team's impression a product doesn't have to require people to change their daily routine, but that everyday rituals could be used casually. New opportunities and patterns of use that had not been imagined came up during the long-term testing. This new method of usability testing, in which there is no clear task description for the user to work with, offers many opportunities to support designers in creating products with which truly can live with us.

ACKNOWLEDGEMENTS

We thank Lili Cheng, Joy Mountford and Tjeerd Hoek for organizing the MSRDE, all the members of ID-Studiolab for their feedback and support, especially R. Luxen, K. Odabasi, D. Saakes, A. Hoeben and A. van der Helm for their help in creating a working prototype.

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