the Gustbowl

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& similar concepts

the maMasboys

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the Gustbowl and similar concepts.

This report is concerned with the differentiation of the GustBowl, compared to similar concepts found in the area of Computer Human Interaction (CHI). The similar concepts are derived from papers and demonstrations at the various CHI (and CHI related) conferences. The goal of this report is to show how the GustBowl is to be seen according to the listed concepts below, and at the same time give a more comprehensive justification for the concept of the GustBowl.

Tangible interfaces

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Waht are tangible interfaces?

Tangible interfaces are interfaces that form a bridge between the virtual world of computers and desktops and the physical objects that we encounter everyday. Tangible interfaces are a reaction to the somewhat static appearance of the desktop interface, a graphical interface between human and computer. The focus of the interaction is extracted from the computer display through the use of tangible interfaces that is through the use of physical, commonly known real objects.

A term closely associated with the field of tangible interfaces is 'ubiquitous computing' or 'calm technology'. One way of interpreting this term is a description of the ubiquity that arises when the world of physical objects as interfaces for a virtual world is entered. This real world of objects seems endless for the opportunities for interfacing it offers. But at the same time the connection that is made through physical objects is a rather subtle one: the associations users make in their interfacing are highly constrained by knowledge of previous use and anticipation of the workings of the interface displayed to the user. This means that the physical objects chosen to function, as an interface to the virtual world must have the right metaphorical meaning to the user.

As an example: the marble answering machine.

The voice message that are normally recorded on a tape in an answering machine, are loaded into a marble. The marbles represent the number of voice messages you have, and you can listen to the voice messages by grabbing a marble and putting it into a part of the machine. This enables you to listen to the message. The marbles, physical objects, represent the virtual messages on the machine, and by physically handling them you can listen to them.
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Similar concepts 2

Grouping

In this section the similar concept found in the literature will be described. The products and ideas are categorized in two groups:

Tangible Awareness Concepts – These are developed mostly in the light of workplace awareness (in a corporate setting), but a shift is seen towards the domestic setting.

Tangible Communication Concepts – These products are developed for communication between two (or more) persons, focussing the communication on transfer of awareness.

Awareness concepts

WaterLamp, Pinwheel, Live Wire, Sandscapes, Feather, Scent, The Pillow

These products are developed to transfer 'the feeling of awareness' in an workplace setting. This means that workers are generally concerned with the whereabouts of their colleagues, and therefore need a quick and efficient way to see if they are present. This information of their presence can be conveyed in many ways, but the focus has been to translate that information into 'ambient displays in architectural space'.

Waterlamp

The waterlamp projects the water circles, caused by vibrations on the water, on the wall. A lamp is placed beneath the water circles, which creates a rather subtle movement on the wall. The intensity of the vibrations is related to the activities in a room or on a computer network.

Pinwheel

The pinwheel works according to the same principles as the waterlamp, but instead of vibrating water, a pinwheel rotated by air is chosen. In this case however the pinwheels are actuated by a small motor, producing airflow. The number of pinwheels that rotate in combination with their speed is an indication for the intensity of activities on a computer network.

Pinwheel

WaterLamp

Livewire

The LiveWire is a string, attached to a small vibrating electro motor, placed in the ceiling with the string hanging down. The string will dangle and vibrate based on the number of bits that flow through a computer network. In this way one can see the activities on a computer network through the peripheral context of an office.

Sandscapes

With the aid of sand and blowing air onto the sand creating wholes one can get a notion of the activities on a computer network over a certain period of time.

Feather

The feather is built up from a long, transparent tube with a feather in it. This tube forms one end of the two-sided communication, with a photo frame integrated into a rubber socket on the other end. When one squeezes into the rubber socket, a signal is transferred to the tube, in which airflow will set the feather in motion. This motion is meant to show that the other person is thinking about you, for example when two persons are separated because of an vacation.


Sandscapes
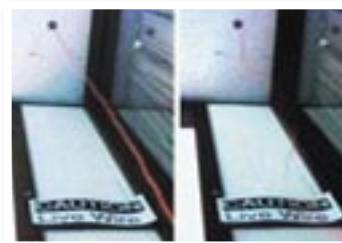
Livewire

Scent

The scent works on the same principle as the Feather, but the signal is not transferred to a tube, but to a device, which produces a scent. Again the handling of a rubber photo frame produces the signal.

The Pillow

The Pillow is a pillow with an integrated LCD screen. This LCD screen shows different planes of colours, caused by the electro-magnetic radiation present in our surroundings, due to radio and television signals, mobile phone signals and other disturbing electronic devices. The pillow is developed to make us aware of the amount of electronic devices we have in our direct surroundings.
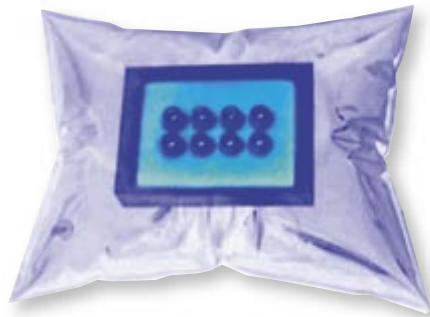
the Pillow

Communication Concepts

LumiTouch, Digital Picture Portraits, The Bed, LumiCard, TreeLamp and 6th Sense, Shaker, The Commuteboard, Peek-A-Drawer, Roomlink, Curtain intensional Presence Device, Lampshade IPL, The White Stone, The frame.

LumiTouch

The LumiTouch is a photo frame, consisting of pressure sensitive parts. If one of these parts is touched, for example when one picks up the frame, a signal is transferred to the other frame, which will light up. In this sense one is conveying the message that he/ she is thinking about the other one, when picking up the photo frame to look closely at the picture.

Digital picture portrait

The Digital Picture Portrait works with the same object, a photo frame, but differs a great deal from the LumiTouch. The Digital Picture Portrait conveys information about one live in amore general way: 4 scales are defined (health, relationship, general activity and special events) which has to be filled in by the user. In this way general information about one life is transferred to the other photo frame, which will display this information in the form of icons. The amount of icons represents the value of a certain scale. Through the use of these photo frames a grandma and her granddaughter can stay in contact, without actually having to call each other on a daily base.

*Lumitouch*
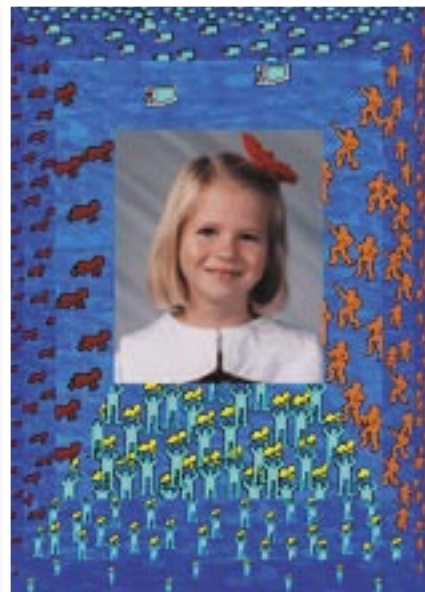
Digital picture portrat

The Bed

The bed as a tangible interface is developed at the MIT, with the aim of researching intimate communication. The bed consists of a pillow, a bed and curtains, which are in contact with another bed, including pillow and curtain. Caused by movements, whispering, body warmth and heart beats a signal is transferred to the other bed, which will repeat these inputs. In this way it seems that two people can have the experience of being closely present to each other while actually separated over a great distance.

The 6th sense

The Sixth Sense is a lamp-sculpture that conveys the presence of a person to another lamp-sculpture on a different location. The concept is aiming at transferring remote presence. By standing still for one lamp during a certain short period of time, a signal is sent to the other lamp, which in reaction will change colour. In this way the other side can sense that they are being remembered of.

The Treelamp

The Treelamp is based on the same concept as the 6th sense. The goal is to convey remote presence, but in this case the remote presence for a larger group than two, for example a family. The Treelamp is a tree-like structure, mounted on a wall, consisting of touch pads and lamps. When one touch pad is touched a family members is notified, and when the family members is returning the notification, the lamp will light up, representing the right family member.
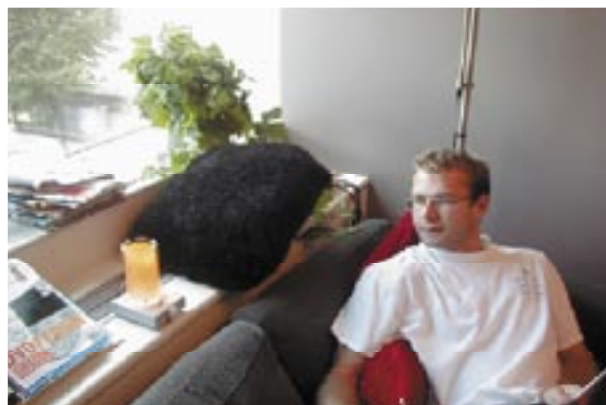
The 6th sense

the treelamp

Lumicard

The Lumicard is a sculpture mounted on the wall. Integrated with the concept are electronically tagged postcards that are sent to friends or relatives. These postcards are in contact with the sculpture, and as soon as the receiver touches the card, the corresponding pad on the sculpture lights up. In this sense one's remote presence is transferred.

Shaker

The Shaker consists of two small devices connected to each other through a wireless network. These devices are big enough to hold in one's hand, and to carry it in one's pocket. Simple tactile gestures can be transferred through the manipulation of one shaker. The shaker sends a signal to the other shaker, which starts to move and shake.

The Commuteboard

The commuteboard is a whiteboard-like device: a shared virtual desktop on which messages can be written and send to each other. Two flat screens are placed in two houses, on a central space, and through these screens communication can be started between the two houses. For example, two colleagues who commute together to their work can make appointments for their carpooling.
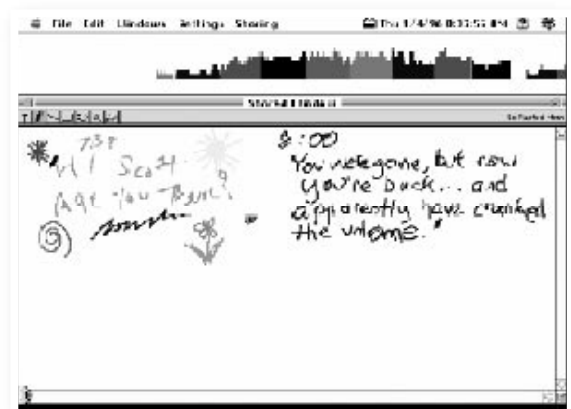
Commuteboard

Lumicard

Peek-A-Drawer

The Peek-A-Drawer functions as 'communication by furniture'. Two cupboards are connected to each other. The stuff people put in the top-drawer, is photographed and this photo is send to the connected cupboard. The picture is displayed on a screen mounted in the bottom drawer in the other cupboard. In this way people can show each other stuff through the 'communication by furniture'.

Roomlink

An open audio connection between two houses, where two randomly chosen rooms can be in continuous contact with each other. The quality of the open audio connection is good enough for both sides to hear every little detail.

Curtain intentional presence device

The Curtain Intentional Presence Device consist of two wooden photo frames integrated into a larger wooden frame. Behind the wooden doors, mounted in front of the photo frame, is a small screen, which displays a person, gently moving. When one side opens the wooden doors, the screen is visible and on the other side the wooden doors open up too. In this way one can sense that the other side is at home again.

Peek-A-Drawer

CIPD

Lampshade IPL

The Lampshade is a cylinder that consists of two parts: the upper part represents the other side, and the lower part represents the home situation. A user can indicate that he/ she is home, so that on the other side the upper part of the Lampshade lightens up. When both parties are at home, the Lampshade lightens up completely. This way it conveys someone's being at home.

The White Stone

The White Stone is a small handheld device, like the size of an ordinary pager, and works in a pair. Both persons carry one, and the goal is to feel each other's presence. The stone is covered with pressure sensitive and heat sensitive sensors that notice when someone is touching the White Stone. When the stone is touched a signal is transferred to the other stone, and a sound is displayed.

The frame

The Frame is a photo frame, reacting on signals from a small icon. This icon, a ring or some other small item that one carries around, is to be touched when arriving at home. When touched, the item produces a signal and sends it to the photo frame that will display a picture. In this way someone can notice if someone has arrived at home.

the hite stone

The frame

Lampshade IPL

Conclusions 3

Conclusion

The concepts that seem to be the most relevant to the GustBowl are the presence concepts, where a small moment in time is communicated in order to make each other aware of their presence. The concepts that are of most interest are the 6th sense, the LumiCard, The Lamp-Shade, Curtain Intentional Presence Device, The White Stone,The Shaker, Digital Picture Portrait, LumiTouch, The Treelamp and the Bed. All these concepts and products have the function to transfer the awareness of presence situated in an object that has some meaningful metaphorical association to the users.

Worth mentioning explicitly is the Peek-A-Drawer. It is presented as: "communication by furniture", and it offers the users a little peek in each other's life through the means of small belongings stuffed away in a closet. This product has many similarities with the GustBowl. First, both products work on the principle of communication by furniture, as the GustBowl is actually an aesthetical enhancement of one's living room. Second, the communication takes place through the showing of one's personal belongings, either in a nonchalant and unconscious way, or in a very deliberate, focussed and intentional way. And third, both have almost the same technical functions: both work with a camera and a display, showing the content of the drawer (or the Bowl) form the other side.

Next to these commonalities, there is a difference: all the products listed above aim for a communication on a deeper level. The GustBowl has been designed to allow for both types of communication. The communication can be purposeful and meaningful, but the GustBowl provides also a platform for nonsense communication, i.e. communication with no meaning at all.

The conclusions for the comparison with the similar concepts will be presented according to the following themes:

Intention

Asymetrical communication

Sequence of actionCommunication by tangibles

Peripheral versus focused awareness

Intention

All of the concepts demand a very conscious use from its user. This means that in order to convey the awareness of presence, the user must deliberately operate the device: the use demands that the user has the intention to use it. This clearly will have an effect on the behaviour of the user. This behaviour must be adapted to incorporate the product in their existing routines in order to be fully adopted by all the users.

The GustBowl does not require a change in behaviour as rigorously as the other concepts. The use of the GustBowl has been integrated into an existing routine: coming home after a long day of work, school or other activities. The use of the GustBowl has been designed in such a way, that the user subconsciously activates the GustBowl, simply by throwing his/ her stuff in the Bowl. The existing routine was discovered during the rich user research conducted before the actual design.

On the other hand, the GustBowl gives the user the opportunity to display a more focussed use, in stead of the casual use that the GustBowl supports in it's original setting. The user has the opportunity to use the Bowl outside of the existing routine. This outside routine use can be a very concentrated and conscious use, sending messages or pictures to the other side.

Asymmetrical communication

The GustBowl clearly provides a symmetrical communication. This means that both sides have the same amount of access to the other side through the use of the Bowl. Compared to for example the Feather or the Scent, which have an asymmetrical communication, this will ensure that both parties will have an equal means to satisfaction. From user testing of the Feather we have learned that over a period of time, the asymmetrical communication leads to frustration and irritation, because was given the opportunity to deliberately convey a message, while the other side was forced to receive, and not send at all. The equal means to satisfaction does not imply that the satisfaction reached on both sides is de facto equal; the GustBowl is intended to be used in a casual way, where both sides are not primarily looking for meaningful and deep communication, but rather a small casual sign to each other.

Sequence of Action

One of the strong points of the GustBowl was its incorporation into an existing sequence of action. As explained above this will ensure a fully adopted usage after the first weeks of playfulness and enjoyment are over.

Compared to for example the 6th sense this is major benefit to its intended use; the 6th sense demands the user to hold still in front of the lamp for about 5 seconds in order to get the signal transferred to the other side. This will have a profound effect on the user's behaviour: the user must change its existing sequence of action in order to communicate, which is determined as not desired by the users.

The GustBowl doesn't require this. When designing the GustBowl we found that the user desires to adopt the GustBowl in his life as a means for casual communication. After analysing the users, the main common existing sequence of action, for the parents as well as the children is the homecoming after a day of school or work. The parents stated that the homecoming is one of the greatest misses when the children have left the parental house.

Communication by tangibles

The main function of the GustBowl is to transfer the moment of awareness. Through the movement of the Bowl the awareness of presence is transferred and, if all goes well, notified. Next to the motion there is also a picture being made from the stuff inside the Bowl. This picture is sent as well, and displayed on the other bowl in order to give the other side a little glance into the life of the sending side.

The reason for this picture is an evocative one: one of the major findings of the user research was the fact that parents and children are evoked by the personal items of a family member to question one about it. Displaying each other's stuff therefore has the function of an invitation to make a phone call as soon as the moment of awareness has been transferred. The picture will ensure a more rich relationship between parents and children, because after noticing some interesting items in the GustBowl one would pick up the telephone and ask about the items.

Peripheral versus focused awareness

The GustBowl is located at a central spot in the house, where one passes by several times a day, or from where one can clearly see if the GustBowl starts to move. The GustBowl is not in the field of attention, but as soon as the bowl starts to wobble, the attention is transferred from a peripheral attention to a more focused attention. The movement draws the attention into the focused field, although it could happen that the movement is not perceived.

This tension between focused and peripheral awareness is also explained above. It deals with the fact that a user can show a very deliberate, conscious usage, but also a very nonchalant, peripheral one. Instead of actively waiting on a transfer of presence-awareness, an user can take up his one business, and be notified by the movement and accompanying sound- and light signal to be drawn to the GustBowl.

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