Affective is effective: How information appliances can mediate relationships within communities and increase one's social effectiveness

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Abstract: Technology is already used as a mediator in social relationships, but current appliances are rarely designed with social context in mind. In this paper I propose alternative methods for designing products and services in a way that will empower their users within their social context and increase their social effectiveness. I will argue that incorporating human emotional needs in the design process considerations lead to a finished design that responds better to the user's needs.

Keywords: Mobile communication, community, user centered design, social effectiveness, emotional communication, techno-jewelry.

1. Introduction

All people are part of social groups and networks and maintain some kind of relationships with their peers. Each group is distinguished from the other by the internal vocabularies and the rituals of interaction it develops [1][4]. What I call,'social effectiveness' is someone's ability to efficiently exploit situations, opportunities and actions toward cultivating their social relationships and gaining benefits such as higher social status. Social effectiveness plays a part in someone's ability to maintain relationships with other people and affects the quality of these relationships. The more socially effective someone is, the greater their social capital and status. Technology can enhance one's social effectiveness by giving one various means to react faster to changing social conditions. Technology can enhance one's social effectiveness by providing means to react faster to changing social conditions and to reduce the effort required to perform each action, so one can respond to more people and maximize the global effect of one's actions.

Social capital is the currency of relationships. It describes the structure of expectations, reciprocity and trust in a social network, and it affects the social actors' relationships and position within that community. Advising, communicating and offering emotional support are some of the ways to gain social capital. The advantage of a society rich in social capital is the system of mutual help and support its members can benefit from. The downside would be the exclusion and rejection of outsiders and people who don't conform to the status quo [4].

Computers and mobile devices are an integral part of our social lives, but this is not reflected in the way these devices are structured and interface with the users. They are built around *tasks and functions* rather than around *people and behaviors*.

The following case studies focus on the social complexities of design. In each, the core questions asked were: How can social behaviors, relationships and modes of communication be reflected in the technological environment, and especially in the mobile space and how can their users benefit from ICT's unique qualities and use them to enhance their social effectiveness?

These case studies were developed at Interaction Design Institute Ivrea. In each, technology was used to support social networks and improve people's ability to function in their social context and hence to increase their social effectiveness. In each case, technology is not just a mediator of social intentions but also an actor that influences the execution of those intentions. The media is the message.

Each case study targets a different audience: groups of teenagers, urban singles and their friends, and hospitalized people and their social network. The solutions were developed in correlation with the special needs of each group, and the general approach was to address the group's needs by first understanding their behaviors. In each case technology was used to mediate and enhance relationships in a community by tapping into existing behaviors and adding a new layer on top of them. The projects are:

1. Room Mates is a project which enables social groups to create shared private/public spaces over the phone by transforming the phone's interface from task to socially-oriented.

2. Circles of Care is a service which utilizes existing social networks and allows friends and family to improve the stay of their loved ones in hospital by providing comforts chosen by the patients themselves.

3. Teen Toys is about mediating social relationships through mobile communication within groups of teenage girls; it is a communication tool that supports immediate, non-verbal communication, and is based on internal group codes.

2. Case studies

2.1 Room Mates: A human face to the mobile device

The user group of this project is urban singles, a group extensively engaged in social activities. We wanted to understand the characteristics of different groups and events in this social context.

From careful studies of mobile phone address books and the connections (actual or possible) of the listed people, we learned that people tend to gather in groups that reflect mutual activities and interests. These groups are flexible, vague structures that modify as the interests of their members change. The nature and density of communication within these dynamic groups varies accordingly. Within the group, people like to share and recall moments and experiences, thus increasing their sense of belonging. However vague groups are, their participants know exactly who takes part in which activity; they just don't really talk about it.
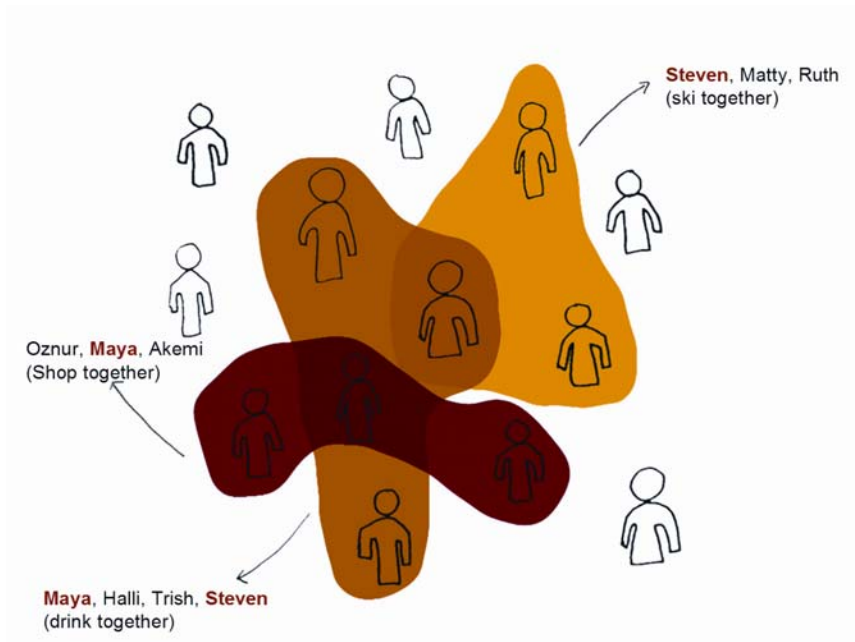
Figure 1: Dynamic grouping: the context defines the group.
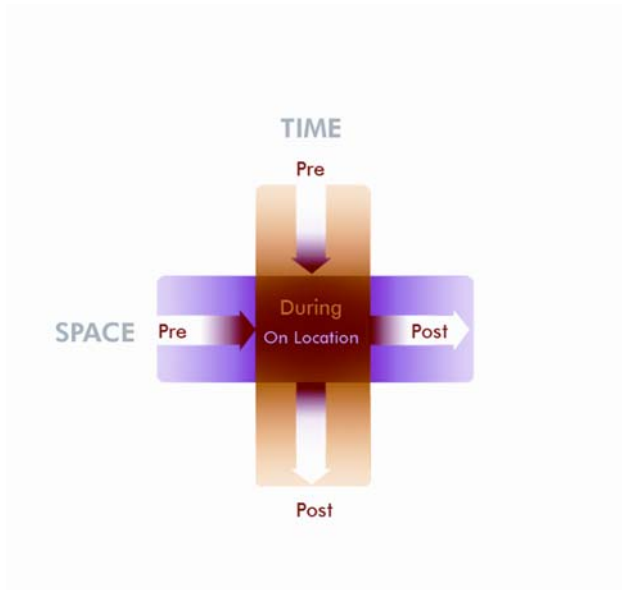

Figure 2: Event life cycle: planning, participating, reflecting

An event (For instance, a date, going shopping together, a concert, a meeting in a cafe) is not confined to physical time and space, but is rather a complex, fuzzy experience that has a specific realization point with a collection of ambiguity around it . Heavy communication traffic occurs among the participants before, during and after the event,

from the moment someone came up with the idea, through the scheduling, inviting and coordinating stages, until the moments of comparing experiences after it ended.[3]

Mobile communication plays a major part in planning, scheduling and reflecting on group activities, but when we looked at the phone we realized it was not meant to support this type of behavior in a group context. The project's goal became to transform the mobile device's focus from functional tasking into social tasking.

The solution was to create privately shared group spaces inside the phone. In this space, each group plans activities, shares experiences and reflects on past events. There are synchronous and asynchronous communication modes in the room, and all the communication and the media items that the group shares are preserved to create a communal history. The address book becomes the main phone interface and reflects the social links between the people.

Address Book: selecting the people and entering a shared Room
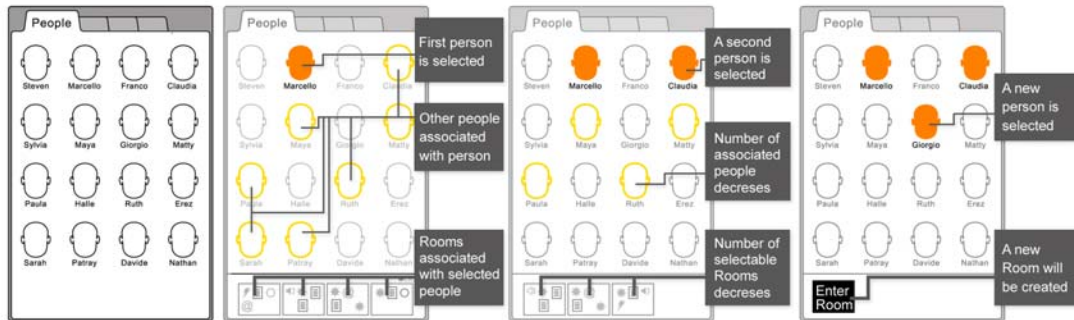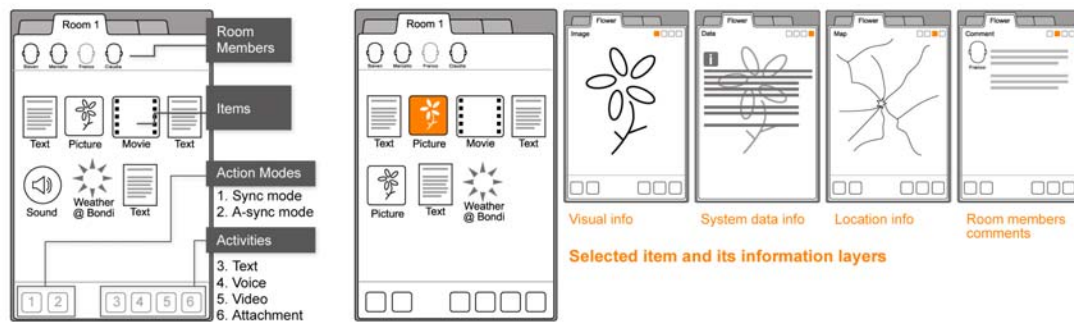
Shared Room

Figure 3: Interface concepts for Room Mates. The social connections define the Rooms. Room content is enriched by members' comments.

We created scenarios to examine how the design could support delicate social situations such as: making plans for the same time slot with different groups of people or making good friends part of an event without actually being there, or excluding a group member by withholding information from them and screening communication.
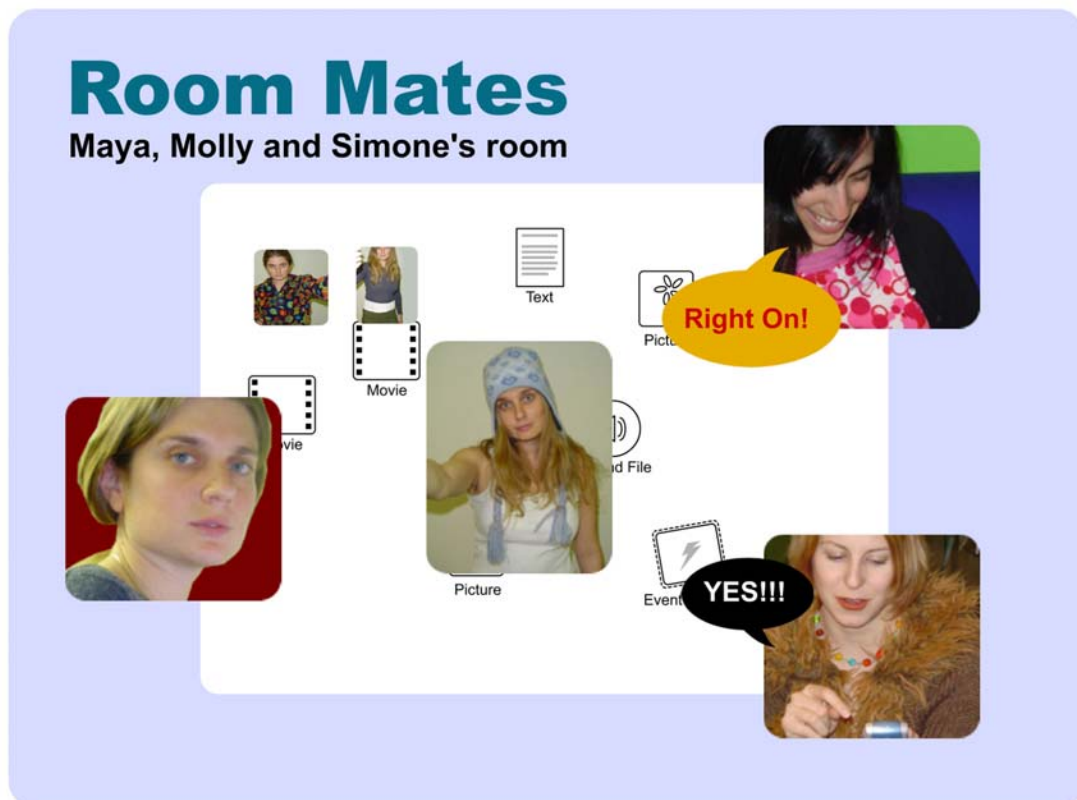
Figure 4: In the picture, Maya, Molly and Simone form a "dynamic group", based on mutual interest. In their privately shared space or "Room"; Maya, Molly and Simone can have video conferences, share pictures and videos, discuss different topics, leave messages and plan future activities.
All of the messages and information that exists in the room can be viewed and commented upon by all of the room's members. The group memory is built, as these activities are kept within the room for future reference as well as for nostalgic reasons.

This design allows users to manage group issues in a group format, and compare plans and outing options in real time while having simultaneous communication with different groups. By giving them an overview of their current social map and enabling them to be active in the group space, the "Rooms" structure creates opportunities to increase their social effectiveness.

2.2 Circles of Care

The context of this project was people and health, focusing on hospital patients and their social network. The latter includes family members, friends of various degrees of intimacy, and work colleagues. The research looked at the practical, social and emotional

needs of both the patients and their social circle, and how people act, communicate and connect in this extreme situation.

"You have your right to have your little things… the hospital can't cut your life completely. That's awful".
Maria, 68, Italy .

"I didn't want people to visit me… I just wanted things to be different".
Silvia, 35, Italy .

"I think it depends on where people are at, in the course of their illness. In the beginning it was really tiring to even read a newspaper".
Linda, 56, US.

Our research included the following methods: secondary research, brainstorming techniques, knowledge mapping, user observation, in-depth interviews, cultural probes and experience prototypes. Open-ended interviews conducted with eight people from different nationalities and various hospitalization experiences resulted in a list of needs and motivations that was used as a basis for the design guidelines.

Hospitalization was generally considered a negative experience. People's descriptions of their hospital experiences ranged from boring to traumatic. The differences in the experiences lay in small things with great impact, such as having someone to paint one's nails, watching a movie, and sharing a joke. Patients felt a loss of their individuality and identity; they felt that lack of information and strict social control made them disempowered and submissive.

There was a strong need to maintain as much as possible a person's social, family and work life, and retain a sense of normality in an extreme situation. Our analysis concluded

that communication with loved ones and small, timely comforts can make a big difference in the patient's life, and this became the core of the proposed service. When people were asked about their experiences as hospital visitors, their reactions ranged from wanting to help and be with their loved ones as much as possible, to feeling obliged to visit someone they didn't really care for.

The Circles of Care service mediates the relationship between hospital patient and their social circle. Using ICT, friends and family can provide comforts, participate in events remotely, and maintain flows of communication with the patient. The service frames existing solutions (delivery of goods, scheduling and communication) around a clearly-defined social network: the friends and family of the hospitalized patient. This framing drives the service to operate on a personal level and allow needs to drive the commercial functions. A set of design ideas was proposed:

- The patient's social circle website with a correlating phone application: this website distributes information about the patient, but also creates an ad hoc community where people who are related to the patient but not to one another can find rides to the hospital, arrange activities for the patient and support each other.
- Patient "wish list": A list of comforts patients select and their friends grant them as a way to improve their mood. Examples range from foot massage to bedside knitting lessons or a sushi meal. It's a way to please someone by giving them what they really want. The wish list can be viewed on the website or through the phone application.
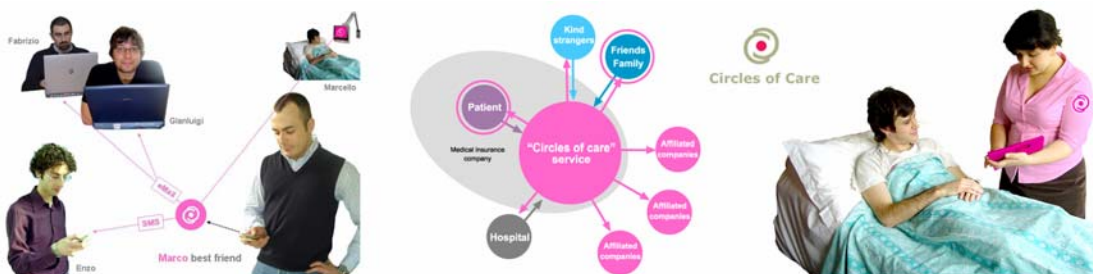- Bedside "delight center": An information and communication center for the patient.

Figure 5: Circles of Care service

The service is scalable to local conditions (it can work in a small town or in a metropolitan) and accessible through a variety of technologies (fax, phone, mobile, Internet). It also offers a variety of long and short-term solutions to cater for varying lengths of hospitalization.

Besides encouraging patients, the service also takes into account the needs and interests of the people that relate to them. The service allows those people to feel good about themselves and to show social generosity even if they live in a distant country, are too busy or just don't feel like visiting someone. The design provides benefits for both the patient and the members of their circle of care, who regardless of their level of acquaintance with the patient can maximize the impact of their gestures through the service, and consequently, extend their social effectiveness.

2.3 Teen Toys: The secret lives of teenagers

" How many names do you have in your address book? "
Sara, 14, Ivrea: "120"
"How many of them do you call on a regular basis? "
Sara: "Mother, father, brother and four close friends…"

Giada, 14, Lessolo: "We speak with each other maybe 20 times a day."

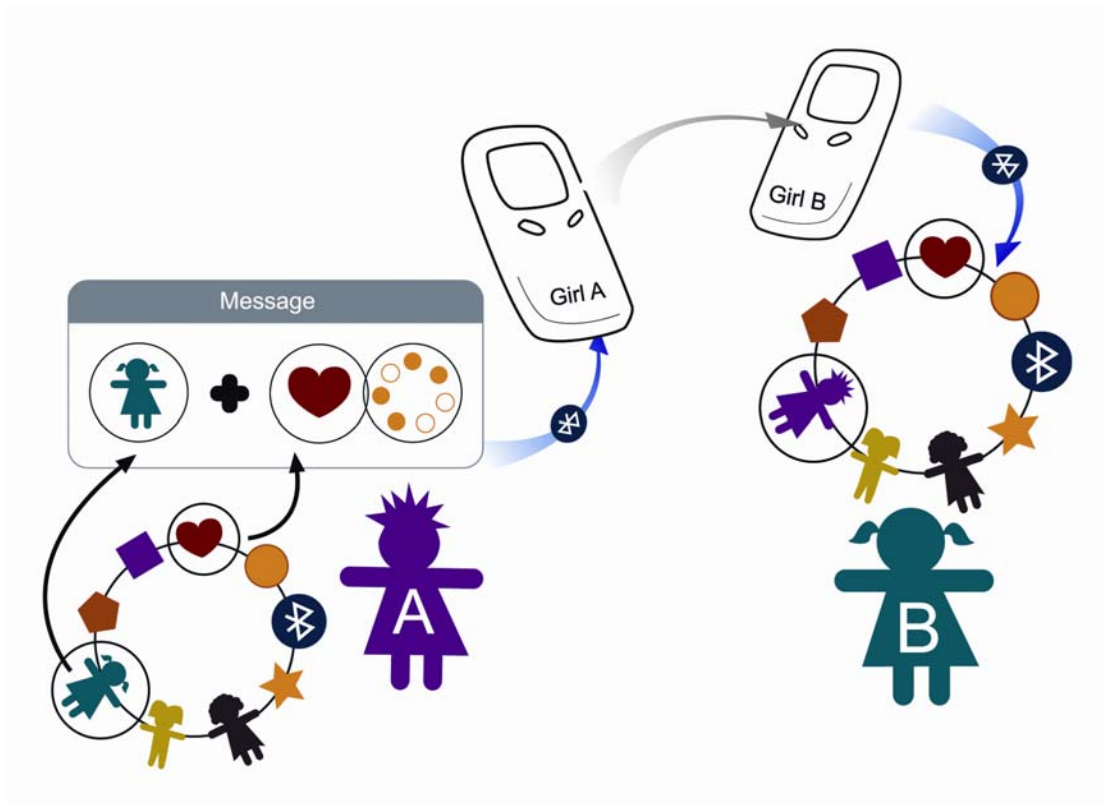*Chiara, 15, Ivrea: "If the lesson is boring I do' Squillo' just to say hello."*

Figure 6: The BuddyBeads system

Today's teenagers are growing up in a cellular world where what adults call "new technology" and "new perception" is the only reality they know. The phone is their playground, their classroom and their social club[6]. It's an inseparable part of their life, and they are emotionally dependant on it[2].

Adolescence is a time of transition, when alternating periods of crisis and exultation help teenagers build their identity and sense of self. In these turbulent times, adolescents turn to their peers to get support and to find role models. The group, and belonging to a group, is an essential part of a teenager's life, and each group develops its own behavior codes and etiquette [5]. Communication between group members is intense both in volume and in frequency and a great part of it is communication for communication's sake [4]. All these findings came up also in an interview with a group of four friends, who referred to themselves as the "MICS" (a combination of their initials). It was interesting to see the intensity of their relationship and how it was reflected in different ways. To signal their

friendship to the outside world they used matching friendship rings. A collective secret diary stood as a token of the deepest level of their friendship by sharing their thoughts and innermost feelings. The middle level was represented by phone swapping, where their communications and social activities were exposed [1]. To keep the relationship flowing, they used the phone massively, mainly sending SMSs. Using the phone enables the girls to show their commitment to the group at all times, pinging the others to remind them that they are there, and that the group exists.

Coupling the extremity in teenagers' attitudes and actions with the opportunities of mobile communication creates new behaviors and re-shapes existing ones. But however meaningful the phone is in teenagers' lives, it is not designed to support their need for emotional communication and group identity

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The Teen Toys project suggests alternative ways for communication among teenagers, ways which emphasize their social structures, behaviors and needs.

Structures refer to intimate groups of friends. Examples of *behavior* can be found in the use of communication devices as status symbols or creating codes and etiquette within the group. *Needs* range from the need to belong to a group, through the need for reassurance of being part of this group – one of its stronger expressions being the constant communication among group members – to the need for peer support.

Buddy Beads: emotional and coded communication accessories

"What are your favorite things? "
Marta, 15, Ivrea: *"My make-up, my clothes, my Jewelry. I love my phone"*
Buddy beads are emotionally coded communication accessories in the form of jewelry pieces that allow group members to communicate in an emotional way, with codes and signals they decided upon.

Each group member has a matching jewelry piece (for example: a bracelet) made of beads. Each bead carries a message inside. Examples of messages are "I'm having a bad day", "I'm excited" or "Professor Alarm!" These messages are decided by the group in advance and construct a secret private code among its members.

Once pressed, the beads transmit their message to the other group members. The messages are constructed from a combination of the bead's shape (which remains the same) and varying sequences of vibrations formed according to the sender's way of pressing the bead, which enhance the message with another layer of meaning. The combination of visual and haptic information conveys the sender's state of mind. The friends receive the message in their own bracelets in the form of a correlating bead which lights up and vibrates.

The BuddyBeads are a means for immediate, emotional and coded communication within a group of friends.

Even though different groups may use the same bead shapes, they will mean different things in each group, according to the specific group's culture and vernacular.

By using the beads the sender creates an activity in the group's space and declares on an emotional need for attention. By answering the message the respondent gains social capital among her friends and her social effectiveness grows.

3. Conclusion:

Technology is already used for mediating social relationships. But social interactions are complex phenomena, motivated by interests and needs. Many of them are emotional such as the need to belong to a group and be reassured about one's place within it; some of the needs are not pleasant, like having to fulfill social obligations or trying to exclude a group member. Still, to design for people these needs should be addressed. ICT today focuses on efficiency and functionality. The three case studies I have presented alternative ways to use these technologies, ways which empower users in their social context and increase their social effectiveness.

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Acknowledgements

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