Intel Developer Forum 2009 Design Expo

KeyPing

keypingtouch.wordpress.com

Abstract

The imaginative power of the KeyPing board in combination with a personal configuration of the ThinKeys enables elderly to social interact with their beloved ones beyond their immediate physical surroundings. Through explicit actions of the user and perceptible activity of the contacts, the KeyPing system facilitates a feeling of social connectedness: a momentary affective experience of belonging and relatedness - integral to wellbeing.

Introduction

As people get older, there is the risk that elderly gradually dissociate themselves from society. Communication can become an obstacle in maintaining and controlling social relationships. Relationships with other people give happiness and support, but also a sense of belonging and that elderly have a role to play in society, where exclusion and loneliness have a strong negative impact. This project explores positive solutions for this problem by introducing an interactive system: the KeyPing.

KeyPing system

The KeyPing system consists of an interactive board with various ThinKeys attached to it. A KeyPing board (Figure 1) can be activated by plugging a special KeyRing into a socket on the board (Figure 2); allowing homecoming rituals to be part of the interaction. The KeyPing board comes in different sizes and can either be placed on a flat surface or fixed to the wall.

A ThinKey (Figure 3) is a magnetic and moveable object that represents the explicit actions and implicit activity of a contact. A personal item of this contact can be attached to the ThinKey, according to the user's own associations and preferences. ThinKeys are sold in a package of two, meant to expand the social KeyPing network gradually over time.

By changing the background of the KeyPing board, the system fits in every home. The personal configuration of the ThinKeys on the board enables users to expand, control, and (re)arrange their network at any favorable moment.

Figure 1: A KeyPing board

Figure 2: A special KeyRing to activate the KeyPing board

Figure 3: A ThinKey

Figure 4: The KeyPing board on different places

Robert Leufkens • Mariska Rooth • Tristan Weevers • Delft University of Technology • The Netherlands • September 2009

Visualization of actions & activity

The social interaction with contacts goes beyond the physical board: by pressing a ThinKey it is possible to connect directly with a contact and therefore with another KeyPing system. When the ThinKey on the connected board is pressed as well (within a limited time span), the brightness of the LEDs on the front will increase (Figure 5).

Beside these explicit actions on the board, the KeyPing also registers the activity of contacts by tracking their position in relation to their board. The distance between the KeyPing and its user determines the intensity of the projected (LED)light of the related ThinKey on the board (Figure 6). This gradation in distance and therefore transition in light intensity are based on different types of transport. For example: an intense projection (100%) indicates that a contact is at home, while no projection (0%) means that this contact is far away from home.

A Global Positioning System (GPS) module in the KeyRing measures the distance from the contact to its KeyPing board (implicit activity). The KeyPing system and the wireless ThinKeys communicate through Radio Frequency Identification (RFID).

Figure 5: Explicit actions of both users

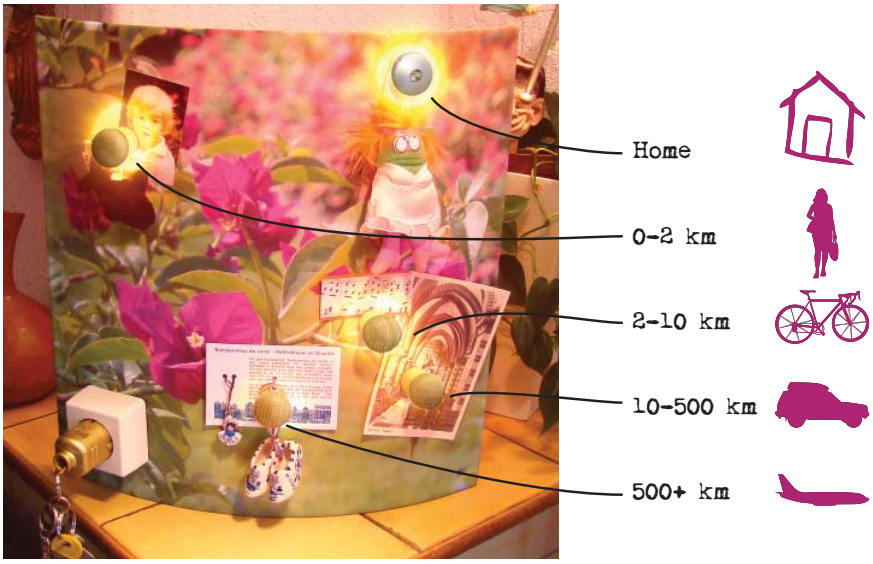

Figure 6: The intensity of the projected light shows the distance from a contact to his/her board.

The KeyPing is a precious addition to current communication systems, without being incriminating or obtrusive for its users. In a delicate and simple way, the KeyPing makes elderly feel more connected with their social neighborhood.

We KeyPing Touch...

KeyPing

keypingtouch.wordpress.com

Robert Leufkens • Mariska Rooth • Tristan Weevers • Delft University of Technology • The Netherlands • September 2009