

Channel- vs. Person-Orientation on Mobile Communication Devices

Using Usability Testing to Design Future User Interfaces

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ABSTRACT

Mobile communication is becoming an important factor in collaborative work. At the same time mobile communication devices are increasing in capacity, though the limitations in screen size and interaction possibilities remain. The increased capacity makes multiple communication channels, such as email and telephony, available on a single mobile device. In this paper we discuss how to outline a study, which utilizes usability testing techniques to provide information on whether a channel-oriented approach or a person-oriented approach is easier to use. A channel-oriented approach means that each communication channel is represented as an application and interaction starts off with choosing the channel, whereas person-oriented means that the channels are integrated and the interaction starts off with choosing the recipient.

Keywords

Mobile Communication, Mobile Computing, HCI, Usability Testing

1. INTRODUCTION

The importance of mobile communication support is increasing, as new organization forms are emerging where mobility is recognised as an important facet of co-operative work (Bellotti and Bly 1996, Luff and Heath 1998). A worker in such an organization will be mobile, yet still in need of access to people and information in order to solve complex tasks. This can be accomplished by using different communication channels such as telephone, email, video conferencing etc.

The goal of this paper is to describe how usability testing techniques can be used in a controlled environment to determine which of two different approaches for initiating communication users prefer on a mobile communication device. This study

constitutes the first phase in the ComCenter project, which explores how different user interface designs facilitate initiation of mobile mediated communication.

The majority of mobile communication devices currently available on the market either support only a single communication channel (e.g. a cell phone) or have each available channel represented as a separate application (e.g. an e-mail enabled cell phone or handheld computer). This is a channel-oriented approach to initiating communication. Important limitations inherent in handheld computers are the limited screen size and interaction possibilities (Kristoffersen and Ljungberg 1999). This makes application switching more difficult than on stationary computers.

We intend to test whether a person-oriented approach with integrated communication applications where the user first chooses the person to contact and then the

appropriate channel can make communication initiation easier and more intuitive on handheld devices. We also investigate the effects of providing situational information about potential contacts since knowledge about recipient availability is an important factor when choosing what channel (or media) to use for solving a particular task (Straub and Karahanna 1998).

2. THE USABILITY TEST SETUP

The purpose of the test is to compare two designs as to which one is more usable in a given situation. Usability techniques are here used to identify and rectify usability deficiencies, in order to create products that are easy to learn, simple and satisfying to use and also provide high utility and functionality for the user (Rubin 1994). Empirical data is collected on the users performance and experiences. The test session is scheduled to take place during September 2000 in Stockholm, Sweden.

The prototypes consist of sets of linked web pages containing a combination of address book entries and graphical elements to generate the feel of real applications and are run in the integrated web browser on the Compaq iPAQ H3630 Pocket PC. This provides the “look and feel” of likely future communication devices.

The users are organized in two groups. Each group consist of 6-8 businesspersons working for a Swedish IT-company. They are IT-savvy as well as mobile. The first group performs scenario embedded tasks using channel-oriented prototypes, first without situational information on potential contacts and then with the information present. Situational data include how busy the contact is, what he/she is currently doing and what communication channels are available to that contact. The second group performs the same tests but with person-oriented prototypes.

During the test sessions, scenarios with embedded tasks will be used to make the sessions more natural, and to provide a context for users to act within. The users are encouraged to think aloud and voice out their actions, thoughts and concerns regarding the prototype as they are using it. In order to gain an even more detailed picture of the users interactions with the prototypes, data capture will include video recording of sessions and logging of data generated by the prototypes. Video recordings provide data on user reactions during the interaction and prototype-generated data shows us the

paths taken through the application. Interviews provide opportunities for asking questions and discussing the users actions, this to receive the users impressions of the prototypes.

3. DISCUSSION AND FUTURE WORK

The main result expected from the usability test is increasing knowledge about how user interface design affects mobile communication. The future direction of the ComCenter project is dependent on which design approach the users in the test prefer, person- or channel-orientation. Of more general interest are also the underlying reasons for why users prefer one approach in favour of the other.

More related research in this area is planned. An ethnographically inspired field study will take place when the analysis of the results from the usability test is finished. Shadowing mobile workers will provide more information about initiation of mobile communication in context. The effect of using situational information will continue to be an important part of our planned research in this area.

The results of current as well as future research will contribute to our goal of establishing “a look and feel” for future mobile communication applications.

4. REFERENCES

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