Localized User Interface for Improving Cell Phone Users’ Device Competency

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ABSTRACT

This study tried to examine how cell phone users who undergo a technology leap acquire their procedural knowledge of operating a cell phone and to find out which factors can improve their device competency. Using interviews, usability tests, and a questionnaire, this study found out that many respondents use unstructured means such as asking other cell phone users or rote learning in gaining their procedural knowledge. Some factors influencing users’ device competencies that were found in this study are classified into three categories: user interface design, culture, and the users themselves. In order to improve users’ device competency, elements in those three categories must be integrated. One realization of such integration is the attempt of localizing user interface through the user’s culture, not the culture where the cell phone is designed and manufactured.

Keywords: device competency; localized user interface; usability in cellular phone; user interface design

INTRODUCTION

The use of cellular (cell) phones has been increasing sharply in recent years. Even the number of cellular phone subscribers exceeded the number of the fixed-line phone subscribers as reported by the International Telecommunication Union (ITU) in 2002. The rate of cell phone users will continuously rise in the coming years as the cell phone manufacturers are steering their sale growth in densely populous countries such as China, India, and Indonesia (Diryo, 2006). With a population 222 million, in which 178.8 million have the potential to be cell phone users, Indonesia becomes one of the promising market targets.1

As a consequence of becoming a potential market, Indonesia has undergone a surprisingly significant growth of cellular phone subscribers. According to ITU data (2006), there were only 3.6 million subscribers in 2000 and 6 million subscribers in 2001, but it grew to approximately 30 million in 2004 and 46.9 million in the middle of 2005. With this rate, the teledensity of cell phone subscribers in 2005 was 21.6 cell phones per one hundred inhabitants. In contrast to this fantastic growth, the growth rate of the fixed-
line phone subscribers escalated insignificantly. In 2000, there were 6.6 million subscribers of the fixed-line phones. In 2001, it increased to 7.2 million, 9.9 million in 2004, and 12.7 million in the middle of 2005 (Diryo, 2006). This shows that the percentage of fixed-line phone subscribers in 2005 was about 12% of the total telephone subscribers. The teledensity of fixed-line phone in 2005 reached 5.73 fixed-line phones per one hundred inhabitants. According to ITU (2006), the numbers of the main phone line subscribers have also included the public payphones and ISDN channels.

Scrutinizing the statistical data above, it can be seen that there lie some interesting phenomena. The 12% rate of the fixed-line phone subscribers implies two facts. First, only a few people living in cities and their surroundings are able to take advantages of the fixed-line phone technology. Second, the infrastructure of the fixed-line phone has not been widely spread and well established. In contrast to this rate, the 78% of the cell phone subscribers signify that the use of cell phones in Indonesia as a developing country replaces the use of the fixed-line phone. Only for a small number of subscribers, the cell phone functions as a supplementary communication device. Therefore, there are many cell phone users who have no or little experience in operating the fixed-line telephone. Based on these phenomena, this study tries to examine the usability aspects of cell phones for certain groups of users in Yogyakarta, Indonesia and tries to find out factors that influence their device competency. The result of this study is not intended to give a generalization about cell phone users in Indonesia, but rather to present a description about the device competency of the majority of cell phone users in time of the global market and international user interface design. This study considers also the fact that the cell phones which are widely marketed in Indonesia have been localized at the superficial level only through language.

THEORETICAL FOUNDATION

Culture and Interface Design

In today’s increasingly global market, market behavior analysts agree that the expectation of homogenization and internalization can be misleading. Forced by the global competition and the demand of increasing their sale rate, many multinational firms have to develop new marketing strategies and new products that consider the local culture where the products are sold. This principle works also for the user interface design. Some research on the importance of localizing user interface design has been made and concluded that localized user interface could enhance the usability (e.g., Khaslavsky, 1998; Kondratova & Goldfarb, 2005; Marcus, 2001 & Vatrapu et al., n.d.). But what might “localized user interface” mean?

Localized user interface means adapting the interface design to local culture and sensibilities. Kondratova and Goldfarb (2005) review three models that have been proposed by researchers for integrating cultural aspects in user interface design. The most outstanding model is the cultural dimension (n-factor) model. Cultural dimension models attempt to measure and compare different cultures using a number of cultural factors. The number of factors varies from five, as can be found by Hofstede’s (n.d.) five-factor model, to nine, as in Khaslavsky’s model. Among the cultural dimension models, Hofstede’s model is widely cited. Based on interviews with IBM employees in 64 countries, Hofstede derived five independent dimensions of culture that manifest themselves in a culture’s choices of symbols, heroes/heroines, rituals, and values. His five dimensions of culture are a) power-distance, b) collectivism vs. individualism, c) femininity vs. masculinity, d) uncertainty avoidance, and e) long- vs. short-term orientation (orientation to the past, present, and future). Khaslavsky’s nine-factor model is a combination of Hofstede’s and other models.

The second model is known as a cultural markers model which was introduced by Barber and Badre as reported by Kondratova and
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