Chapter 27
Identifying the Essential Design Requirements for Usable E–Health Communities in Mobile Devices

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ABSTRACT

We believe that well-designed and usable user interface is critical, as the adequate use and the effectiveness of any application usually depend on it, especially when a specific system is oriented to play a key role into the process of patients' care (healthcare applications). Very good examples of healthcare applications are E-Health Communities, which are generally oriented to contribute in the process for improving the quality of life for members of a community suffering from chronic diseases. In order to contribute to previous efforts, we propose a set of 15 basic usability requirements specifically oriented to mobile interfaces for blog-based instant messaging e-health communities. We structured our set of usability requirements on two sources: Firstly we consider the survey-obtained feedback from 72 participants who regularly access social networks from mobile devices. Then we complemented this information with some ideas presented in previous research. We show the effectiveness of the proposal by using an illustrative example (designing an interface-prototype for a mobile e-health community) as a proof-of-concept together with a preliminary usability study. The prototype was entirely created by observing our usability requirements. The results of the study are encouraging and reflect a good correlation between the requirements proposed and the users' perception. This seems to indicate that although this research-work is focused on providing a starting point to developers with guidance in designing usable interfaces for e-health communities accessed by mobile devices, our findings could be easily adapted and applied to other mobile scenarios for blog-based instant messaging applications.

INTRODUCTION

According to Toyoda & Harrison (2002), and Vronay et al. (1999), a great deal of research has been conducted on computer-mediated communications (CMC) especially on computer-based communications, such as e-mail and chat. Chat applications are designed to allow the simultaneous type of messages by multiple participants "Chatters" who appear together on a channel of communication frequently known as "Chat room", "room", or "channel". Currently, the chat represents the most popular computer-based communication method in the Internet. Additionally this technology enables participants to exchange information, experiences, knowledge, and feelings, around the world with millions of people.

Nowadays many people are interested and involved in research and development of novel information technologies (IT) directly related to a number of specific topics. One of the most interesting is undoubtedly the application of IT to healthcare issues (e-health). According to Hesse & Shneiderman (2007), e-health applications must be based on joining best evidence from the user sciences, such as human factors engineering, human–computer interaction (c.f. Hewett et al., 1996), psychology, and usability (c.f. Nielsen, 1999), with best evidence in medicine to create transformational improvements in the quality of care that medical sciences offer. These improvements should follow recommendations from the Institute of Medicine to create a healthcare system that is: safe, effective (evidence-based), patient-centered (usable), and timely.

Ahern (2007) emphasize that advances in Internet and related communication technologies, such as mobile devices, contribute to the fast growth in e-health. In addition, emerging studies and experiments provide support for the beneficial effects of online interactive e-health applications and strategies, and the acceptance and popularity of these items between users (patients). An example

of such advances is the E-Health Communities, which represents a relatively new strategy.

Grimes et al., (2010) and Welbourne et al., (2009) states that e-health communities emulate the motion of the Face to Face (FtF) support groups, widespread in Psychology and Psychiatry for the treatment of several disorders and psychological illnesses. Early in this decade it began using virtual communities as part of the treatment to improve the quality of life in patients suffering from chronic diseases (e.g. breast cancer) by means of a number of aspects including sharing experiences and information between individuals, professional orientation, and promoting the socialization, among others.

According to Welbourne et al. (2009), available on-line technologies for social networking allow e-health communities to increase the virtues of traditional FtF Support Groups, e.g.

- E-health communities can overcome temporal or geographic boundaries that FtF Support Groups cannot.
- The members of an e-health community may exchange information about treatments, symptoms, perspectives, or even feelings, and obtain support from others. Some members of offline networks may not be comfortable or even able to provide this support. This way, introversion in members of the group could be reduced.
- Individuals may feel more comfortable sharing personal information in an e-health community, where there is some degree of separation from their FtF Support Group.
- In e-health communities it is possible to establish open sessions between members. Additionally, private talks could be set between specific members using a private chat tool during the same session.
- Other members of their offline networks may not be comfortable or even able to provide this support.

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