Social Factors and Interface Design Guidelines

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INTRODUCTION

Designing an attractive user interface for Internet communication is the objective of every software developer. However, it is not an easy task as the interface will be accessed by an uncertain number of users with various purposes. To interact with users, text, sounds, images, and animations can be provided according to different situations. Originally, text was the only medium available for a user to communicate over the Internet. With technology development, multimedia channels (e.g., video and audio) emerged into the online context.

Individuals' sociability may influence human behaviour. Some people prefer a quiet environment and others enjoy more liveliness. On the other hand, the activity purpose influences the environment preference as well. Following usability principles and task analysis (Badre, 2002; Cato, 2001; Dix, Finlay, Abowd, & Beale, 1998; McCraken & Wolfe, 2004; Neilsen, 2000; Nielsen & Tahir, 2002; Preece, Rogers, & Sharp, 2002), we can predict that business-oriented systems and informal systems will require different types of interfaces: Business systems are concerned with the efficiency of performing tasks, while the effectiveness of informal systems depend more on the user's satisfaction with the experience of interacting with the system.

Suppose you are an Internet application designer; should you provide a vivid and multichannel interface or a concise and clear appearance? When individuals' sociability and the activity purpose contradict, should the interface design follow the socia-bility requirement, the purpose of the activity, or even neither of them?

To answer these questions, the characteristics of communication interfaces should be examined. For face-to-face communications, sounds, voices, various facial expressions, and physical movements are the most important contributing factors. These features are named physical and social presence (Loomis, Golledge, & Klatzky, 1998).

In the virtual world, real physical presence does not exist anymore; however, emotional feelings, group feelings, and other social feelings are existent but vary in quantity. The essential differences of interfaces are the quantity of the presented social feelings. For example, a three-dimensional (3-D) interface may provide more geographical and social feelings than a two-dimensional (2-D) chat room may present.

To assess the different feelings that may emerge from different interfaces, a two-dimensional chat room and a three-dimensional chatting environment were developed. The identification of social feelings present in the different interface styles is presented first. Then an experiment that was carried out to measure the influence the activity styles and the individuals' sociability have on the interface preferences is discussed.

The questions raised in this article are "What are the social feelings that may differ between the two interfaces (2-D vs. 3-D)?" and "Will users prefer different interfaces for different types of activities?"

Table 1. Different activities

Business Oriented	Social Oriented
Do math homework	Take a break from work
Schedule technical meetings	Fill up free time
Seek technical advice	Gossip and chat

BACKGROUND

Graphically, Internet communication interfaces can be classified into two categories: two dimensional and three dimensional. A 2-D interface is an acceptable choice for our flat monitor. 3-D interfaces apply various graphical algorithms to simulate the sense of depth in 2-D interfaces; hence, most 3-D interfaces can be defined as 2.5-D. In this article, the 3-D interfaces mentioned below can actually be classified into 2.5-D.

Social Presence

Communication channels are vivid in face-to-face communication. Physical movement, facial expressions, and variations of sound create the diversity. Computers and the Internet cannot provide the physical presence of users. Instead, people feel that they are chatting directly with other users. This is called social presence.

Social presence is defined as the "degree of salience of the other person in the interaction and the consequent salience (and perceived intimacy and immediacy) of the interpersonal relationships" (Short, Williams, & Christie, 1976, p. 65).

Communication researchers (Bailenson, Blascovich, Beall, & Loomis, 2001; Short et al., 1976) argue that even in a text-dominated environment, social presence still exists and provides important functions.

Interfaces with rich or poor communication channels may lead to different amounts of perceived social feelings. Witmer and Singer (1998) discussed some factors influencing social presence. These factors include the degree of control, environmental richness, multimodal presentation, scene realism, immediacy of control, anticipation, mode of control, physical modifiability, sensory modality, degree of movement perception, active search, isolation, selective attention, interface awareness, and meaningfulness of the experience.

With social-presence theory, different interfaces can be classified and assessed by the amount of social feelings presented.

Human Sociability Style

Sociability is defined as the quality or state of being sociable. The Merriam-Webster online dictionary (1996) defines sociable as the inclination by nature to companionship with others of the same species.

Personality is an important factor that differentiates humans (Nye & Brower, 1996). The same events may trigger significantly different feelings and actions according to different sociabilities.

An individual's sociability may influence his or her actions and scene preferences. Some people may enjoy going out and socializing with friends while others prefer reading a book alone. Their different social preferences may further influence their choice of Internet communication interface and their preference of the quantity of social-presence feelings.

Activity Style

The purpose of communication can be classified into two general categories: business oriented and social oriented. For business-oriented communication, people intend to grasp the information they need as soon as possible. On other hand, people use social-oriented communication to make friends, set up relationships, and create social networks. Table 1 lists some typical business-oriented activities and social-oriented activities.

Business-oriented activities may require an easy-to-use and concise environment, for example, an office, a conference room, or a classroom. In this kind of environment, people know who is in charge, know the problems they are trying to discuss, and intend to work out solutions as soon as possible.

Social-oriented activities demand a relaxing, free, and highly sociable context, for example, a restaurant, a bar, or a private garden. In this kind of environment, people can relax and enjoy their time.

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