

# Enhancing E-Collaboration Through Culturally Appropriate User Interfaces

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## INTRODUCTION

Prior to the Internet, forms of social expression, communication, and collaborative behavior are known to be sensitive to cultural nuances. According to researcher Geert Hofstede (1991), a widely used definition of culture is proposed where “Every person carries within him or herself patterns of thinking, feeling, and potential acting which were learned through their lifetime” (p. 4). Hofstede referred to such patterns as mental programs or “software of the mind.” It is expected that such mental programming related to cultural differences will affect perceptions of the electronic medium as well (Raman & Watson, 1994). Related to the topic of this volume, culture has a place in the consideration of e-collaboration when individuals come together to work toward a common goal using electronic technologies. This may include various domains including e-business, e-learning, distributed project management, working in virtual teams of various forms, to name a few.

While there is little work to date on the explicit topic of culture and e-collaboration, there is evidence that creating culturally appropriate user interfaces (Cyr & Trevor-Smith, 2004) contributes to a better perception of the interface (Kondratova & Goldfarb, 2005), and indeed to enhanced levels of Web site trust and satisfaction (Cyr, 2006). In e-commerce settings, Web sites that are perceived as appropriate to the user have also resulted in greater commitment (Oliver, 1999). In this article, and building on previous work in related areas, it is argued that the development of culturally appropriate electronic interfaces can enhance user involvement, ultimately resulting in enhanced e-collaboration.

In the following sections, culture as a context for e-collaboration is outlined followed by considerations of the Web used as a communication tool, and how trust and satisfaction are related to the online collaborative process. The article ends with concluding remarks.

## CULTURE AS CONTEXT

Over the decades sociologists have proposed that socially shared meanings are culture specific. These shared meanings are grounded in language, geographical proximity, and history as shared by members of nations or those who have lived within the same social environment (Hofstede, 1980). In both commercial and noncommercial settings, culture has been found to have implications for information systems research. More specifically, culture is proposed to affect online trust (Jarvenpaa, Knoll, & Leidner 1999), Web site development (Sun, 2001), use of group support systems (Reining & Mejias, 2003), predisposition for type of electronic communication media (Straub, 1994), among other topics.

Related to how individuals operate together in groups, mental schemas for knowledge construction (Kock, 2004) influence the impact of e-collaboration technologies on the individuals involved. Schemas can be socially constructed, causing groups to interpret information in specified ways (Lee, 1994)—thus influencing perception and interaction. As Kock (2004) elaborates, the degree to which members of a task group share similar schemas, then less cognitive effort is required to successfully accomplish the task. Members of the same cultural group are more likely to share similar mental maps or schemas than with members of external groups.

In decision making, Tseng and Stern (1996) found significant differences in the information gathering behavior between Asians and North Americans. Different online communication strategies were uncovered in a study that included Japan, Spain, and the United States (Okayazaki & Rivas, 2002). Further, cultural differences exist in instant messaging between Asia and North America (Kayan, Fussell, & Setlock, 2006). For example, North Americans reported significantly less multiparty chat and rated emoticons lower in importance than Asians. Ethnicity has been established as a

factor in electronic brainstorming (Tan, Wei, Watson, Clapper, & McLean1998). Based on the foregoing, it is a natural extension that culture influences e-collaboration behavior.

## **THE WEB AS A COMMUNICATION MEDIUM**

Bordia claims that “computers and electronic networks have revolutionized communication” (1997, p. 99). Although it is not always clear that the electronic medium has enhanced the communication process since nonverbal cues that form a significant portion of the transmitted message are mostly missing. In fact, research has demonstrated that an absence of nonverbal cues that serve to “embellish meaning or social context regarding gender, age or status” can potentially hamper communication efficiency (Bordia, 1997, p. 9). Alternately, new capabilities for communicating content and collaborating using the Web are created (Tsao & Lin, 2001).

Simon (2001) used media richness theory (from Daft & Lengel, 1986) to examine how information richness might enhance user perceptions of the interface. Various design characteristics of Web sites were considered such as shapes, colors, language, site layout, and quality of information. It was expected that information rich Web sites would reduce user ambiguity, increase trust, reduce perception of risk, and encourage users to utilize the site. Significant differences between cultural groups in the study were uncovered, with Asians registering higher levels of trust with information across all Web sites in the study than European and North American groups. This finding suggests that not only is creating information rich interfaces useful generally, but that across cultures different preferences for the user interface prevail.

In studies on graphical user interfaces (GUI) in group support systems (GSS), benefits of using icons over text have been established, although this research does not explore aesthetics or usability of the system (Sia, Tan, & Wei, 1997). One would expect that computer supported, interactive, visual representations contribute to a user’s assessment of the medium as more effective, and may vary across cultures. As already noted, in one study on instant messaging differences in perceptions of emoticons across cultures were discovered. In other work, German users were

found to value hierarchy and verbal components of a Web page, while Asia users prefer visuals (Sun, 2001). Color connotes different cultural meaning (Barber & Badre, 2001; Cyr & Trevor-Smith, 2004). Red means happiness in China but danger in the United States. In a study that compared Canadian, American, German and Japanese users, Japanese favored a more visual and “emotional” approach to user interface design (Cyr et al., 2005).

Related to the preceding, and in the context of e-collaboration, it is expected that if user interfaces are culturally appropriate then users are more likely to become engaged in the communication process, and with one another. This would be the case whether cross-cultural collaboration occurs in e-business, e-learning, or distributed work settings.

## **TRUST AND E-COLLABORATION**

The use of computer-mediated and Web-based communication technologies has created new virtual environments in which trust plays a significant role. Online trust between collaborating parties is more difficult to elicit than trust in traditional settings since users have fewer cues than in a face-to-face or brick-and-mortar context. The primary communication interface for the user is an information technology artifact rather than a person.

Despite the complexity involved in studying online trust, in recent years a body of knowledge has been developed around this topic. David Gefen (2000, 2003) has contributed significantly in this area and identifies trust as a combination of: (1) beliefs about integrity, benevolence of another party; (2) general belief that another can be trusted; (3) feelings of confidence and security in the response of another; or (4) a combination of these various characteristics. Further, Corritore et al. (2003, p. 740) provide a definition of online trust that includes cognitive and emotional elements. They suggest that trust encompasses “an attitude of confident expectation in an online situation or risk that one’s vulnerabilities will not be exploited”. In e-collaboration, the user ideally seeks confidence in the computer mediated experience and that over time a trusting relationships with other users can be established.

There is a growing reservoir of research on the role of trust in computer-mediated communication (CMC) including virtual collaborations and long-distance

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