Chapter 6
Intercultural User Interface Design

Rüdiger Heimgärtner
Intercultural User Interface Consulting (IUIC), Germany

ABSTRACT

This chapter starts with an introduction illuminating the theoretical background necessary for taking culture into account in Human Computer Interaction (HCI) design. Definitions of concepts used are provided followed by a historical overview on taking culture into account in HCI design. Subsequently, a glimpse of the current state of research in culture-centered HCI design is derived from secondary literature providing the gist of the structures, processes, methods, models, and theoretic approaches concerning the relationship between culture and HCI design. Controversies and challenges are also mentioned. A short discussion of results from empirical studies and design recommendations for culture-centered HCI design lead to implications and trends in future intercultural user interface design research.

BACKGROUND

Terminology

There are several concepts of "culture". For instance, the organizational anthropologist Geert Hofstede defines culture as collective programming of the mind (cf. G. H. Hofstede, Hofstede, & Minkov, 2010). According to the cultural anthropologist Edward T. Hall, culture co-occurs with communication. Culture is a "silent language" or "hidden dimension" which steers people unconsciously (cf. E. T. Hall, 1959). Difficulties in communication with members of other cultures arise from that. If one is not conscious of one's own motives, which are culturally influenced, one cannot understand the motives and actions of others (cf. Thomas, 1996). The position that is taken in this paper is that culture is a set of facts, rules, values and norms (structural conditions) representing an orientation system (cf. Thomas, 1996) established by collective programming of the mind (cf. G. H. Hofstede et al., 2010) within a group of individuals. This position is alternative to the one by which culture is rather seen as a "collection of practices" or in terms of "membership in a discourse community" (cf. Kramsch, 1998).

Cultural models describe the cultural distance, i.e. the differences between cultures and allow the comparison of them with each other (cf. Geert

Hofstede, 1984). One of the best-known cultural models is the iceberg model of culture (cf. Hoft, 1996). Only some of the attributes of a culture such as language and behavior are visible and conscious. Most of them such as beliefs and values are invisible and unconscious and hence, difficult to investigate. Cultural models help to overcome this methodological gap using cultural standards and dimensions to look beneath the water surface, i.e. to probe the unconscious areas of culture.

The organizational psychologist Alexander Thomas established the concept of "cultural standards", which expresses the normal, typical and valid attributes for the majority of the members of a certain culture regarding the respective kinds of perception, thought, judgment and action (cf. Thomas, 1996: 112). Cultural standards serve as an orientation system for the members of a group and regulate action. The individual grows into its culture by assuming and internalizing these cultural standards. This process encompasses learning basic human abilities in the social arena, control of one's own behavior and emotions, the satisfaction of basic needs, worldview, verbal and nonverbal communication and expectations of others as well as the understanding of one's role and scales for judgment.

Another key concept for describing a cultural system is that of "cultural dimension", which can serve as a basis for the identification of cultural standards (cf. Hodicová, 2007: 38). According to Hofstede, cultural dimensions are quantitative models to describe the behavior of the members of different cultures allowing the analysis and comparison of the characteristics of different groups quantitatively (cf. G. H. Hofstede et al., 2010) because the cultural imprint of cultural groups can be measured using quantitative questionnaires (cf. G. Hofstede, 1994). In my view, this can and should also be done for all other cultural dimensions in the future. They represent an aspect of a culture, which is measurable in relation to other cultures. Hence, cultural dimensions can be used to clas-

sify kinds of behavior between cultures. Cultural dimensions are indicators showing tendencies in the interaction and communication behavior of members of cultures.

There are similar concepts taking cultural aspects in HCI design into account. At least the following concepts exist:

- Intercultural HCI Design (P. Honold, 2000, K. Röse, Liu, & Zühlke, 2001, Rüdiger Heimgärtner, 2012.)
- Cross-Cultural HCI Design (A. Marcus, 2001, Rau, Plocher, & al., 2012.)
- Culture-Oriented HCI Design (K. Röse & Zühlke, 2001.)
- Culture-Centered HCI Design (Shen, Woolley, & Prior, 2006.)

Their connotations are different, which predisposes the concepts to be applied differently in diverse contexts. Intercultural HCI design means the process of HCI design in the cultural context (cf. Pia Honold, 2000b: 42-43). According to K. Röse & Zühlke, 2001, intercultural HCI design describes the user and culture oriented design of interactive systems and products taking the cultural context of the user into account with respect to the respective tasks and product usage (Kerstin Röse, 2002: 87). This approach has grown in academic literature from 1990 to 2000 and emerged from the processes of globalization, internationalization and localization of products. Localization (L10N) means the adaptation of the system to certain cultural circumstances for a certain local market, for example the adaptation of the look and feel of the user interface or the systems data structures to the culture dependent desires of the user (cf. VDMA, 2009) such as colors, layout, interaction frequency, date and currency format. Internationalization (I18N) of a product means that the product will be prepared for its usage in the desired (in the best case for all) countries (cf. International, 2003). The internationalization of

Related Content

An Evolutionary Feature Clustering Approach for Anomaly Detection Using Improved Fuzzy Membership Function: Feature Clustering Approach for Anomaly Detection
Gunupudi Rajesh Kumar, Narsimha Gugulothuand Mangathayaru Nimmala (2019). *International Journal of Information Technology and Web Engineering (pp. 19-49).*
www.irma-international.org/article/an-evolutionary-feature-clustering-approach-for-anomaly-detection-using-improved-fuzzy-membership-function/234749

A Dynamic and Adaptable Service Composition Architecture in the Cloud Based on a Multi-Agent System
Abdelhak Merizig, Okba Kazarand Maite Lopez-Sanchez (2018). *International Journal of Information Technology and Web Engineering (pp. 50-68).*
www.irma-international.org/article/a-dynamic-and-adaptable-service-composition-architecture-in-the-cloud-based-on-a-multi-agent-system/193009

Managing the Business of Web-Enabled Education and Training: A Framework and Case Studies for Replacing Blackboards with Browsers for Distance Learning
Mahesh S. Raisinghaniand David Baker (2000). *Managing Web-Enabled Technologies in Organizations: A Global Perspective (pp. 233-255).*
www.irma-international.org/chapter/managing-business-web-enabled-education/26116

Enterprise Metadata for Reliable Web Applications
R.Todd Stephens (2007). *Architecture of Reliable Web Applications Software (pp. 34-82).*
www.irma-international.org/chapter/enterprise-metadata-reliable-web-applications/5215

Semantic Reconciliation of Electronic Health Records Using Semantic Web Technologies
Karim El Guemhiouiand Steven A. Demurjian (2017). *International Journal of Information Technology and Web Engineering (pp. 26-48).*
www.irma-international.org/article/semantic-reconciliation-of-electronic-health-records-using-semantic-web-technologies/176907