

Chapter 14

Culturally Appropriate Web User Interface Design Study: Research Methodology and Results

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ABSTRACT

A number of research studies support the importance of culturally appropriate design for e-business, e-commerce and advanced learning applications. This is not surprising, considering influence of user interface design on usability, accessibility and acceptability of software. To identify cultural preferences in visual interface design, the authors conducted research studying culture-specific web interface design elements for a large number of countries all over the globe. This chapter reports on study methodology and results, focusing mostly on the global colors study. The authors explain the approach and research methodology they utilized to conduct the automated “cultural audit” for identification of culture-relevant design and color preferences in web interface design. Research methodology for a manual “cultural audit” is also discussed. The authors present the overall findings of their study, and conclude with observations on the usefulness of their research approach, the applicability of cultural analysis tools the authors developed and future research in culturally appropriate user interfaces.

INTRODUCTION

Cultural appropriateness of user interface design directly impacts on the user’s perception of credibility, trustworthiness and user acceptance of websites and results in significant economic impact. According to Forrester Consulting: “Global businesses are losing market share worth as much as \$1.6 billion

per year, or \$4.7 billion over three years, by failing to localize product information” (Devine, 2007). Research shows that there is a lack of software development tools to support culturally sensitive user interface design. Availability of such tools will aid in broadening global business opportunities for small and medium size business enterprises (SME)s and help governments to inclusively provide electronic services to all segments of population including ethnic communities and recent immigrants.

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In our research project we work on addressing the universal need in culturally appropriate user interface design that is brought up by globalization and is affecting most computer-mediated communication and, in particular, user interface design for web applications. In the background research conducted in the onset of the project, we discovered that, in spite of the wealth of information available regarding the issues related to design of international user interfaces, it is not easy for web designers and developers to acquire a deep cross-cultural understanding of user interface design. There is a number of existing cultural models and theories, which can be used to develop a set of broad cross-cultural design guidelines, similar to ones developed by Marcus and Gould (Marcus, 2000). This approach results in a mostly theoretical model of cross-cultural design, while the practical website development requires effective prototyping.

This was our motivation for the current research project where we work on development of a new approach to assist in cultural user interface design for web applications. We are building a cultural advisor tool that can aid software development teams in the quick production of the first draft of the cultural “look and feel” design including visual design elements that affect appearance of the webpage such as the choice of design colors, layout of the web page, use of white space, typography, the type and number of imagery used, etc. The design of this advisor tool is based on the extensive research utilizing data collection and analysis on a large number of websites for a number of locales. Data collection for the study was conducted using both automated and manual approaches. The study involves approximately 36,000 websites for 38 countries. This chapter addresses the research methodology we employed in both automated and manual evaluation of specific cultural markers, reports on results, focusing on the global colors study, addresses several important aspects of transferring our research results into practical implementation

of the cultural design advisor tool, and provides several exemplary scenarios of how to utilize the advisor tool for culturally-appropriate web user interface development.

BACKGROUND

With wide-spread development of online communications, we learned to appreciate that the world is rapidly becoming a global marketplace. This is especially true for web applications and services that could be accessed all over the globe. In this new global economy: “As a consequence of existing international Internet users and in anticipation of potential users, usability takes on a relevant cultural context” (Barber, 1998). The importance of culturally appropriate user interface design for web-based business and government applications is emphasized by many researchers (Becker, 2002; Del Galdo, 1996; Hornby, 2002; Smith, 2004; Sun, 2001). Specifically, it is noted by many, that the “culturability” (Barber, 1998), a combination of culture and usability in web design, directly impacts on the user’s perception of credibility and trustworthiness of websites (Fogg, 2002; Jarvenpaa, 1999; Marcus, 2000).

There is a growing body of scientific evidence that supports the importance of culturally appropriate design for web-based learning applications (Barron, 2003; McLoughlin, 1999; Pfremmer, 2004; Priutt-Mentle, 2003; Seufert, 2002). This is not surprising, considering the influence of user interface design on the usability, accessibility and acceptability of software. “Usability is the measure of the quality of user’s experience when interacting with a product or system” (Usability.gov, 2004). International Standards Association (ISO/IEC9126, 1991) defines usability as “the capability of the software product to be understood, learned, used and attractive to the user, when used under specified conditions”. Usability includes factors such as ease of learning, efficiency of use, memorability, error frequency and severity,

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