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Experience Intelligent Design
User-Interface Development
Information Visualization

Cross-Cultural User-Interface Design: For Work, Home, and On the Way

Learning objectives

Participants will learn new terms and concepts to understand culture, Geert Hofstede's dimensions of culture (power distance, individualism/collectivism, masculinity/femininity, uncertainty avoidance, and long-term orientation), and how these dimensions relate to the design of user-interface components (metaphors, mental models, navigation, interaction, and appearance). In addition we shall introduce additional dimensions that must be conducted in relation to culture (persuasion, trust, intelligence, cognition). We shall examine the practice and trade-offs of several multi-national companies' Web efforts and examine a best-of-breed set of culture dimensions derived from expert opinions

Abstract

User interfaces for desktop, Web, mobile, and vehicle platforms reach across culturally diverse user communities, sometimes within a single country/language group, and certainly across the glob. If user interfaces are to be usable, useful, and appealing to such a wide range of users, user-interface /user-experience developers must account for cultural aspects in globalizing/localizing products and services. In this tutorial, participants will learn practical principles and techniques that are immediately useful in terms of both analysis and design tasks. They will have an opportunity to put their understanding into practice through a series of pen-and-paper exercises.

Duration

Full Day Tutorial

Instructor

Mr. Aaron Marcus, President
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Tutorial details

Detailed Material Description and Allocation of Time:

Lecture 0: Introduction to instructor(s) and tutorial (15 minutes)
This period will introduce the presenter(s) and to discuss how the techniques that will be discussed fit into the user-interface development process, including an introduction to globalization/localization issues. We'll show several examples of questionable cross-cultural communication and discuss several cultural anthropological theories briefly. We'll ask for participants' own experiences in difficulties of communicating across cultural boundaries.

Lecture 1: Introduction to cultural models and examples from the Web (60 minutes)
Illustrated lectures will introduce each of Hofstede's five dimensions of culture: (power distance, individualism *vs.* collectivism, masculinity *vs.* femininity, uncertainty avoidance, and long-term time orientation. For each dimension, we shall explain the characteristics and their potential impact of work, education, and family life, and show examples of Websites from different countries, but with the same subject matter that demonstrate indigenous cultural characteristics.

Lecture 2: Applying Cultural Models to UI Design (15 minutes)
Illustrated lecture will summarize the research of Dr. Pia Honold, Siemens Corporation, in using cultural models to predict how German and Chinese consumers gain information about mobile phone usage. This information impacts the design of documentation, online help, etc. Dr. Honold's presentation shows how the results of her study generally fit the predictions, but offer some surprises, also. We shall also show portions of a case study of developing a phone for Chinese users and a portion of a video study of mobile phone users in four countries.

Lecture 3: Culture and Corporate Website Design (45 minutes)
We shall examine several major businesses and consumer Websites for multi-national corporations from several countries (USA: McDonald's, Coke; Korea: Samsung; Germany: Siemens) and discuss the apparent tradeoffs of "universal" vs. localized solution for user-interface components per culture dimensions. Hofstede's culture model was used to analyze variations in user-interface components of corporate global Website designs for approximately a dozen companies, both B2B and B2C, including Siemens, Peoplesoft, McDonalds, and Coca-Cola.

Lecture 4: Developing Best-of-Breed Culture Dimensions (45 minutes)
This lecture discusses a survey of 60 professional analysts of culture and user-interface design, which resulted in a composite set of 19 culture dimensions and the top five that emerged from the study to serve as a practical set for culture analysis of user interfaces.

Exercise 1 (30 minutes)

Each group in the tutorial will study one of approximately eight cross-cultural textual dialogues and attempt to understand the hidden cultural messages. Then, the participants will examine the explanation of what is happening between two people and report their findings and their misconceptions to the rest of the participants. Discussion will follow depending on the findings.

Exercise 2 (45 minutes)

Each group in the tutorial will study one of the cultural dimensions and analyze how this dimension might affect fundamental UI components (metaphors, mental models, navigation, interaction, and appearance). They will report to the rest of the participants on their findings. Discussion will follow depending on the findings.

Exercise 3 (45 minutes)

Each group in the tutorial will be assigned one target culture and design a home screen and one or two other screens that demonstrate awareness of the impact of culture on aspects of functions and data. The Website is intended to be a medical information Website provided by the government for its citizens. Each team will report to the rest of the participants about their intentions and their results. Where possible, comparisons will be made with actual Websites from different countries. Discussion will follow on issues that arise.

Optional Parallel Exercise 3 (45 minutes)

Each group in the tutorial will be assigned one target culture and design a home screen and one or two other screens that demonstrate awareness of the impact of culture on aspects of functions and data for a mobile device that enables users to view maps for trips. Each team will report to the rest of the participants about their intentions and their results. Discussion will follow on issues that arise.

Description of handout materials   We shall hand out the following:

- About 50 pages of lecture slides handouts (3 per page)

- About 20 pages of notes for the three exercises

- About 50 pages of reprints, including an article by AM+A that shows all of Hofstede's culture dimensions data for all countries studied as a reference and the complete text of Honold's article regarding studies of Chinese and German mobile device users.

- An updated bibliography and URL collection for culture and globalization/localization will be sent after the tutorial.

Biographies of Presenter   The following is background on the speaker:

Aaron Marcus, President, AM+A

Mr. Marcus received a BA in Physics from Princeton University (1965) and a BFA and MFA in Graphic Design from Yale University Art School (1968). He is an internationally recognized authority on the design of user interfaces, interactive multimedia, and printing/publishing documents. Mr. Marcus has given tutorials at SIGGRAPH and SIGCHI conferences, and at seminars for businesses and academic institutions around the world. He co-authored *Human Factors and Typography for More Readable Programs* (1990), *The Cross-GUI Handbook* (1994), and authored *Graphic Design for Electronic Documents and User Interfaces* (1992), all published by

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Addison-Wesley. Mr. Marcus was the world's first professional graphic designer to be involved full-time in computer graphics (1967), to program a desktop publishing system (for the AT&T Picturephone, 1969-71), to design virtual realities (1971-73), and to establish an independent computer-based graphic design firm (1982). In 1992, he received the National Computer Graphics Association Industry Achievement Award for contributions to computer graphics.

Mr. Marcus is President and Principal Designer/Analyst of Aaron Marcus and Associates, Inc., a user-interface and information-visualization development firm with more than 22 years of experience in helping people make smarter decisions faster at work, at home, at play, and on the way. AM+A), has developed user-centered, task-oriented solutions for complex computer-based design and communication challenges for clients on all major platforms (client-server networks, the Web, mobile devices, information appliances, and vehicles), for most vertical markets, and for most user communities within companies and among their customers. AM+A has served corporate, government, education, and consumer-oriented clients to meet their needs for usable products and services with proven improvements in readability, comprehension, and appeal. Working with either client R+D or marketing groups, AM+A uses its well-established methodology to help them plan, research, analyze, design, implement, evaluate, train, and document metaphors, mental models, navigation, interaction and appearance. AM+A's clients include BankInter, BMW, DaimlerChrysler, The Getty Trust, HP, McKesson, Microsoft, Motorola, NCR, Nokia, Oracle, Peoplesoft, Sabre, Samsung, Tiscali, US Federal Reserve Bank, Visa, Wells Fargo Bank, and Xerox. AM+A helped design the first user interfaces for America Online, Sabre's Travelocity, and Microsoft's ThreeDegrees.com.

Attendee Background

Intended audience: research and developers of, for example, Web-based documents and applications, telecommunications-oriented consumer products, and office/mobile productivity tools.

Level: introductory: emerging developments from research efforts that will enrich user-interface design in new directions. Note: participants may be advanced user-interface designers, but the topic may be new to them. Beginning user-interface designers will definitely benefit.

Justification for the audience

The CHI/HCI/UPA/IWIPS community has embraced interest in culture issues for the Web, mobile devices, and consumer electronics. Researchers and developers acknowledge the importance of culture in globalization/localization beyond issues of translation and user-experience that differ for products/services globally. Product and service success will depend on developers' sensitivity to the concepts and issues addressed in this tutorial. Consequently, there should be significant and continuing interest in attending a tutorial of this kind.

How tutorial will be conducted

Illustrated lectures introduce the issues of globalization, localization, and culture, then define each of the dimensions of culture and show examples from the Web. Group exercises with paper and pen provide direct experience in understanding the hidden content of cultural messages, in analyzing the impact of culture dimensions on the components of user interfaces, and in synthesizing an initial Web page design targeted for a particular culture. Participants work in teams of 5-8 people during most of the exercises.

Schedule

The following is the schedule of events and time allocations:

Time	Topic
09:00	**Tutorial begins**
09:00-09:15	Lecture 0: Introduction to Tutorial and Background of Speaker
09:15-10:15	Lecture 1: Culture Dimensions and UI Design
10:15-10:30	Exercise 1: Cross-Cultural Conversations
10:30-11:00	**Break**
11:00 11:15	Exercise 1: Cross-Cultural Conversations, continued
11:15-12:15	Lecture 1: Culture Dimensions and UI Design, continued
12:15-12:30	Lecture 2: Applying Cultural Models to UI Design
12:30-14:00	**Lunch**
14:00-14:45	Exercise 2: Mapping Culture Dimensions to UI Component
14:45-15:30	Lecture 3: Culture and Corporate Website Design
15:30-16:00	**Break**
16:00-16:45	Lecture 4: Best of Breed Culture Dimensions
16:45-17:30	Exercise 3: Designing a UI for a Culture
17:30 pm	**Tutorial ends**

Modifications

Change in materials from previous conferences include the following:

This tutorial differs considerably from the original tutorial that was first given in 2000 and has been given worldwide since then at conferences such as CHI, HCII, UPA, APCHI, NordiCHI, and IWIPS approximately 15 times to groups as large as 300 at ACM SIGGRAPH.

The lecture contents and images have been updated continually. Comparisons of culture issues in Websites over several years have been added. Two new lecture components have been added: a comparison of corporate Websites based on a 64-page case study published in 2004 and a best-of-breed culture dimensions lecture based on a conference an APCHI 2004 presentation. A new video excerpt has been added showing ethnography of mobile phone use in four contries. In addition, new handouts appear, including the case study.

Sample Materials

Upon request, more sample handout sheets are available. Please contact Aaron Marcus.

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Tutorial:
UI Design for Home, Work, and On the Way

Lecture:
Cross-Cultural User-Interface Design

Arabia On.Line

South Africa

- Many races, ethnic groups, languages
- Many challenges, but also opportunities

Example: A Present from India

Example: Food-Shopping Menus

2. Definition of Globalization

- Globalization issues and UI+IV Design:

International: Standardized, "universal;" ready for localization

Intercultural: Differences, and similarities, between two cultures

Localization: Customized, part or whole

International Issues

- Geographic, political, linguistic:

- Example: ISO CRT-color, icon, and UI standards
- Example: Canadian bilingual requirements
- Example: Currency, time, physical measurements