Presentation Summary

- Introduction and some definitions
- Culture and user-experience (UX) design: theory and practice
- Some challenges ahead: evolution and revolution

Introduction

- Modern technology and commerce permit global distribution of products, services to increasingly diverse users
- Traditional user-interface (UI) design and usability disciplines: Improve performance and productivity
- User-experience (UX) design issues: Even more complex and challenging
- Culture analysis offers a way to understand, even measure, differences and similarities of UX

Some Definitions: User Interface and Information-Visualization

- User-interface components
  - Metaphors: Essential concepts in words, images, sounds, touch
  - Mental Models: Organization of data, functions, tasks, roles, of people at work or play, static or mobile
  - Navigation: Movement through mental models via windows, dialogue boxes, buttons, links, etc.
  - Interaction: Input/output techniques, feedback
  - Appearance: Visual, verbal, acoustic, tactile
- Information visualization/sonification
  - Representations of structures and processes
  - Abstract vs. representational
  - Classical: Tables, forms, charts, maps, diagrams
  - Innovations: Hyperbolic browser, Tree maps, Table lens

Some Definitions: User-Experience (UX) Design

- Enlarged scope of objectives for products/services
  - Usability: Efficient, effective, satisfying (ISO definition)
  - Usefulness: Fits the user's needs/desires well
  - Appeal: Delight, fun, engagement, emotions, branding
- Experience covers all stakeholder “touch-points”
  - Buyer, customer, user, learner, expert, advocate, staff, investor
  - Focus on content, brand, emotions
    - Example: Apple iPod success, from zero to hero in one year
- Evaluation techniques shift
  - Ethnographic analysis, shadowing, as well as focus groups, tests
  - Underlying emotional motivations of “non-rational” customers
  - Users involved within socio-cultural context

Microsoft Applications: What’s Different in USA, China, Japan?
User-Experience Spaces: Opportunity Spaces

- I-ware = Me-ware, My-ware
- You-ware = Love-ware
- Fun-ware
- Buy-ware = Sell-ware
- Be-ware = Self-aware

Culture as a Context and Technique

- Culture interested in large-scale and small-scale group behaviors (rituals), leaders/followers, values, artifacts, signs
- Many culture models exist as bases for analysis, design, evaluation
- Culture analysis related to semiotics/semiologie, the science of signs: what do things “mean”
- Culture affects every aspect of tool-, sign-making
- Culture-centered design seems “inevitable”

UX Development Process + Culture and Globalization Awareness

- Plan: brainstorming information sonification
- Research: technology, design issues, strategies
- Analyze: user profiles, use scenarios, prototypes
- Design: content, applications, brand, storytelling
- Implement: scripting, coding, final production
- Evaluate: focus groups, user tests, heuristic evals.
- Document: guidelines, patterns, specifications
- Train: courseware, tutorials, mentoring
- Maintain: continuing client relations

Culture-Centered Design

- Designers aware of culture
- “Meaning” derives both from the designer and what the user brings to the artifact
- In era of instant, global media, cultures are always being affected and evolving
  - Remember: Chinese culture was not always “Confucian”
  - Remember: USA golf sport imported to Japan is more like a religion
- Designers cannot escape being biased culturally
- All designed artifacts are cultural objects

The Web: an Example of Culture-Centered UX Design

- Immediate global communication, interaction, and UX
- Web = Cultural artifact
- Localization issues far beyond translation

Should every Website look like this?
Lecture: Cross-Cultural User-Experience Design

Speaker: Aaron Marcus, President, AM+A

Which Website for Saudi Arabia is Better?

“Saudi king tells newspapers to not run photos of women.”

Arabia On.Line

Original

Revised

Yahoo.com vs. Maktoob.com

- 165m (04): Most in world
- 4m (05): Most in Arab World

Examples: South Africa, India

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

International/Intercultural Issues, 1/3

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

International/Intercultural Issues, 2/3

- Religious, historical, aesthetic:
  - Example: Calendars, “Le weekend” = Thu/Fri in some Moslem states
  - Example: Color/type/signs/terms

[Wall Street Journal, 21 Jan 04, p B7]
Lecture: Cross-Cultural User-Experience Design

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International/Cultural Issues: Color Sets, 3/3

- Sacred Colors
  - [Color swatches]

- High- vs. Low-Chroma Colors
  - [Color swatches]

Example: Flag’s Colors Refer to Cultures, Religions, Histories

Example: Aesthetic Differences of Dionysus/Apollo

- Cultural preferences exist for color, layout, textures, and patterns
- Europe/USA/Chinese/Japanese/Indian architecture, painting, sculpture exhibit typical preferences
- Traditional vs. popular styles:
  - Japan: Highest = B+W, asymmetric balance
- Specific attitudes: Body parts, Harel, Prabhu research in China, Japan [IWIPS99 Proc.]

In Korea red is an unlucky colour.

Localization

- Small-scale communities with preferred jargon, signs, rituals:
  - Affinity group example: USA Saturn owners
  - Social group example: Japanese housewives
  - Web group example (geo-dispersed): MP3.com
  - Not lifestyle groups: Clausen, Faded Mosaic, 2000
  - Resources: LISA, Hoft, Sapient.com, etc.

Business Challenges: How to Account for UX and Culture?

- Determine optimum characteristics: Relies on market and user data
- Assist and appeal to target markets: Achieves short-term and long-term success
- Avoid too many variations: Wastes time and money

Culture Models and Culture Dimensions

- Ruth Benedict, Patterns of Culture, 1939
- Kluckhohn/Strodtbeck’s value orientations: human nature, nature, time, doing/being, human relations
- David Victor: Cultural features
- Edward Hall: Context, time, proxemics (space)
- Fons Trompenaars (inc. Parson’s Pattern Variables, Riding the Waves of Culture): language, time
- Geert Hofstede: 5 Culture dimensions
Geert Hofstede’s Cultural Dimensions

- Cultures and Organizations: Software of the Mind, Geert Hofstede, McGraw-Hill, 1997
- Hofstede examined IBM employees in 50 countries, 1978-83; analyzed statistical data
- Culture: Patterns of thinking, feeling, acting programmed by a particular group, not “refinement of the mind,” civilization
- Differences of cultural manifestations: rituals, symbols, heroes/heroines, values

Hofstede’s 5 Dimensions of Culture

- Power-distance
- Collectivism vs. individualism
- Femininity vs. masculinity
- Uncertainty avoidance
- Long- vs. short-term orientation

Power Distance (PD)

- Extent to which less powerful members expect, accept unequal power distribution
- High PD countries
  - Centralized power in few hands; tall hierarchies
  - Ideal boss = benevolent autocrat, good father
  - Subordinates expected to be told what to do
- Low PD countries
  - Subs and Supers consider each other equals
  - Changeable roles; decentralized, flat hierarchy

Implications for Global UX Design: Examples for High Power Distance

- Structured, guided access to information
- Emphasis on larger social/moral order (e.g. nationalism/religion brought into Web context)
- Focus on expertise (authoritative content) and leaders (rather than customers/employees)
- Integrated security, unhidden “restrictions”
- Importance of certifications, awards, logos
- Social role used to organize information (e.g. special managers’ sections)

Examples of PD Index (PDI) in Web

Contrasting University Websites:
- Malaysia (PDI rating of 104; highest in Hofstede’s index)
  - www.uum.edu.my (Universiti Utara Malaysia)
- Netherlands (PDI = 38; 40/53)
  - www.tue.nl (Technische Universiteit Eindhoven)

Examples: University Home Pages
**Examples: University Home Pages**

- TUE

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**Individualism vs. Collectivism**

- **Individualism**: Ties between individuals loose: everyone expected to look after one’s self or his/her immediate family (nuclear families)

  - Samsung ads: appealing to egotists

- **Collectivism**: People from birth integrated into strong, cohesive in-groups, which continue to protect them in exchange for unquestioning loyalty (extended families)

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**Power Distance vs. Individualism-Collectivism**

- **Individual**
  - USA
  - Germany
  - Finland
  - Israel

- **Collective**
  - Japan
  - Brazil
  - Korea
  - Mexico
  - Singapore
  - Costa Rica

**Individualism Index**

- Low
- High

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**Examples of Individualism vs. Collectivism**

- **Work**
  - Individual: Personal time, freedom, challenge, external motivation, material rewards
  - Collective: Training, physical conditions, use of skills, internal motivation

- **Family**
  - Individual: Honesty/truth, talking, guilt, self-respect
  - Collective: Harmony, not talking, shame, losing face

- **Education**
  - Individual: Private schools
  - Collective: Public schools

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**Key Differences: Individualism vs. Collectivism**

- **Individualism**
  - Individual social/economic interests dominate
  - Right to privacy: private opinions expected
  - Strong political power of voters: greater press freedom
  - Ideology of freedom, self-motivation

- **Collectivism**
  - Collective social/economic interests dominate
  - State dominates economy, press
  - Consensus = ultimate goal
  - Ideology of equality, harmony

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**Implications for Global UX Design**

- **Individualism**
  - Focus on maximizing personal achievement
  - Materialism and consumerism demonstrate individual success
  - Controversial speech and extreme claims encourage “truth”
  - Images of youth/activity, rather than age/wisdom/“being”

- **Collectivism**
  - Individual roles downplayed (e.g., just product): group focus
  - Preference for socially supportive and constrained claims
  - Controversy discouraged: tends to divide people
  - Respect for tradition (historical focus)
Examples of Individualism/Collectivism on the Web

- **Individualism**: United States (IDV = 91; highest rating)
  - [www.nps.gov/glba/evc.htm](http://www.nps.gov/glba/evc.htm) (Glacier Bay National Park)
- **Collectivism**: Costa Rica (IDV = 15; 46/53)

**Examples: Website Home Pages**

- **Electronic Visitors Center**

**Gender: Femininity vs. Masculinity**

- Traditional Gender Roles (not physical differences)
  - Men: Assertive, competitive, tough
  - Women: Home/children, people-oriented, tender
- Hofstede's Culture Definition:
  - Masculine: roles distinct; feminine: roles overlap

**Masculinity Index Values for Selected Countries**

- 95 Japan
- 79 Austria
- 62 USA (South Africa 63)
- 53 Arab countries (inc SA)
- 47 Israel
- 43 France
- 39 South Korea
- 05 Sweden

[Time, 12 Apr 04, p23; The Hindu, 28 Mar 04, p1]

[Time, 26 November 2007, pp. 8-9]
Lecture: Cross-Cultural User-Experience Design

Speaker: Aaron Marcus, President, AM+A

Power Distance vs. Masculinity

<table>
<thead>
<tr>
<th>Low</th>
<th>Power Distance Index</th>
<th>High</th>
</tr>
</thead>
<tbody>
<tr>
<td>Austria</td>
<td>- Japan</td>
<td>USA</td>
</tr>
<tr>
<td>- Italy</td>
<td>South Africa</td>
<td></td>
</tr>
<tr>
<td>- Singapore</td>
<td>South Korea</td>
<td></td>
</tr>
<tr>
<td>- Finland</td>
<td>- Norway</td>
<td>- Sweden</td>
</tr>
</tbody>
</table>

Masculine (achievement)
- Earnings
- Recognition
- Advancement
- Challenge

Feminine (relations)
- Manager: Good working relation with direct supervisors
- Cooperation: Work with people who cooperate well
- Living area: Live in desirable location for one’s self and family
- Employment security: Physically safe and be able to work for as long one wishes

Traditional Work Goals

Implications for Global UX Design

Masculine
- Traditional gender/family/age distinctions emphasized; work tasks/roles given preference
- Mastery most important; Websites designed for exploration, control
- Artwork may be utilitarian/instrumental

Feminine
- Gender/work roles blurred
- Mutual exchange and support more important than master
- Website task-oriented and provide quick results for limited task
- More emotional/aesthetic appeal

Examples of Masculinity/Femininity on the Web

Gender-oriented sites:
- Masculinity: Japan = 95 (highest MAS)
- woman.excite.co.jp - women’s site
- www.isize.com/top - site for young adults
- USA = 52 (15/53)
- www.chickclick.com
- Femininity: Sweden = 5 (lowest of 53 nations)
- se.excite.com

Excite/Japan for Males, Females

Excite/Japan for Males, Females
**Uncertainty Avoidance**

- Feeling threatened by uncertain/unknown
- Fear/risk vs. anxiety: Known vs. unknown
- Countries vary in formality, punctuality, certainty requirements
- Extreme uncertainty creates intolerable anxiety; law, religion seek to reduce it
- Intolerance of ambiguity

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**Examples of Uncertainty Avoidance on the Web**

**Airline Companies:**

- **Belgium** = 94 (5+6/53)
  - www.sabena.com

- **UK** = 35 (47/53)
  - www.britishairways.com

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**Implications for Global UX Design: High UA**

- **High**
  - Keep it simple
  - Reveal results/implications of actions
  - Make attempt to prevent looping/becoming "lost in cyberspace"
  - Use constraints/task animations/models to reduce "user error"
  - Carefully encode meaning through multiple redundant cues

- **Low**
  - Complexity and risk more valued: less protection from failure
  - Less controlled navigation: Links may open windows, change site
  - Help system focuses on information; task orientation secondary
  - Coding of color/shape/texture cues used to maximize information; need not be so redundant

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**Examples: Airline Home Pages**
Examples: Airline Home Pages

What Happens Over Time? Airline Home Pages Change...But...

Comparison of UA for 2003 Airline Websites

- **Inside** travel booking pane
  - Sabena, Belgium: 19
  - British Airways, United Kingdom: 16
- **Outside** the travel booking pane
  - Sabena, Belgium: 23
  - British Airways, United Kingdom: 43
- Culture differences survive design improvements!

Long- vs. Short-Term Time Orientation: Confucian Dynamism

- Stable society requires unequal relations
- Family is prototype of all social organizations
- Virtuous behavior to others = not treating others as one would not like to be treated
- Virtue one's task in life = trying to acquire skills and education, working hard, being frugal, being patient, **persevering**
- Practice oriented, not belief (truth) oriented

Long-term orientation (LTO) Ranking for Some of 23 Countries

- 01 China
- 04 Japan
- 17 USA
- 22 Nigeria
- 23 Pakistan

Implications for Global UX Design: Long-Term Orientation

- Practice more important than theory
- Accomplishing the task sufficient; expertise not required
- Personal network provides resources for achievement (cf. Chinese **Guanxi** principle)
Examples of Long/Short-Term Time Orientation on the Web

Siemens:
- **Germany** = 31 (14/23)
  - www.siemens.com/de
- **China** = 118 (highest LTO)
  - www.siemens.com.cn

Summary: China vs. Germany

- **Germany**
  - Design that is appropriate just for now (will be outdated in a certain amount of time)
  - Concentration on just showing task or product
  - Function, mastery, organization-oriented
- **China** (Long-term time orientation):
  - Soft focus
  - Warm, fuzzy images
  - Timeless, classic design
  - Emphasis on people images

Cautions with Hofstede’s Culture Model

- Old data, pre-post-modern (no emphasis on media, sociology of culture, politics of culture)
- Corporate subjects only
- Assumes one culture per country
- Assumes fixed, unchanging relationships
- Gender roles, definitions debatable
- Seems too general, stereotypical
- Nevertheless: use widespread

How to Work with Cultural Models: Examples from China and Germany

- **Honold, Pia**
  - “Learning How to Use a Cellular Phone: Comparison Between German and Chinese Users,” Jour. STC, Vol. 46, No. 2, May 1999, pp. 196-205. (now Pia Quaet-Faslem)
- **Lee, Ook**
- **Choong and Salvendy**
Websites Analyzed

- Used Hofstede, but could have used other models
- “Mature” company Websites with parallel content in multiple countries
- Consumer (B2C) and business-to-business (B2B) sites

<table>
<thead>
<tr>
<th>Component</th>
<th>US</th>
<th>EU</th>
<th>Asia</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business</td>
<td>SAP</td>
<td>Siemens (SIE)</td>
<td>Hitachi (HT)</td>
</tr>
<tr>
<td>Consumer</td>
<td>McDonald’s (McD)</td>
<td>IKEA (KE)</td>
<td>Sony (SON)</td>
</tr>
<tr>
<td></td>
<td>Coca-Cola (CO)</td>
<td>Mercedes (MERI)</td>
<td>Mazda (MAZ)</td>
</tr>
</tbody>
</table>

Cross-Cultural Matrix: UI Components vs. Culture Dimensions

- Hofstede Culture Dimension: Power Distance (PD)

<table>
<thead>
<tr>
<th>Low PD</th>
<th>High PD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Images of people, groups; daily activities; popular music; symbols, typefaces, layouts, colors; informal speech</td>
<td>Images of leaders; national/corporate/government themes, slogans, insignia, logos, symbols, typefaces, layouts, colors, official music, anthems; formal speech</td>
</tr>
</tbody>
</table>

Example: Power Distance vs. Metaphors

- Siemens Website: Personal images vs. official buildings
- Netherlands (PD 38) Malaysia (PD 104)

| Metaphor for “Home”: the face / eyes of a person | Metaphor for “Home”: an official building |

Example: Power Distance vs. Navigation

- Sapient Website: amount of options provided
- Germany (PD 35) India (PD 77)

| Open access, multiple options | Restricted access and choices, prescribed routes |

Example: Femininity/Masculinity vs. Appearance

- Mercedes Benz Website: Use of “soft” design
- Sweden (MAS 5) Germany (MAS 66)

| Softer edges and shapes | Clear structure, no cuteness |

Patterns found

- All countries with no picture on the front page have low PD value.
- The eight countries with the highest PD value show a picture of a male person.
Lecture: Cross-Cultural User-Experience Design

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Collectivism vs. Individualism Patterns

- Patterns found
  - The “Individualism” of the pictures at the PeopleSoft Website increases with the amount of IDV value
  - The arrangement of the pictures of the low IDV countries is very symmetrical.
  - Among the 15 lowest rated countries regarding IDV, there are no people shown on the Siemens localized Website imagery, but one can find images of people in those countries that have a higher ID.

AM+A Studied Other Models: Best-of-Breed Culture Dimensions

- Surveyed: 11 Authors in 9 Sources
  - Adler, Nancy J.
  - Condon, John C.
  - Hall, Edward T.
  - Hofstede, Geert
  - Kluckhohn, F. R.
  - Parsons, Talcott
  - Strodtbeck, Fred
  - Trompenaars, Fons
  - Victor, David A.
  - Wright, Quincy
  - Yousef, Fathi S.

- Published survey
  - Marcus, Baumgartner, APCHI 2004 Proceedings, Summary

29 Dimensions in 9 Sources

- Achievement vs. ascription
- Activity orientation
- Affective vs. neutral
- Authority conception
- Context
- Degree of power
- Economic progress
- Experience of technology
- Face-saving
- Gender roles
- Human nature orientation
- Individualism vs. collectivism
- Instrumental vs. expressive
- Internal vs. external control
- International trade, community
- Long vs. short time orientation
- Meaning of life
- Non-verbal communication
- Political decentralization
- Power distance
- Property
- Resources
- Space
- Specific vs. diffuse
- Technological development
- Time orientation
- Time perception
- Uncertainty avoidance
- Universalism vs. particularism

Best-of-Breed Dimensions Based on Surveying 57 experts

- Context
- Technological development
- Uncertainty avoidance
- Time perception
- Authority conception

- All others ranked, for use when time, money, circumstances permit further analysis

Where do We Go from Here in Thinking about Cultural UX?

- Alternate models: Redo studies using them
- Rethink development steps, e.g., evaluation
- Rethink UI components, e.g., metaphors
  - New approaches proposed for China, India
- Rethink platforms, e.g., mobile devices
  - Sony-Ericsson Wukong with Guanxi; new Chinese metaphors
- Consider additional sources of insight
- Educate corporations/professions/users re culture
  - UN Bookstore: no books on culture models, only tourist interest
  - Many studies, theories, books do not include culture

UX Evaluation and Culture: How does Culture affect...

- User profiles (personas) and scenarios?
  - Culturally appropriate people, tasks, stories
- Testing, questionnaires?
  - Culturally appropriate people, tasks, test environments, questions, techniques
- Video monitoring and ethnographies?
  - Culturally appropriate persons, inquiries, behaviors, environments
- Measurement of objective and subjective “facts”
  - Culturally appropriate collection, emotional reactions
- What about Web 2.0? Social network sites?
Challenges to the Classic Culture Models

- Ethnographic approaches
  - Local groups, behaviors, "situated practice," action-oriented

- Post-modernism, media studies, sociology of culture, production of culture, politics of culture
  - Critique of sociological phenomena, e.g., power, inequality, social construction of technology, other patterns of social organization
  - Michèle Lamont, Princeton Univ., contemp. sociological theory: http://www.princeton.edu/~sociolog/grad/courses/fall1995/soc502.html. Towns in two countries more similar than town to city in each country or two cities to each other.
  - David Brain, New College, Florida, sociology of culture course: http://www.ncf.edu/brain/courses/culture/culture_syl05.htm

Additional Sources of Insight into UX and Culture

- Persuasion
- Trust
- Intelligence
- Personality
- Cognition

Cultural UX Issues to Consider: What do You Think?, 1a/3

- Are basics of usability culture-biased? Efficiency, productivity, simplicity, usefulness...for what?
- How can culture models be added to theories of utility, sociability, community, entertainment, design?
- How map UI components to culture dimensions?
- How can corporations and organizations include more cultural theory in development process?

Cultural UX Issues to Consider: What Do You Think? 1b/3

- How does culture affect Web 2.0, social network, and blog-related products/services?

Cultural UX Issues to Consider: What do You Think?, 2/3

- Interaction styles: informal vs. formal, harmony vs. honesty, sincerity vs. scheming?
- Conflict: Frequent vs. seldom? Chatroom flaming OK? Clashing opinions OK?
- Would you send your virtual representatives on vacation (see Korea)?
Cultural UX Issues to Consider: What Do You Think?, 3/3

- What attitudes toward advertising or privacy? Personal Webcams OK?
- Should there be different men, women sites/apps?
- Is management training biased to individualism?
- Are SMS messages impolite? (see India, think [Bangalore Times, 30 Mar 04, p1])

Your Actions will make the Future: Evolution or Revolution

- Computer-mediated communication and interaction occurs in a culture context
- UX development must account for culture
- Models, methods exist; many research issues
- Design professionals cannot ignore the issues
- Future development of tools, templates, treasure chests of patterns, body of knowledge

Body of Knowledge: Resources

- ACM/SIGCHI: chi-intercultural@acm.org, www.HCIbib.org/SIGCHI/Intercultural
- AIGA/Center for Cross-Cultural Design: http://www.xcd.aiga.org
- American Anthropological Association's Internet Resources: http://www.aaanet.org/resinet.htm
- AM+A URL and publication list

A Challenge: Bone vs. Bottle

Concept by Donald Day
IWIPS 1999
Email: d.day@acm.org