

Internasionalization and Accessibility



Internasionalization

- Today the Internet and the market for software are global. They cross endless cultural and language boundaries, each with its own **requirements, conventions, customs, and definitions of acceptability**.
- Comprehension and recall can be enhanced when presented information is **culturally appropriate** (Spyridakis and Fukuoka, 2002).
- To make a product acceptable worldwide, it must be internationalized. A system must also be designed to be usable by an almost unlimited range of people, being accessible to anyone who desires to use it. The design concepts used to achieve these goals are called **internationalization** and **accessibility**.



Today's Topics

International considerations

- Localization
- Cultural considerations
- Writing text
- Using images and symbols

Accessibility considerations

- Types of disabilities
- Designing for accessibility

Localization

- When to do it:
 - When the market includes few or no English speakers.
 - When translation is required by law or by custom.
 - When the widest possible market is desired.
- When not to do it:
 - When the audience already reads English.
- When the cost of retrofitting or rewriting the software is prohibitive.



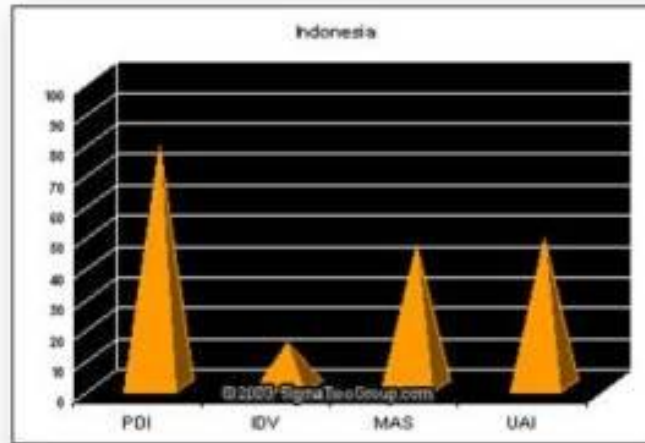


Cultural Considerations

Hofstede (1980, 1997, 2001) has derived and validated five independent dimensions along which cultures vary:

1. **Power distance** is the degree of acceptance of inequality of power and authority
2. **Individualism (vs. collectivism)** reflects how well integrated a person is into the larger group.
3. **Masculinity (vs. femininity)** is the balance between assertiveness or toughness and supportiveness or caring.
4. **Uncertainty avoidance** is the level of discomfort with unstructured and potentially unpredictable conditions.
5. **Long-term orientation (vs. short term)** is the trade-off between long-term reward and immediate recognition.

Indonesia



- PDI(78)→ a high level of inequality of power and wealth within the society.
- UAI(48) → more moderated influence of this Dimension within the Indonesian society. In an effort to minimize or reduce this level of uncertainty, strict rules, laws, policies, and regulations are adopted and implemented.
- IDV (14) → the Indonesian society is Collectivist as compared to Individualist.

Words and Text

- Use very simple English
- Avoid
 - Acronyms and abbreviations
 - Slang or obscure phrasing
 - Local or computer jargon
 - A telegraphic/ over friendly writing style
 - Culturally specific examples.
- Adhere to local user language idioms and cultural contexts
- Keep the original term for words that cannot be translated
- Allow additional screen space for the translation
- Position icon captions outside of the graphic
- Modify mnemonics for keyboard access
- Adhere to local formats for date, time, money, measurements, addresses, and telephone numbers



Images and Symbols

- Adhere to local cultural and social norms
- Use internationally accepted symbols
- Develop generic images
- Be particularly careful with
 - Religious symbols (crosses and stars)
 - The human body
 - Women
 - Hand gestures
 - Flags
 - Controversial geographic maps
 - The cross and check for check boxes
- Review proposed graphical images early in the design cycle

Color, Sequence, and Functionality

- Adhere to local color connotations and conventions
- Provide the proper information sequence
- Provide the proper functionality
- Remove all references to features not supported



Cultural Color Associations

	RED	YELLOW	GREEN	BLUE	WHITE
China	Happiness	Birth Wealth Power	Ming Dynasty Heavens Clouds	Heavens Clouds	Death Purity
Egypt	Death	Happiness Prosperity	Fertility Strength	Virtue Faith	Joy
France	Aristocracy	Temporary	Criminality	Truth Freedom Peace	Neutrality
India	Life Creativity	Success	Prosperity Fertility		Death Purity
Japan	Anger Danger	Grace Nobility	Future Youth Energy	Villainy	Death
United States	Danger Stop	Cowardice Caution	Safety Go	Masculinity	Purity

Requirements Determination and Testing



- Establish international requirements at the beginning of product development
- Establish a relationship within the target culture
- Test the product as if it were new

Accessibility

- Accessibility means a system must be usable by an almost unlimited range of people
- Design objectives in creating accessibility for users with disabilities are:
 - Minimize all barriers that make a system difficult, or impossible, to use.
 - Provide compatibility with installed accessibility utilities.
- Types of disabilities:
 - Visual → reduced visual acuity to total blindness.
 - Hearing → inability to detect certain sounds to total deafness.
 - Physical movement → difficulties in, or an inability to, perform certain physical tasks such as moving a mouse, or accurately striking a single keyboard key.
 - Speech or language → difficult to read and write
 - Cognitive → memory impairments and perceptual problems.
 - Seizure disorders → sensitive to visual flash rates, certain rates triggering seizures.

Accessibility Design

- Consider accessibility issues during system planning, design, and testing.
- Provide compatibility with installed accessibility utilities.
- Provide a customizable interface.
- Follow standard Windows conventions.
- Use standard Windows controls.
- Assure online forms can be easily completed.



Visual Disabilities

- Ensure compatibility with screen-review utilities and screen-enlargement utilities
- Screen components:
 - Include meaningful screen and window titles.
 - Provide associated captions or labels for all controls, objects, icons, and graphics.
- Include graphical menu choices.
 - Provide a textual summary for each statistical graphic.
 - Allow for screen element scalability.
 - Support system settings for high contrast for all user interface controls and client area content.
- When a high contrast setting is established, hide any images drawn behind the text to maintain screen information legibility.
- Avoid displaying or hiding information based on the movement of the pointer. Exception: Unless it's part of the standard interface (example: ToolTips).

Visual Disabilities ..

- Keyboard:
 - Provide a complete keyboard interface.
 - Provide a logical order of screen navigation.
- Color:
 - Use color as an enhancing design characteristic.
 - If used, considers
 - color combinations
 - lightness contrast between foreground and background color
 - lightness contrast between colors in the color spectrum (blues and reds)
 - Avoid combining dark colors from the middle of the spectrum with light colors from either end of the spectrum
 - Do not define specific colors
 - Use tools to verify what colors will look like when seen by color-deficient people



Hearing Disabilities

- Provide captions or transcripts of important audio content.
- Provide an option to display a visual cue for all audio alerts.
- Provide an option to adjust the volume.
- Use audio as an enhancing design characteristic.
- Provide a spell-check or grammar-check utility.

Physical Movement Disabilities



- Provide voice-input systems
- Provide a complete and simple keyboard interface
- Provide a simple mouse interface
- Provide on-screen keyboards
- Provide keyboard filters

Cognitive Disabilities



- Permit modification and simplification of the interface.
- Limit the use of time-based interfaces.
 - Do not briefly display critical feedback or messages and then automatically remove them.
 - Provide an option to permit the user to adjust the length of the time-out.

Seizure Disorders



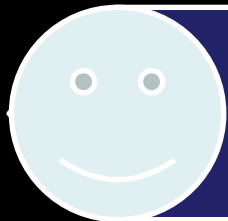
Use elements that do not blink or flicker at rates between frequency ranges of 2 Hz and 55 Hz.



Minimize the area of the screen that is flashing.



Avoid flashing that has a high level of contrast between states.

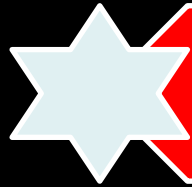


Provide an option to enable users to slow down or disable screen flashing.

Web Page Accessibility Design

- WWW Consortium Accessibility Guidelines:
 1. Provide equivalent alternatives to auditory or visual content
 2. Don't rely on color alone. Image should be understandable
 3. Use markup and style sheets and do so properly
 4. Clarify natural language usage
 5. Create tables that transform gracefully
 6. Pages featuring new technologies transform gracefully
 7. Ensure user control of time-sensitive content changes
 8. Ensure direct accessibility of principles of embedded interfaces
 9. Design for device-independence
 10. Use interim solutions
 11. Use W3C technologies and follow accessibility guidelines
 12. Provide context and orientation information
 13. Provide clear navigation mechanisms
 14. Ensure that documents are clear and simple

Usability for Lower-Literacy People



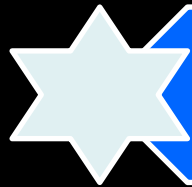
Prioritize information



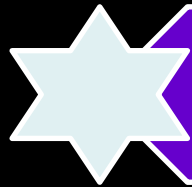
Avoid moving or changing text



Streamline the page design



Simplify navigation

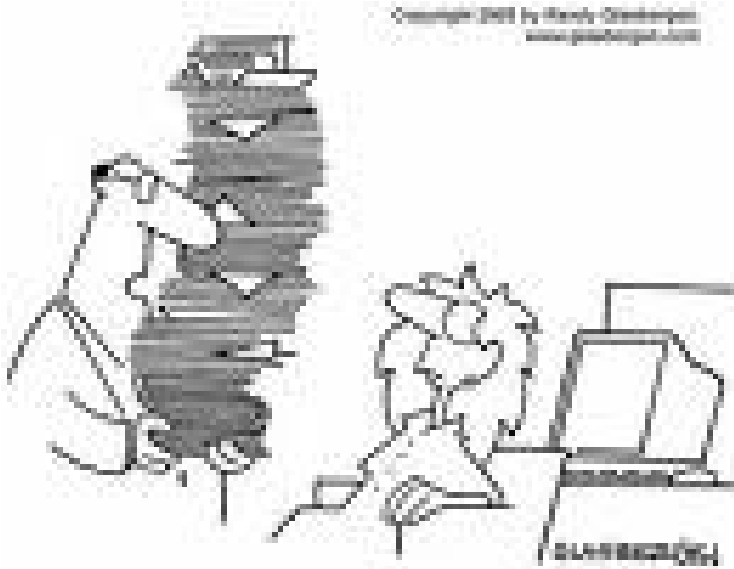


Optimize search

Usability for Senior Citizens

- Provide large targets to make selection easier
- To reduce the number of selections or clicks,
 - Do not require double-clicks or pull-down menus
 - Do not have a deep page hierarchy.
- Concentrate important information at the top of pages.
- Avoid the need to scroll to find information.
- Put most links in a bulleted, not tightly clustered, list.
- Provide differentiation between visited and non-visited links.
- Use few colors, and avoid using blue and green tones.
- For text to be read or scanned, use
 - 12 to 14 point sans serif font (Helvetica, Arial).
 - Black text on a white background, left justification.
 - Increased spacing (leading) between lines.
 - Sentence style mixed-case letters rather than all capital letters.
 - Appropriate large headings in a 14 to 16 point sans serif font.

Documentation



- Provide documentation on all accessible features
- Provide documentation in alternate formats
- Provide online documentation for people who have difficulty reading or handling printed material

Testing



Test all aspects of accessibility as part of the normal system testing process

धन्यवाद

Hindi

多謝

Traditional Chinese

ขอบพระคุณ

Thai

Спасибо

Russian

Terima Kasih

Gracias

Spanish

Thank You

English

شكراً

Arabic

Merci

French

Obrigado

Brazilian Portuguese

Grazie

Italian

多谢

Simplified Chinese

Danke

German

நன்றி

Tamil

ありがとうございました

Japanese

감사합니다