

Design Considerations for Web Accessibility

What is accessibility?

Accessibility is defined as "*Development of information systems flexible enough to accommodate the needs of the broadest range of users. . . Regardless of age or disability*".

- Cynthia D. Waddell -

Web accessibility audience

- **Visually impaired**
- **Hearing impaired**
- **Mobility impaired**
- **Cognitive impaired**
- **Slow internet access**
- **Mobile device**

Assistive tools for VIP

Screen reading software

- For serious VIP
- Cannot handle graphics
- Read objects one-by-one in serial manner
- Trigger screen reader when refreshing web page

Screen Magnification software

- For low vision VIP
- Can view only a small portion of a screen

WCAG 2.0 Guidelines

- **Perceivable**
- **Operable**
- **Understandable**
- **Robust**

Removing web accessibility obstacles

Image maps, Graphical Links, Pictures, Diagrams, ...

- Provide alt text attribute
- Use empty alt text for decorative image
- Use proper text description
- Provide separate data table for charts and diagrams

Removing web accessibility obstacles

Video, Animation and Flash

- Video
 - Provide video description
 - Provide sound clip, subtitle, text script
- Flash content
 - Refer to Adobe and WCAG accessibility standard
 - Provide alternate text navigation
- Animation effects
 - Avoid auto page refresh
 - Avoid blinking and flickering contents
 - Provide mechanism to view or pause scrolling contents

Removing web accessibility obstacles

Font and color

- Use relative font size
- Use hexadecimal or RGB number
- Use high contrast color
- Avoid using color for navigation
- Avoid background with patterns or images

Removing web accessibility obstacles

Electronic forms

- Provide accessible PDF format
- Provide labels and instructions for user input fields
- Provide suggestions for errors

Removing web accessibility obstacles

Understanding web page contents

- Provide alternate language switching links
- Use proper headers structure
- Use simple data table and give proper headings
- Avoid using jargons

Removing web accessibility obstacles

Navigating web page

- Maintain consistency in all pages
- Provide appropriate navigation links
- Ensure operations are device independent

ARIA

- Accessible Rich Internet Application is a W3C protocol for enhancing and supporting accessibility of scripted and dynamic content
- Supported only by up-to-date browsers, screen-readers and script libraries
- Screen-readers obtains more details of the page elements by referring to Aria-roles and states
- Major features of ARIA
 - Accessible Interactive controls
 - Content role for Identifying page structure
 - Access to dynamically update contents



Web accessibility evaluation tools

- Not all web accessibility aspects can simply be mechanically assessed
- Like spell-checking a document, it takes a human to make the final decision on the correctness of each word
- It is recommended that evaluation to be conducted in two phases:
 - Automatic checker
 - Human tester

Conclusion

- Making web pages accessible to all can be simple
- A highly accessible web page can be attractive, dynamic and interactive
- Adoption of universal design is encouraged
- Good accessibility is beneficial to all

Questions?

Thank you!