

First Principles of Web Accessibility

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head, London Oct 2008

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Web accessibility

- Making web content accessible
- To people with disabilities
- Perceivable, Operable, Understandable, Robust

Web accessibility in context

- Protecting social and civil rights
- Participation in online society
- Personal independence

Accessibility side-tracked

- Forgetting about real people
- Too technology focused
- Too legal focused
- Mistaking it for universality

Web accessibility and Technology

- Web accessibility is not about technology
- Technology is a means to an end

Beware of the techno-babble

- Microformats date-time pattern:
- `<abbr title="2008-10-26T19:32:25+05:00">an hour ago</abbr>`
- ISO8601: date-time format

Microformats date-time

- „I get most frustrated when the ISO date time format is referred to as 'gibberish' when in fact it's quite the opposite. The irony of the whole thing is that the ISO format is the most accessible way of publishing date information that I can think of. It's international and completely unambiguous.“

Microformats date-time

- Screenreaders struggle:
- „two zero zero eight one zero two six nineteen thirty two five o'clock"
- „one hour ago"
- Which one is more understandable?
- Not the ISO format!

Beware of the journalist babble

- David Berlind on Target lawsuit
- „Why a landmark court case could force you to redo your whole Web site“
- Poor web developers, so hard done by
- Mangled explanation of accessibility fixes

Target lawsuit

- Target corporation
- National Federation of the Blind
- Lawsuit for inaccessible website
- After months of failed negotiation
- Target refused to fix the problems

Target accessibility fixes

- Text equivalents for active images
- Keyboard focusable/activatable buttons
- Skip navigation links
- Label form fields properly

Target accessibility fixes

- alt="Men's accessories"
- onclick="this.onmousedown()"
- Skip to main content
- <label for='name'>Name</label>

Target process

- Paid three years of legal fees
- Reached settlement
- Paid \$6 million compensation
- Make the fixes NFB asked for

Target process

- Makes so much business sense
- (No, not really)
- \$6 million = payment for being an idiot
- Lawyers laughing all the way to the bank

Road to madness

- Techno babble
- Journalist babble
- Working in every browser

Web accessibility and humans

- Compensating for human limitations:
 - Sight
 - Sound
 - Cognitive
 - Mobility

What does accessibility mean?

- Content / User Interfaces are:
 - Perceivable
 - Operable
 - Understandable
 - Robust

Limits of web accessibility

- Accessible web content:
 - is not enough
- Accessibility needs to be end to end
- From web content to people

Holistic view of accessibility

- Web Content
- Browser
- Operating System
- Assistive Technology
- User

Accessible Web Content

- Content has to be accessible
- Trust that other layers:
 - Work properly
 - Do not create a barrier
- Contract of Trust

Browser

- Reads the web content
- Renders it by talking to the Operating System
- Reacts to operating system messages
 - Mouse/Keyboard inputs
 - Operating system events

Operating System

- Manages communication between:
 - Applications
 - Input Devices
 - Output Devices
 - Interfaces (e.g. MSAA)

Assistive Technologies

- Converses with MSAA
- Operating system based
- Browser based
- Web content based

Examples of Assistive Technologies

- Screen reader
- Screen magnifier
- High Contrast Theme
- Font resize
- Zoom layout
- Flash block

WAI-ARIA

- Interface used by web content
- Simulates existing OS widgets
- Implemented in browsers
- Screen Readers see illusion

Accessibility Guidelines

Accessibility Guidelines:

- Web Accessibility Initiative
- WCAG & ATAG: Web content
- UAAG:
 - Browsers
 - Operating Systems
 - Assistive Technology

Dealing with web content

- Accessible web content is:
 - Perceivable
 - Operable
 - Understandable
 - Robust

Perceivable

- Content presented in a way that can be perceived
 - Can a screenreader user hear it?
 - Can a hearing impaired person see it?
 - rendered on a refreshable braille display?
 - Can it be seen by colour-blind people?

(P) Invisible links

- ``
- CSS background image, height, width

(P) Invisible links

- ``
- CSS background image, height, width
- Not perceivable in a screen reader
 - no text to read
- Provide text equivalent

(P) Hover to show content

- Yahoo Buzz thumbs down link
- Hover over story
- User-interaction problem
- Rethink the design

Operable

- Can we interact with what we see?
- If visitors 'see' a button
 - Can it be clicked
 - Can it be reached by keyboard
 - Can it be activated by keyboard

(O) Call to inaction

- `Take the tour`
- `addEvent('takeTour', show.takeTour());`

(O) Call to inaction

- `Take the tour`
- `addEvent('takeTour', show.takeTour());`
- Clickable with a mouse
- Not focusable with keyboard.
- Use `<a>` instead.

Understandable

- For an element that is perceivable and operable
- Is it understandable of how to use it, or what it does?

(U) Confusing labels

- `On`
- Expectation?

(U) Confusing labels

- `On`
- Expectation: Switch something on.
- Well, not on streaming quotes on Y! Finance
- Clicking 'On' turns live streaming quotes Off
- The label is status instead of an action verb.

(U) Storing potential error messages

- HTML contains all error messages
- `display:none` of validation messages
- Unhidden when form validation fails
- Without CSS all messages visible
- Visitor told off before they've done anything

(U) misusing HTML

- `<abbr title="2008-10-26T19:32:25+05:00">a
n hour ago</abbr>`
- Microformats abbr date-time pattern
- abbr element:
 - provide expansion to an abbreviation
 - Facilitate understanding

Microformats vs accessibility

- Tantek Celik: We must not go down the path of invisible (meta)data - IMHO that principle is inviolable for microformats.
- Human unfriendly data is an accessibility barrier
- Violates Microformat's human-first principle
- No compromise possible

(U) Storing machine data

- `{ "title"=>"JSON String"} `

(U) Storing machine data

- `{"title"=>"JSON String"}`
- Requires CSS to be accessible
- Machine readable data

(U) Machine Readable data

- Keep out of human perceivable regions
- Never rely on CSS or JavaScript
- Use `<script>`, or `<meta>` instead

Robust

- Best intentions are limited
- Can't foresee every barrier
- Need a safety net for visitors to fall back on
- Need to allow tailored experience

(R) Progressive enhancement

- Key robustness technique
- Structured content: HTML
- Presentation layer: CSS
- Behaviour layer: JavaScript
- Core functionality should be in HTML layer

Robust progressive enhancement

- Behaviour layer causing a problem?
 - Turn off JavaScript
- Presentation styles causing a problem?
 - Turn off CSS
- HTML = core content and functionality
 - Most likely to be accessible

Being a better accessibilista

- Learn about disabilities
- Learn about how people with disabilities use the web
- Apply what you've learnt
- Spot potential barriers
- Share your experiences with others

Bottom Line

- A site is accessible when
- People with disabilities can use it
- To perform the core use-cases

The End

Thanks / Bibliography

- Jim Thatcher
- Joe Clark
- Benjamin Hawkes-Lewis
- Jon Gibbins (dotjay)
- WCAG 2.0

Thank you

- Questions & Answers