Ajax and Accessibility

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Ajax and Accessibility Agenda

- Ajax and Web 2.0
- Accessibility issues with Ajax
- Case study of retrofitting a web page using Ajax
- Recommended solutions for implementing Ajax to maximise accessibility
- Testing Ajax with a screen reader

Ajax and Web 2.0

- What is Web 2.0?
- Web 1.0 + something else

Web 1.0

- Publishers producing websites
- Visitors read websites
- Clearly enforced divide

Characteristics of Web 2.0

- Breaking the Publisher/Reader divide
- User contributes/generates content
- Social media / shared experiences
- Web as a Platform

Examples of Web 2.0

- Users sharing content:
  - Flickr, Y! Answers, YouTube, Wikipedia
- Users publishing/subscribing
  - Blogs, RSS
- Social networking / communities
  - Facebook, MySpace, Ning
- Interactive applications
  - Google Maps

Web as a platform

- Email
  - Gmail, Yahoo Mail, Hotmail Live
- Calendar / Project Management
  - Basecamp, 30 Boxes, Google Calendar
- Personalised Homepages
  - My Yahoo!, Netvibes, Pageflakes
- Aggregators and meme-trackers
  - Google Reader, Techmeme, Technorati

So how do we build all of this?

Building blocks of Web 2.0

- HTML
- CSS
- JavaScript (and Ajax)

What is Ajax?

- Connecting to a server using JavaScript
- Avoids page refreshes
- Dynamic updates to content
- Dynamic processing of user inputs

Ajax accessibility issues: Overview

- General issues
- Screen reader issues
- Screen magnifier issues
- Keyboard issues
- Movement and colour issues

Ajax accessibility issues: General

- Lack of page refresh – breaks web model
- User independent updates
- Visual dependencies
- JavaScript barriers

Ajax accessibility issues: Screen readers

- Updating the virtual buffer
- Two issues:
  - Is the content available to the user?
  - Is the user aware the content is updated?
- Hidden content

Ajax accessibility issues: Screen readers

- User initiated updates
- User independent updates
- Delayed updates (Ajax)
  - Virtual buffer sometimes not updated
  - Hidden input field hack
  - Manual updates
- Usability issues

Ajax accessibility issues – Screen magnifiers

- Distance between action and result
- Changing the content they are reading
- Overflowing content
- Changing focus

Ajax accessibility issues – keyboard users

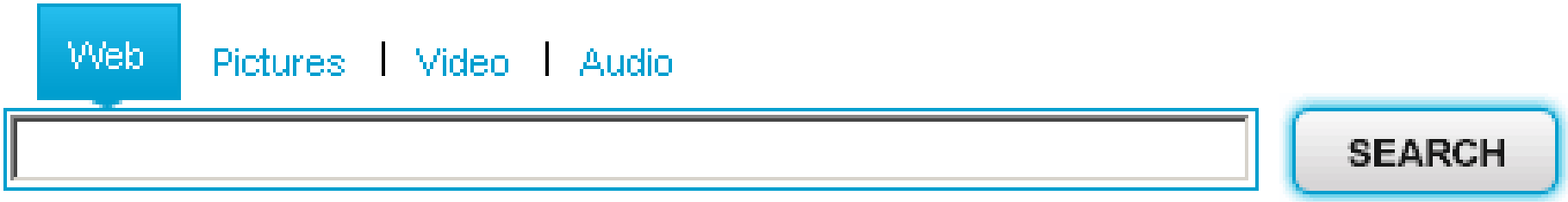
- Offscreen content
- Removing focused content
- Interactive elements focusable

Case study of retrofitting a web page using Ajax

- Pre-requisites
  - Structured and semantic HTML
  - Text alternative to visual cues
- Case studies
  - Y! TV Search
  - Y! Finance Currency Converter

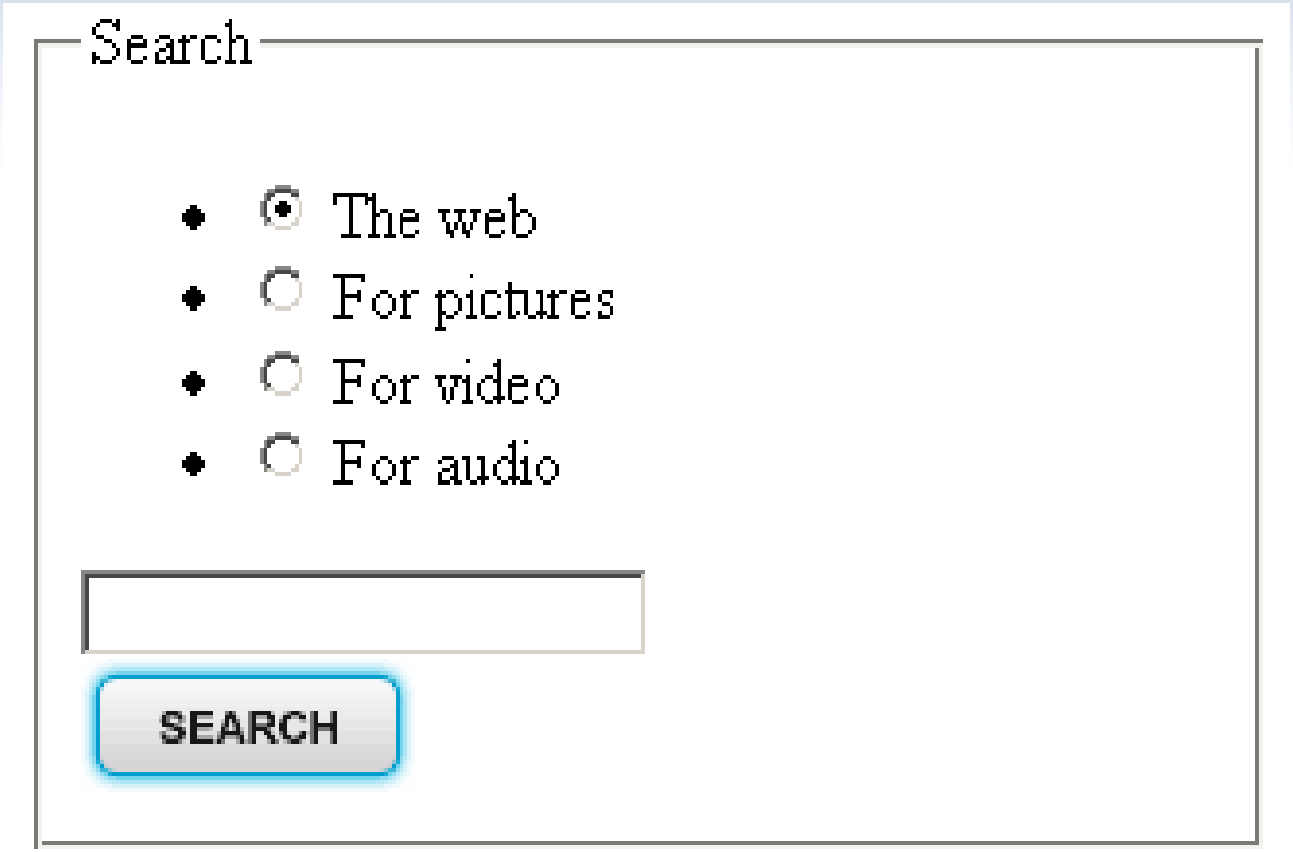
Case Study: Yahoo! TV Search

- Common Interface: Tabbed Search



Case Study: Yahoo! TV Search

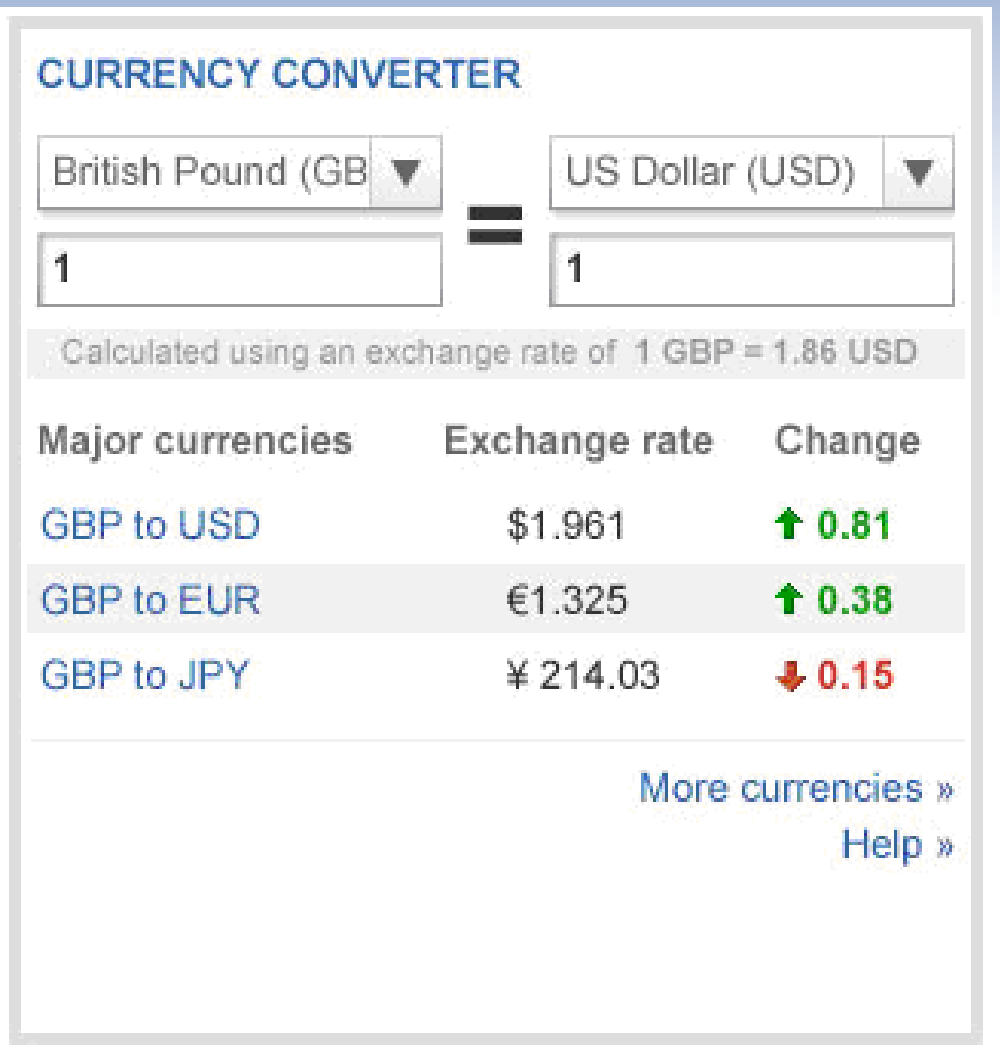
- Its just a form!



Case Study: Yahoo! TV Search

- Plus: Adding the visual cue with CSS
- Plus: JavaScript to enhance the user experience
- Audio cues (Extra text)
- Keyboard access for free (labels)

Case Study: Currency Converter



Case Study: Currency Converter

- Simple HTML Form
- Visual cues
- Enhancing labels
- Screen reader testing
- Catching bugs

Recommended solutions for accessible Ajax

- Development
- Testing

Recommended solutions: Development

- Progressive enhancement
  - Semantic and structured HTML
  - Core functionality in HTML only
  - Use CSS to add visual cues
  - Use JavaScript to add
    - Dynamic updates
    - User-enhancements

Recommended solutions: Testing

- Disable JavaScript and CSS:
  - Core functionality must work
- Enable CSS and JavaScript:
  - Identify visual cues, ensure text-only equivalents are available
  - Visual cues: colour, positioning, arrows, GUI metaphors
- Test it without a mouse
- Test it on a slow connection

Testing with a screen reader

- Don't use a screen reader
- Get a screen reader user instead
- Screen reader power user – good for first pass testing
- Normal screen reader user – better for real user testing

References

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  - PAS 78 – British Standards Institution
    - en.wikipedia.org/wiki/Pas_78
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Thank you

Questions & Answers