



Website Accessibility Evaluation Techniques

Introducing a Development
Perspective of Evaluation

Steve Potts, Dec 2005



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1. Introduction

What is Accessibility?

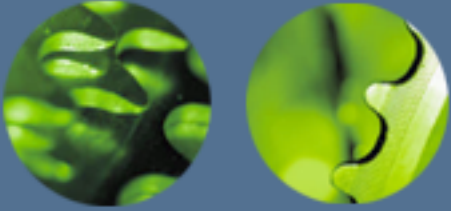
- Overcoming personal limitations
- Overcoming technical limitations



1. Introduction

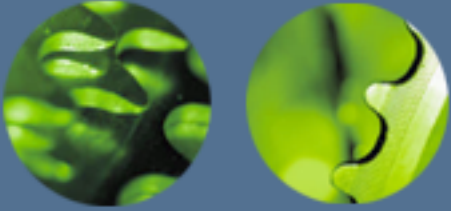
Instruments for Accessibility Criteria (UK)

- W3C WAI WCAG1.0
- Disability Discrimination Act 1995
- DRC Investigation - The Web - Access and Inclusion for Disabled People 2004
- DRC Code of Practice - Rights of Access - Goods, Facilities, Services and Premises 2002



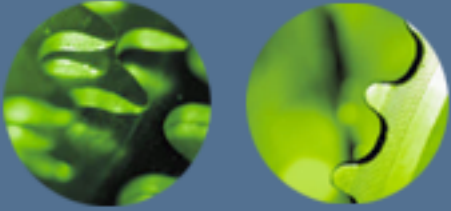
2. Set a Context

- **What?**
 - Website
- **When?**
 - Web Application
- **Where?**
 - Web-Based Data Entry
- **Who?**
 - Handheld Device Website
- **Why?**



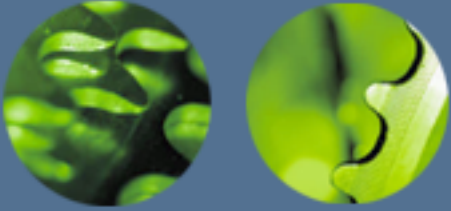
2. Set a Context

- **What?**
- **When?**
 - **During Development**
- **Where?**
 - **Ongoing Monitoring**
- **Who?**
- **Why?**
 - **Post Deployment**
 - **Evaluating a Legacy Site**



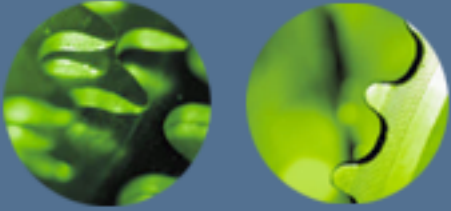
2. Set a Context

- **What?**
- **When?**
- **Where?**
 - **Development Environment**
- **Who?**
 - **Offsite Remote Access**
- **Why?**
 - **Usability Laboratory**



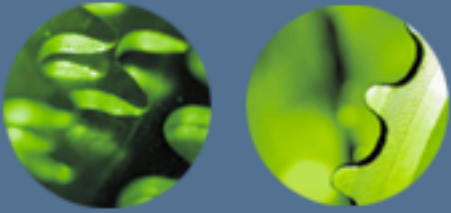
2. Set a Context

- **What?**
- **When?**
- **Where?**
- **Who?**
 - **Development Team**
 - **Dedicated Accessibility Team**
 - **Disability Group Users**
- **Why?**



2. Set a Context

- **What?**
- **When?**
- **Where?**
- **Who?**
- **Why?**
 - **Best Practices**
 - **Threat of Litigation**



3. Criteria for Success

Idealistic

- ✓ Continuous & Iterative
- ✓ Cross-Disability Group User Testing
- ✓ Prescriptive Guidelines
- ✓ Expert Review
- ✓ Full-Scale Scope
- ✓ Unlimited Budget

Realistic

- × Performed Once at End
- × Single User Testing (Often the Developer)
- × Vague Understanding
- × Peer Review
- × Limited Scope
- × Low to Zero Budget



3. Criteria for Success

Compromise

- ✓ Inherent Developer Working Practices
- ✓ Team Testing Approach (Learn and Apply)
- ✓ Peer Reviews Early and Often
- ✓ Full System Scope
- ✓ Accessibility Evaluation Factored Into Budget



4. Evaluation Process

- **Full Conformance Review**

1. Determine the Scope of the Evaluation
2. Use Web Accessibility Evaluation Tools
3. Examine Pages Using Graphical Browsers
4. Examine Pages Using Specialised Browsers
5. Use Automated Accessibility Evaluation Tools
6. Read and Evaluate Page Content
7. Summarise Obtained Results



4. Evaluation Process

- **Preliminary Review**

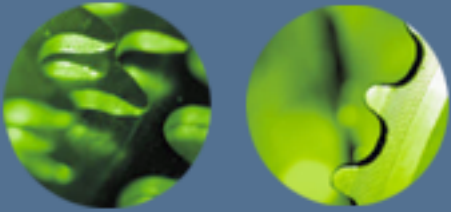
1. Select a Representative Page Sample
2. *(No Web Validation)*
3. Examine Pages Using Graphical Browsers
4. Examine Pages Using Specialised Browsers
5. Use Automated Accessibility Evaluation Tools
6. *(Content Not Evaluated)*
7. Summarise Obtained Results



4. Evaluation Process

- **Graphical Browsers**

1. Disable Images for Alternative Text
2. Disable Audio for Equivalent Content
3. Vary Font Sizes to Ensure Readability
4. Apply Different Screen Resolutions
5. Reduce Colour Saturation
6. Navigate Using Keyboard Only



4. Evaluation Process

- **Graphical Browsers**
 - DOM Inspector for Internet Explorer, Firefox
 - WAVE Toolbar for Internet Explorer, Firefox
 - AIS Toolbar for Internet Explorer
 - Firefox Web Developer Toolbar
 - TAW3 Toolbar for Firefox
 - Safari
 - Opera



4. Evaluation Process

- **Specialised Browsers**
 1. Equivalent Content to Graphical Browser
 2. Content Presented in Meaningful Order



4. Evaluation Process

- **Specialised Browsers**
 - Text Browsers: Lynx, Links, Opera
 - Voice Browsers: IBM Home Page Reader



4. Evaluation Process

- **Automated Evaluation Tools**
 1. Validate Mark-up and Style Sheets
 2. Perform Automated Evaluation



4. Evaluation Process

- **Automated Evaluation Tools**
 - W3C HTML Tidy, HTML/CSS Validators
 - HiSoftware AccVerify
 - SSB Technologies InFocus
 - Watchfire Bobby



4. Evaluation Process

W3C WAI WCAG1.0 Guidelines

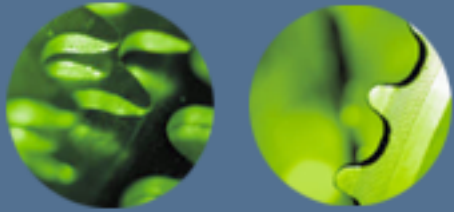
- 14 Guidelines Totalling 65 Checkpoints:
 - 16 Priority 1 Checkpoints “Must” Conform
 - 30 Priority 2 Checkpoints “Should” Conform
 - 19 Priority 3 Guidelines “May” Conform



4. Evaluation Process

W3C WAI WCAG1.0 Guidelines

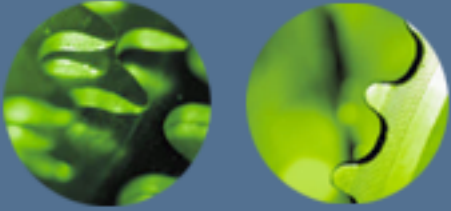
- 14 Guidelines Totalling 65 Checkpoints:
 - Level “A” Conformance
 - Level “AA” Conformance
 - Level “AAA” Conformance



4. Evaluation Process

Reporting

- Summarise Problems
- Identify Best Practices
- Recommend Follow-up Steps:
 - Repair Identified Accessibility Barriers
 - Expanding Positive Aspects of Site
 - Ongoing Maintenance and Monitoring



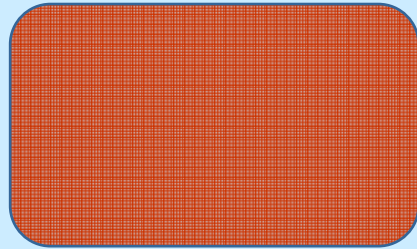
5. Sample Evaluation

1. **Determine the Scope of the Evaluation**
Define Scope as Amazon.co.uk Home Page
2. **Use Web Accessibility Evaluation Tools**
Introduce HTMLTidy, HTML/CSS Validators
3. **Examine Pages Using Graphical Browsers**
Internet Explorer & Firefox Toolbars, Opera
4. **Examine Pages Using Specialised Browsers**
Single Image(!) Demo with IBM HPR, Lynx
5. **Use Automated Accessibility Evaluation Tools**
Results from HiSoftware AccVerify, Watchfire Bobby
6. **Summarise Obtained Results**
State the Need to Write Results and Recommendations



5. Sample Evaluation

Specific Example of Manual Evaluation

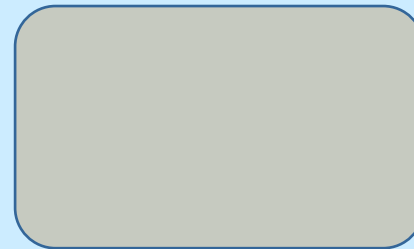
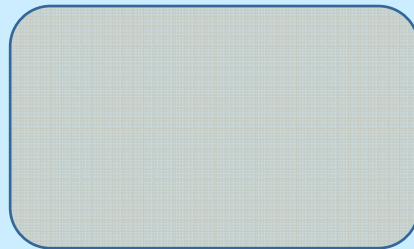


Press the “stop” button to halt deletion.



5. Sample Evaluation

Specific Example of Manual Evaluation



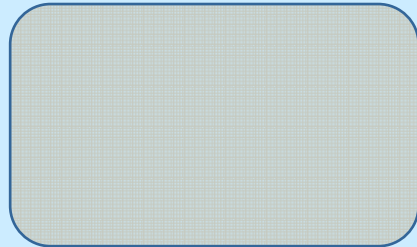
Press the “stop” button to halt deletion.

1. Removal of Colour



5. Sample Evaluation

Specific Example of Manual Evaluation



Presione el botón de la “parada”.

2. Non-primary Natural Language



5. Sample Evaluation

Specific Example of Manual Evaluation



Presione el botón de la “parada”.

3. Images Disabled, No ALT Attribute



5. Sample Evaluation

Specific Example of Manual Evaluation

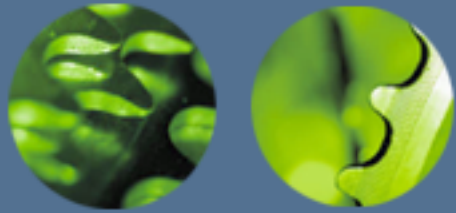
Presione el botón de la “parada”.

4. Images Disabled, No SUBMIT Value



6. Conclusions

- **Guidelines Exist**
- **Automatic Evaluation Insufficient Alone**
- **Pragmatism in Manual Evaluation**
- **Extend and Embrace**



Bibliography

W3C WAI (2005). "Evaluating Web Sites for Accessibility"
<http://www.w3.org/WAI/eval/>

Disability Discrimination Act (1995). HMSO, Norwich. TSO.

DRC (2004). "Formal Investigation Report: Web Accessibility"
<http://www.drc-gb.org/library/webaccessibility.asp>

DRC (2002). "Code of Practice: Rights of Access"
<http://www.drc-gb.org/publicationsandreports/publicationdetails.asp>



Resources

Starting Points to Sow the Seeds...

- <http://www.w3.org/WAI/>
- <http://www.accessify.com/>
- <http://www.disability.gov.uk/>
- <http://www.joeclark.org/access/>
- <http://www.jimthatcher.com/>



UPA North

Usability Professionals Association North

- UK Chapter of the UPA
Usability Professionals' Association
- e:: northern.usability@gmail.com
- b:: ukupa.org.uk/north/
- w:: groups.yahoo.com/group/northern_usability/