

# Web Accessibility

Web Standards and Regulatory Compliance

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# Web Accessibility: Web Standards and Regulatory Compliance

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ISBN-13 (pbk): 978-1-59059-638-8

ISBN-10 (pbk): 1-59059-638-2

Printed and bound in the United States of America 9 8 7 6 5 4 3 2 1

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For information on translations, please contact Apress directly at 2560 Ninth Street, Suite 219, Berkeley, CA 94710. Phone 510-549-5930, fax 510-549-5939, e-mail [info@apress.com](mailto:info@apress.com), or visit [www.apress.com](http://www.apress.com).

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*To Jon B., who kept me going without even knowing it.*  
—Shawn Lawton Henry

*To my wife, Nongyow, and our kids, Marina and James,  
without whom life would be monochrome.*  
—Bruce Lawson

# CONTENTS AT A GLANCE

<b>Foreword</b> .....	<b>xxiii</b>
<b>About the Authors</b> .....	<b>xxv</b>
<b>About the Technical Reviewers</b> .....	<b>xxxii</b>
<b>Acknowledgments</b> .....	<b>xxxiii</b>
<b>Introduction</b> .....	<b>xxxv</b>
<b>PART 1: THE IMPACT OF WEB ACCESSIBILITY</b> .....	<b>xlvi</b>
<hr/>	
<b>Chapter 1: Understanding Web Accessibility</b> .....	<b>1</b>
<b>Chapter 2: Overview of Law and Guidelines</b> .....	<b>53</b>
<b>Chapter 3: Implementing Accessibility in the Enterprise</b> .....	<b>69</b>
<b>PART 2: IMPLEMENTING ACCESSIBLE WEBSITES</b> .....	<b>84</b>
<hr/>	
<b>Chapter 4: Overview of Accessible Technologies</b> .....	<b>85</b>
<b>Chapter 5: Assistive Technology: Screen Readers and Browsers</b> .....	<b>103</b>
<b>Chapter 6: Accessible Content</b> .....	<b>127</b>
<b>Chapter 7: Accessible Navigation</b> .....	<b>179</b>
<b>Chapter 8: Accessible Data Input</b> .....	<b>213</b>

<b>Chapter 9: CSS for Accessible Web Pages</b> .....	<b>247</b>
<b>Chapter 10: Accessible JavaScript</b> .....	<b>291</b>
<b>Chapter 11: Accessible Flash</b> .....	<b>337</b>
<b>Chapter 12: PDF Accessibility</b> .....	<b>367</b>
<b>Chapter 13: Accessibility Testing</b> .....	<b>407</b>
<b>Chapter 14: Introduction to WCAG 2.0</b> .....	<b>459</b>
<b>Chapter 15: Retrofitting Case Study: Redesign of a University Website</b> .....	<b>475</b>
<b>PART 3: ACCESSIBILITY LAW AND POLICY</b> .....	<b>510</b>
<hr/>	
<b>Chapter 16: U.S. Web Accessibility Law in Depth</b> .....	<b>511</b>
<b>Chapter 17: Worldwide Accessibility Laws and Policies</b> .....	<b>547</b>
<b>Appendix A: Glossary of Terms</b> .....	<b>581</b>
<b>Appendix B: Guide to the Section 508 Standards for Electronic and Information Technology</b> .....	<b>595</b>
<b>Appendix C: Overview of PAS 78 Guide to Good Practice in Commissioning Accessible Websites</b> .....	<b>619</b>
<b>Index</b> .....	<b>627</b>

# CONTENTS

<b>Foreword</b> . . . . .	<b>xxiii</b>
<b>About the Authors</b> . . . . .	<b>xxv</b>
<b>About the Technical Reviewers</b> . . . . .	<b>xxxi</b>
<b>Acknowledgments</b> . . . . .	<b>xxxiii</b>
<b>Introduction</b> . . . . .	<b>xxxv</b>

## **PART 1: THE IMPACT OF WEB ACCESSIBILITY** . . . . . **xlviii**

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<b>Chapter 1: Understanding Web Accessibility</b> . . . . .	<b>1</b>
What Is Web Accessibility? . . . . .	2
An Example of Web Accessibility: Alt-Text . . . . .	4
Other Web Accessibility Examples . . . . .	6
Web Accessibility Is Essential for Equal Opportunity . . . . .	7
Benefits for People Without Disabilities . . . . .	8
Older People . . . . .	9
People with Low Literacy and Those Not Fluent in the Language . . . . .	10
People with Low-Bandwidth Connections and Older Technologies . . . . .	10
New Web Users . . . . .	11
Interdependent Components of Web Accessibility . . . . .	11
Description of Components . . . . .	12
Accessibility in the Implementation Cycle . . . . .	16
Compensating for Weak Accessibility Support . . . . .	17
Bringing Together the Components . . . . .	18
Authoring Tool Accessibility Guidelines (ATAG) . . . . .	19
Web Content Accessibility Guidelines (WCAG) . . . . .	19
User Agent Accessibility Guidelines (UAAG) . . . . .	20

# CONTENTS

Approaches to Web Accessibility . . . . .	20
Start Now . . . . .	20
Start by Understanding the Issues . . . . .	21
Involve People with Disabilities in Your Project . . . . .	22
Recruiting People with Disabilities . . . . .	22
Learning from People with Disabilities . . . . .	25
Understand the Relationship Between Accessibility and Usability . . . . .	26
Understand the Vital Role of Guidelines . . . . .	28
Accessibility Barriers on Existing Sites . . . . .	29
Focusing Evaluation . . . . .	30
Prioritizing Evaluation and Repairs by Area . . . . .	30
Prioritizing Repairs by Barrier . . . . .	31
Harmful Myths About Web Accessibility . . . . .	32
Myth: Text-Only Versions Are an Acceptable Solution . . . . .	33
Myth: Accessibility Makes Sites Dull and Boring . . . . .	35
Myth: Accessibility Is Expensive and Hard . . . . .	38
Myth: Accessibility Is the Sole Responsibility of Web Developers . . . . .	39
Myth: Accessibility Is for People Who Are Blind . . . . .	39
Myth: Evaluation Tools Can Determine Accessibility and Conformance to Standards . . . . .	40
Myth: Guidelines Are Not Sufficient for Accessibility . . . . .	42
Additional Benefits from a Business Perspective . . . . .	42
Technical Benefits . . . . .	42
Reduced Site Development and Maintenance Time . . . . .	43
Reduced Server Load . . . . .	43
Improved Interoperability . . . . .	43
Preparation for Advanced Technologies . . . . .	44
Financial Benefits . . . . .	44
Search Engine Optimization . . . . .	44
Increased Website Use . . . . .	45
Direct Cost Savings . . . . .	46
The Business Case for Web Accessibility . . . . .	47
Call to Action . . . . .	47
Summary . . . . .	49

## **Chapter 2: Overview of Law and Guidelines . . . . . 53**

Evolution of Public Policy . . . . .	54
What Is the Problem? . . . . .	55
Complaints Filed Due to Inaccessible Web Design . . . . .	56
ADA Complaint Against the City of San José, California . . . . .	56
Maguire v. Sydney Organising Committee for the Olympic Games . . . . .	58
Direct Discrimination . . . . .	59
Unjustifiable Hardship vs. Remediation . . . . .	60
Effect of Addressing Access Early in Web Design . . . . .	61

Development of Accessible Web Design Guidelines and Laws . . . . .	61
Statutes and Regulations . . . . .	61
Industry Codes, Recommendations, and Good Practice . . . . .	62
W3C Web Accessibility Initiative (WAI) . . . . .	63
WCAG Priorities . . . . .	65
Section 508: U.S. Web Accessibility Standards . . . . .	66
Summary . . . . .	67
<b>Chapter 3: Implementing Accessibility in the Enterprise . . . . .</b>	<b>69</b>
Why Set Up an Accessibility Organization? . . . . .	70
Makeup of the Accessibility Organization . . . . .	71
Accessibility Organization Authority . . . . .	72
Accessibility Organization Scope, Goals, and Functions . . . . .	73
Accessibility Awareness . . . . .	74
Training . . . . .	74
Knowledge Base . . . . .	75
Feedback . . . . .	75
Quality Assurance . . . . .	76
Milestones . . . . .	76
Technological Monitoring . . . . .	76
Periodic Objective Reviews . . . . .	77
Support . . . . .	77
Legal Matters . . . . .	78
Standards . . . . .	78
Public Representation . . . . .	80
Implementation Approach . . . . .	80
Initial Assessment (Where Are You?) . . . . .	81
Implementation Plan . . . . .	82
Handover to AO . . . . .	82
Summary . . . . .	83
<b>PART 2: IMPLEMENTING ACCESSIBLE WEBSITES . . . . .</b>	<b>84</b>
<hr/>	
<b>Chapter 4: Overview of Accessible Technologies . . . . .</b>	<b>85</b>
HTML and XHTML . . . . .	87
Cascading Style Sheets (CSS) . . . . .	88
JavaScript . . . . .	89
Flash . . . . .	91
Portable Document Format (PDF) . . . . .	93
Synchronized Multimedia Integration Language (SMIL) . . . . .	93
QuickTime, Windows Media, and RealPlayer . . . . .	96
Scalable Vector Graphics (SVG) . . . . .	97
Java . . . . .	99
XML and XSL . . . . .	99
Summary . . . . .	100



**Chapter 5: Assistive Technology: Screen Readers and Browsers . . . . . 103**

Screen Readers . . . . . 104

    How Screen Readers Work with Web Pages . . . . . 104

    Specific Screen Readers . . . . . 106

        Using Hal . . . . . 108

        Using JAWS for Windows . . . . . 109

        Using Window-Eyes . . . . . 110

Talking and Text-Only Browsers . . . . . 112

    A Talking Browser . . . . . 112

    A Text Browser . . . . . 114

Screen Magnification . . . . . 116

Browser Checks of Website Accessibility . . . . . 117

    Websites That Analyze a Page . . . . . 118

    Browser Settings for Testing a Page . . . . . 119

    Toolbars and Favelets . . . . . 121

        The NCAM Accessibility QA Favelet . . . . . 121

        The Web Accessibility Toolbar . . . . . 122

        The Section 508 Toolbar . . . . . 122

Summary . . . . . 124

**Chapter 6: Accessible Content . . . . . 127**

Guidelines for Accessible Web Development . . . . . 128

    WCAG 1.0 . . . . . 128

    WCAG 2.0 . . . . . 129

    Section 508 Standards . . . . . 130

Using Text Equivalents for Images . . . . . 131

    Guidelines and Standards for Text Equivalents . . . . . 131

        WCAG 1.0 . . . . . 131

        Section 508 . . . . . 132

        WCAG 2.0 . . . . . 132

    Classification of Images . . . . . 133

        Image Links . . . . . 134

        Image Map Hotspots . . . . . 134

        Image Buttons . . . . . 135

        Decorative and Formatting Images . . . . . 135

        Charts and Graphs . . . . . 135

    Accessible Image Links . . . . . 136

    The Role of Positional Information or Context . . . . . 138

    Accessible Image Map Hotspots . . . . . 138

        An Accessible Client-Side Image Map . . . . . 139

        Style of Alternative Text . . . . . 141

        An Inaccessible Client-Side Image Map . . . . . 142

    Accessible Image Buttons . . . . . 143

Treatment of Formatting and Decorative Images . . . . .	144
Spacer Images . . . . .	144
Other Formatting Images . . . . .	146
Images That Repeat Textual Information . . . . .	147
Decorative Images . . . . .	148
Treatment of Images That Carry a Lot of Information . . . . .	149
Summary for Text Equivalents for Images . . . . .	151
Using Text Equivalents for Audio . . . . .	152
Guidelines and Standards for Audio . . . . .	152
Transcripts . . . . .	153
Using Color . . . . .	154
Color to Convey Information . . . . .	154
Color Contrast . . . . .	155
Creating Accessible Tables . . . . .	158
Layout Tables . . . . .	158
How Tables Linearize . . . . .	158
Spanning Cells in Layout Tables . . . . .	160
Guidelines and Standards for Layout Tables . . . . .	161
Tools for Checking Linearization . . . . .	162
Data Tables . . . . .	163
Guidelines and Standards for Data Tables . . . . .	164
Simple Data Tables . . . . .	165
Layered Data Tables . . . . .	166
Irregular Data Tables . . . . .	168
The Caption Element and Summary Attribute . . . . .	170
Assistive Technology and Tables . . . . .	170
Home Page Reader and Tables . . . . .	170
JAWS and Tables . . . . .	171
Window-Eyes and Tables . . . . .	171
Default Behavior . . . . .	172
Summary for Accessible Tables . . . . .	173
Flicker Issues . . . . .	173
Guidelines and Standards for Flicker . . . . .	173
The Blink and Marquee Elements . . . . .	175
Summary . . . . .	176

## **Chapter 7: Accessible Navigation . . . . . 179**

Navigation Considerations . . . . .	180
Reading Order . . . . .	181
Heading Navigation . . . . .	184
Skip Navigation Links . . . . .	186
Creating Skip Navigation Links . . . . .	186
Placing a Link in Normal Text . . . . .	187
Creating a Link As Alt-Text on an Invisible Image . . . . .	188
Using a Text Link Styled to Be Invisible . . . . .	190
Exposing the Link When It Receives Focus . . . . .	191
The In-Page Link Problem with Internet Explorer 6 . . . . .	193

# CONTENTS

Skipping Text Blocks with Assistive Technologies . . . . .	194
Skipping Links with Window-Eyes . . . . .	195
Skipping Links with Home Page Reader . . . . .	195
Skipping Links with JAWS . . . . .	196
Accessible Frames . . . . .	196
How Frames Work . . . . .	197
How Assistive Technologies Support Frames . . . . .	198
Frames and Focus . . . . .	200
Summary for Frames . . . . .	201
Accessible Image Maps . . . . .	201
Client-Side Image Maps . . . . .	201
Server-Side Image Maps . . . . .	202
Complex Client-Side Image Maps . . . . .	204
Summary for Image Maps . . . . .	205
Layout and Navigation . . . . .	205
Accessible Links . . . . .	206
Link Navigation . . . . .	206
Link Text . . . . .	207
Summary . . . . .	211

## **Chapter 8: Accessible Data Input . . . . . 213**

Guidelines for Data-Input Forms . . . . .	214
Accessible Forms . . . . .	217
Form Components . . . . .	217
Buttons . . . . .	217
Text Input Fields and Text Areas . . . . .	218
How Forms Sound . . . . .	219
Placement of Prompting Text . . . . .	225
Best Practices for Accessible Forms . . . . .	227
When Labels Won't Work . . . . .	228
Use the Title Attribute . . . . .	230
Use the Fieldset and Legend Elements for Sets of Controls . . . . .	231
Do Not Use Labels As Containers . . . . .	233
More Is Not Better . . . . .	234
Mandatory Fields, Errors, and Help for Forms . . . . .	236
Mandatory Form Fields . . . . .	236
Form Validation . . . . .	237
Server-Side Validation . . . . .	237
Client-Side Validation . . . . .	238
Help for Form Fields . . . . .	239
PDF Forms . . . . .	240
Accessibility of Forms for People Who Are Deaf . . . . .	241
Timed Responses . . . . .	242
Summary . . . . .	244

<b>Chapter 9: CSS for Accessible Web Pages</b> . . . . .	<b>247</b>
How Style Sheets Benefit Accessibility . . . . .	248
CSS Basics . . . . .	253
Inline Styles . . . . .	255
Embedded Style Sheets . . . . .	256
Linked and Imported Style Sheets . . . . .	256
User Style Sheets . . . . .	257
Browser Style Sheets . . . . .	259
Color and Backgrounds . . . . .	259
Background and Text Colors . . . . .	259
Background Images . . . . .	260
Foreground and Background Contrast . . . . .	260
Other Means of Conveying Information . . . . .	261
Text and Fonts . . . . .	261
Text Sizing . . . . .	261
Text Margins and Indentation . . . . .	264
Font Family . . . . .	266
Letter and Word Spacing . . . . .	266
Letter Case . . . . .	267
Text Direction . . . . .	267
Image Replacement Techniques . . . . .	267
CSS On, Images Off . . . . .	268
Scalable Inman Flash Replacement (sIFR) . . . . .	269
Deprecated Image Replacement Techniques . . . . .	270
What's Wrong with Using an img Tag? . . . . .	270
Image Replacement Abuse . . . . .	270
Layout and Positioning . . . . .	271
Sample Layouts . . . . .	271
Centered Elastic-Width Column . . . . .	272
Three Columns Using Absolute Positioning . . . . .	273
A Heading, a Footer, and Two Liquid Columns . . . . .	276
Navigation Design . . . . .	279
Invisible Labels for Form Elements . . . . .	280
Bullet Styles for Lists . . . . .	281
Empty Table Cells . . . . .	282
Alternative Style Sheets . . . . .	282
Alternative Style Sheet Specification . . . . .	282
Style Sheet Switching . . . . .	283
Zoom Layouts . . . . .	283
Nonscreen Media . . . . .	285
Auditory CSS . . . . .	286
Paged Media . . . . .	286
Media-Specific Style Sheets . . . . .	286
Testing and Validation . . . . .	287
Summary . . . . .	288

<b>Chapter 10: Accessible JavaScript</b> . . . . .	<b>291</b>
The JavaScript Saga . . . . .	292
Why JavaScript Has a Bad Reputation . . . . .	293
JavaScript Considerations . . . . .	294
What Visitors Need . . . . .	296
Guidelines for Dynamic JavaScript . . . . .	297
Follow Standards, Not Browsers . . . . .	298
Essential Markup Should Not Rely on JavaScript . . . . .	298
Generated HTML Follows the Same Rules As Written HTML . . . . .	298
Be Aware of Visitor and User Agent Restrictions . . . . .	299
Sometimes Less Is More . . . . .	299
Don't Break Too Many Conventions . . . . .	299
Test Everything You Access . . . . .	300
Keep Everything Separated . . . . .	300
Unobtrusive JavaScript . . . . .	301
JavaScript As the Behavior Layer . . . . .	302
Interactivity . . . . .	308
Look and Feel . . . . .	311
New Windows . . . . .	314
Guidelines for Opening Windows . . . . .	315
A Reusable Pop-Up Script . . . . .	317
Element Visibility . . . . .	321
Outdated Techniques and Replacements . . . . .	326
document.write . . . . .	326
<noscript></noscript> . . . . .	327
href="javascript:..." and onclick="javascript:" . . . . .	328
onclick="void(0)" and Other "Do Nothing" Commands . . . . .	329
document.all, document.layers, and navigator.userAgent . . . . .	329
Functions with a Lot of Parameters . . . . .	329
innerHTML . . . . .	330
Accessible Forms and JavaScript . . . . .	331
Form Enhancements . . . . .	332
Form Validation . . . . .	333
Summary . . . . .	335
<b>Chapter 11: Accessible Flash</b> . . . . .	<b>337</b>
User Requirements . . . . .	338
Key Questions . . . . .	338
Use Case Scenarios . . . . .	338
John . . . . .	339
Ava . . . . .	339
Jeff . . . . .	339
Makoto . . . . .	340
Karen . . . . .	340
Technical Requirements . . . . .	340
Flash Player Version . . . . .	341
Platform and Browser . . . . .	341
Screen Reader . . . . .	341

Key Concepts for Accessible Flash Design . . . . .	342
Control Labels . . . . .	344
Control Roles . . . . .	344
Control States . . . . .	345
Control Structure . . . . .	345
Flash Accessibility Best Practices . . . . .	345
Provide Text Equivalents . . . . .	346
Providing Text Equivalents for an Entire Movie . . . . .	346
Making Objects Inaccessible . . . . .	348
Using Auto-Labeling . . . . .	349
Assigning Text Equivalents for Single Objects . . . . .	350
Provide Context . . . . .	350
Describing the Movie . . . . .	350
Exposing State . . . . .	351
Control Reading Order . . . . .	353
Reflecting the Screen Structure . . . . .	354
Using Tab Index Values . . . . .	354
Assigning a Reading Order Using ActionScript . . . . .	355
Removing Objects from the Reading Order . . . . .	356
Detecting Screen Readers . . . . .	357
Control Animation . . . . .	357
Ensure Keyboard Access . . . . .	357
Avoiding Techniques That Prevent Access . . . . .	358
Assigning Keyboard Shortcuts . . . . .	358
Use Progressive Disclosure . . . . .	358
Enable Component Accessibility . . . . .	359
Provide Captions . . . . .	361
Importing Captioned Content . . . . .	361
Placing Text Directly on the Stage . . . . .	361
Streaming XML Caption Data . . . . .	362
Provide Control Over Audio Playback . . . . .	362
Use Color Wisely . . . . .	363
Support Users with Low Vision . . . . .	364
Embed Flash Accessibly . . . . .	365
Summary . . . . .	365
<b>Chapter 12: PDF Accessibility . . . . .</b>	<b>367</b>
Accessibility Features in Adobe Reader . . . . .	368
Changing Document Colors . . . . .	368
Resizing Documents . . . . .	372
Zooming in PDF Documents . . . . .	372
Eliminating Horizontal Scrolling . . . . .	373
Self-Voicing . . . . .	375
Support for Accessible Media . . . . .	376
Assistive Technology Support . . . . .	377

# CONTENTS

Tagged PDFs . . . . .	379
Creating Tagged PDFs in Microsoft Word . . . . .	380
Images . . . . .	383
Structure . . . . .	384
Tables . . . . .	386
Hyperlinks . . . . .	388
Lists . . . . .	388
Reading Order . . . . .	389
Color Contrast . . . . .	389
Creating Tagged PDFs in InDesign CS2 . . . . .	390
Accessibility Repair and Optimization . . . . .	391
Dealing with Untagged Documents . . . . .	391
Making Scanned Documents Accessible . . . . .	394
Correcting Tagging Issues . . . . .	395
Verifying and Repairing Reading Order . . . . .	396
Adding Missing Text . . . . .	401
Verifying and Adding Headings . . . . .	402
Adding Image Equivalents . . . . .	402
Verifying and Repairing Tables . . . . .	403
Using Acrobat's Accessibility Checker . . . . .	404
Accessible PDF Forms . . . . .	404
Summary . . . . .	405
<b>Chapter 13: Accessibility Testing . . . . .</b>	<b>407</b>
What Testing Is Possible? . . . . .	408
Text Equivalents . . . . .	409
Algorithmic . . . . .	409
Judgment . . . . .	410
Synchronized Multimedia . . . . .	410
Algorithmic . . . . .	411
Judgment . . . . .	411
Color Coding . . . . .	411
Algorithmic . . . . .	411
Judgment . . . . .	411
Style Sheets . . . . .	412
Algorithmic . . . . .	412
Judgment . . . . .	412
Redundant Text Links . . . . .	412
Algorithmic . . . . .	412
Judgment . . . . .	413
Use Client-Side Image Maps . . . . .	413
Algorithmic . . . . .	413
Judgment . . . . .	413
Table Headers . . . . .	413
Algorithmic . . . . .	413
Judgment . . . . .	414

Complex Tables . . . . .	414
Algorithmic . . . . .	414
Judgment . . . . .	414
Frames . . . . .	414
Algorithmic . . . . .	415
Judgment . . . . .	415
Flicker Rate . . . . .	415
Algorithmic . . . . .	415
Judgment . . . . .	415
Text-Only Page . . . . .	415
Algorithmic . . . . .	416
Judgment . . . . .	416
Scripting . . . . .	416
Algorithmic . . . . .	416
Judgment . . . . .	416
Applets and Plug-Ins . . . . .	417
Algorithmic . . . . .	417
Judgment . . . . .	417
Online Forms . . . . .	417
Algorithmic . . . . .	417
Judgment . . . . .	418
Skip Navigation . . . . .	418
Algorithmic . . . . .	418
Judgment . . . . .	418
Timed Responses . . . . .	418
Algorithmic . . . . .	418
Judgment . . . . .	419
Accessibility Checking Software . . . . .	419
Bobby 5.0 . . . . .	420
Choose the Tests to Be Used—Bobby . . . . .	420
Analyze the Files—Bobby . . . . .	422
Examine the Results—Bobby . . . . .	423
Choose Report Formats—Bobby . . . . .	424
InFocus . . . . .	424
Choose the Tests to Be Used—InFocus . . . . .	424
Analyze the Files—InFocus . . . . .	426
Examine the Results—InFocus . . . . .	428
Choose Report Formats—InFocus . . . . .	428
LIFT Machine . . . . .	429
Choose the Tests to Be Used—LIFT . . . . .	429
Analyze the Files—LIFT . . . . .	430
Examine the Results—LIFT . . . . .	432
Choose Report Formats—LIFT . . . . .	433
Ramp Ascend . . . . .	434
Choose the Tests to Be Used—Ramp . . . . .	434
Analyze the Files—Ramp . . . . .	435
Examine the Results—Ramp . . . . .	435
Choose Report Formats—Ramp . . . . .	437



## CONTENTS

WebKing . . . . .	437
Choose the Tests to Be Used—WebKing . . . . .	438
Analyze the Files—WebKing . . . . .	439
Examine the Results—WebKing . . . . .	440
Choose Report Formats—WebKing . . . . .	440
WebXM . . . . .	441
Choose the Tests to Be Used—WebXM . . . . .	442
Analyze the Files—WebXM . . . . .	443
Examine the Results—WebXM . . . . .	444
Choose Report Formats—WebXM . . . . .	445
The Test File Set and Results . . . . .	446
The Test Suite . . . . .	446
Results Summary . . . . .	454
Summary . . . . .	456
<b>Chapter 14: Introduction to WCAG 2.0 . . . . .</b>	<b>459</b>
Standards vs. Guidelines . . . . .	460
WCAG 2.0 from 50,000 Feet . . . . .	461
What's in WCAG 2.0? . . . . .	462
Principles and Guidelines . . . . .	462
Principle 1 . . . . .	462
Principle 2 . . . . .	463
Principle 3 . . . . .	464
Principle 4 . . . . .	464
Success Criteria . . . . .	464
Techniques Documents . . . . .	466
Example of Using the WCAG 2.0 Guidelines . . . . .	466
WCAG 2.0 Advantages and Concerns . . . . .	468
Advantages . . . . .	468
Concerns . . . . .	469
Not Completely Measurable . . . . .	469
Revolutionary Rather Than Evolutionary . . . . .	469
Baselines and Conformance . . . . .	470
Other Concerns . . . . .	471
Section 508 and WCAG . . . . .	472
Summary . . . . .	473
<b>Chapter 15: Retrofitting Case Study: Redesign of a University Website . . . . .</b>	<b>475</b>
The Original Site . . . . .	476
The Problems . . . . .	476
The Initial Fixes . . . . .	484
The Redesign . . . . .	485
Decisions in Early Planning Stages . . . . .	486
Why Web Standards? . . . . .	486
Why XHTML Rather Than HTML? . . . . .	487
Why Move Away from Tables? . . . . .	488

Site Structure—Taking Stock . . . . .	489
Building Page Templates . . . . .	490
Planning the Page Structure . . . . .	491
Styling the Template . . . . .	494
Bringing in the Content . . . . .	497
Getting Dynamic . . . . .	499
Testing and Site Launch . . . . .	500
Does the Design Solve the Original Problems? . . . . .	501
Problems Along the Way—Lessons Learned . . . . .	504
The Implementation of the New Design . . . . .	507
Summary . . . . .	507

## **PART 3: ACCESSIBILITY LAW AND POLICY . . . . . 510**

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### **Chapter 16: U.S. Web Accessibility Law in Depth . . . . . 511**

Americans with Disabilities Act and the Internet . . . . .	513
Section 504 of the Rehabilitation Act of 1973 . . . . .	513
Accessible Web ADA Myths . . . . .	514
Applying the ADA to the Internet . . . . .	516
Accessibility of State and Local Government Websites . . . . .	517
Introduction to the ADA Complaint Process . . . . .	518
Current ADA Case Law . . . . .	519
Martin v. Metropolitan Atlanta Transportation Authority . . . . .	519
Access Now v. Southwest Airlines . . . . .	520
Hooks v. OKBridge . . . . .	521
Other ADA Cases . . . . .	522
Selected ADA Accessible Web Complaints . . . . .	523
Office for Civil Rights, U.S. Department of Education . . . . .	523
America Online . . . . .	527
Online Banking Settlements . . . . .	528
Online Voting . . . . .	530
Online IRS Tax Filing Services Settlement . . . . .	531
Credit Card Company Monthly Statements . . . . .	531
Websites and Tax Fraud . . . . .	531
Websites and USDOJ Project Civic Access . . . . .	532
Travel Websites Settlement Agreements . . . . .	532
Section 255 of the Telecommunications Act of 1996 . . . . .	533
Electronic and Information Technology Accessibility Standards (Section 508) Overview . . . . .	534
State of Federal Accessibility Report to the President . . . . .	535
U.S. Access Board Guide to the Standards . . . . .	536
When Does a Web Developer Follow Section 508 Rules? . . . . .	538

## CONTENTS

Legal Hot Topics for Web Developers and Policy Makers . . . . .	539
U.S. Department of Transportation Notice of Proposed Rulemaking . . . . .	540
Electronic Forms . . . . .	540
Applets, Plug-ins, and Applications . . . . .	541
PDF and Posted Documents . . . . .	541
Multimedia, Audio Broadcasts, and Captioning . . . . .	542
Links to Inaccessible Content Off-Site . . . . .	543
Summary . . . . .	543
<b>Chapter 17: Worldwide Accessibility Laws and Policies . . . . .</b>	<b>547</b>
Australia . . . . .	548
The Disability Discrimination Act . . . . .	548
Government Website Standards . . . . .	550
Banking and AIMIA Websites . . . . .	550
Austria . . . . .	550
Belgium . . . . .	551
The BlindSurfer Project . . . . .	551
Flanders Plan for Accessible Websites . . . . .	553
Walloon Government . . . . .	553
Brazil . . . . .	553
Canada . . . . .	554
Denmark . . . . .	555
European Union . . . . .	556
eEurope and i2010 Initiatives . . . . .	556
EU Web Accessibility Benchmarking Cluster . . . . .	558
Finland . . . . .	558
France . . . . .	558
Germany . . . . .	559
Hong Kong . . . . .	561
Ireland . . . . .	561
Italy . . . . .	562
Japan . . . . .	565
JIS X 8341-3 Standard . . . . .	565
Japanese Policy Development . . . . .	566
Korea . . . . .	569
Luxembourg . . . . .	569
The Netherlands . . . . .	570
New Zealand . . . . .	571
Norway . . . . .	573
Portugal . . . . .	574
Singapore . . . . .	576
Spain . . . . .	577
Sweden . . . . .	577
Thailand . . . . .	577
United Kingdom . . . . .	578
Summary . . . . .	579

**Appendix A: Glossary of Terms . . . . . 581**

**Appendix B: Guide to the Section 508 Standards for  
Electronic and Information Technology . . . . . 595**

**Appendix C: Overview of PAS 78 Guide to Good Practice in  
Commissioning Accessible Websites . . . . . 619**

**Index . . . . . 627**

# FOREWORD

## The Challenge of Accessibility

When Tim Berners-Lee created the Web, he had some very specific goals in mind. Certainly, creating a technology that allowed the sharing of information was a main part of that goal, but an interesting piece of Berners-Lee's vision has always had to do with the human side of the Web. After all, it's not machines that use the Web, but people.

Accessibility has become a hot topic in web design, despite the fact that it has always been a part of the original vision. In a broad sense, accessibility simply means ensuring that a given page on the Web is able to be accessed. Accessibility is not about disability; rather, it's about people getting to the shared information that the vision of the Web has made manifest.

There has also been a lot said about how accessibility relates to web standards and vice versa. Realistically, accessibility relies on aspects of related web standards, but has in fact become a science, art, and practice of its own. It's a deep specialty, and one that is highly problematic, as what might make a page accessible to one person could conceivably render it inaccessible to another.

What's more, myths about accessibility and what it really means to the web designer and developer abound. To some, accessibility means merely the addition of alternative text for images. That's what folks were taught to do years ago, and that's as far as many go. To others, accessibility is considered an afterthought—something that's added to a site after it has been built. To a certain less than honorable group, web accessibility has become an opportunity for selling unnecessary or inappropriate services to unsuspecting clients, who think they're really doing the right thing and have no way as consumers to verify that what they're asking for is what they're getting.

There is good news though, and much of it has to do with a rising awareness in the industry not just of what accessibility really is, but why it's so important to the entire creation and long-term vision of well-constructed websites. This awareness is coming about through advocacy groups such as the Web Standards Project's Accessibility Task Force (ATF), World Wide Web Consortium (W3C), and independent web designers and developers who keep blogs

## FOREWORD

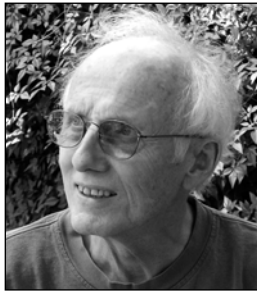
and contribute to forums such as Accessify. And, personal politics aside, it's a fact that many organizations and companies have no choice but to comply with accessibility guidelines because they are being required to do so by legislative actions around the globe.

Hope and help are most certainly at hand here, in a book dedicated to blasting through myths and providing a deep understanding along with real-world practicalities to help the working web professional grasp the complexities of accessibility. By combining the skills and vision of some of the world's foremost accessibility specialists, web designers and developers now have a handbook to help them not only create accessible websites from the get-go, but retrofit sites as well. There's plenty of information about the laws governing accessible site design around the world, as well as how to properly test sites for accessibility, which is no easy task.

If you, like me, are concerned that the sites you work on provide the best possible experience for site visitors, and are concerned with retrofitting sites and managing the accessible site for the long haul, I am confident that *Web Accessibility: Web Standards and Regulatory Compliance* will become a constant help and much used resource that no web professional should be without.

Molly E. Holzschlag  
Tucson, Arizona  
May 2006

## ABOUT THE AUTHORS



**Jim Thatcher** received his PhD from the University of Michigan in 1963, one of the first PhDs in Computer Science. Together with his thesis advisor, Dr. Jesse Wright, Jim then joined the Mathematical Sciences Department, IBM Research, in Yorktown Heights, New York. His research was in the area of mathematical computer science, automata theory, and data abstraction. Jim began moving away from the abstract and toward the practical when he and Dr. Wright, who is blind, began working on access to the PC for people who are blind. That project led to one of the first screen readers for DOS which, in 1986, became IBM Screen Reader (and the term later became generic). After that, Jim led the development of IBM Screen Reader/2 for OS/2, which was the first screen reader for the graphical user interface on the PC (1991).

In 1996, Jim left his research post to join the IBM Accessibility Center in Austin, Texas. There, he led the effort to establish the IBM accessibility guidelines specifically for use by IBM's development community.

Jim served as Vice-Chair of the Electronic and Information Technology Access Advisory Committee (EITAAC), which was impaneled by the Access Board to propose standards for Section 508. He chaired the subcommittee on Software Standards. He wrote the course on Web Accessibility for Section 508 for the Information Technology Technical Assistance and Training Center (ITTATC), which was funded by the General Services Administration and the Department of Education to support Section 508.

Jim has received numerous awards for technical work over his 37-year career with IBM. He received a Distinguished Service award from The National Federation of the Blind in 1994 and the Vice President's Hammer Award for his work with the Department of Education on the development of Software Accessibility Standards in 1999.

Jim is coauthor of *Constructing Accessible Web Sites* (along with Paul Bohman, Michael Burks, Shawn Lawton Henry, Bob Regan, Sarah Swierenga, Mark D. Urban, and Cynthia Waddell), published by glasshaus in 2002, and published again by Apress in 2003.

## ABOUT THE AUTHORS



**Michael R. Burks** currently serves as Section 508 Analyst working on the accessibility of electronic and information technology. He is also the Webmaster and Public Information Officer of the International Center for Disability Resources on the Internet ([www.icdri.org](http://www.icdri.org)), a nonprofit organization dedicated to presenting disability resources and information to those who are dealing with disability issues.

Michael works with the Internet Society ([www.isoc.org](http://www.isoc.org)) on disability issues, and has made presentations and taught tutorials on web accessibility and disability issues around the world.



**Christian Heilmann** grew up in Germany and, after a year working with people with disabilities for the Red Cross, spent a year as a radio producer. From 1997 onwards, he worked for several agencies in Munich as a web developer. In 2000, he moved to the U.S. to work for Etoys and, after the dot-com crash, he moved to the UK, where he led the web development department at Agilisys. In April 2006, he joined Yahoo! UK as a web developer.

Christian publishes an almost daily blog at [www.wait-till-i.com](http://www.wait-till-i.com) and runs an article repository at [www.icant.co.uk](http://www.icant.co.uk). He is a member of the Web Standards Project's DOM Scripting Task Force.



**Shawn Lawton Henry** leads the World Wide Web Consortium's (W3C) worldwide education and outreach activities promoting web accessibility for people with disabilities. She develops online resources to help web developers understand and implement web accessibility guidelines, and provides presentations and training on accessible web design and development with the Web Accessibility Initiative (WAI). Shawn has presented and published papers on accessibility and usability for Human Factors and Ergonomics Society (HFES), Computer-Human Interaction (CHI), Usability Professionals' Association (UPA), Web Design World, and many other conferences around the world (<http://uiaccess.com/pres.html>). Her publications also include the "Everyone Interfaces" chapter in *User Interfaces for All* (Lawrence Erlbaum Associates, 2000), *Accessibility in the User-Centered Design Process* (Georgia Tech Research Corporation, 2004), and other online resources ([www.uiaccess.com/pubs.html](http://www.uiaccess.com/pubs.html)).

Prior to joining W3C WAI, Shawn consulted with international standards bodies, research centers, government agencies, nonprofit organizations, education providers, and Fortune 500 companies to develop and implement strategies to optimize design for usability and accessibility ([www.uiaccess.com/experience.html](http://www.uiaccess.com/experience.html)). She developed UIAccess.com to share information on universal user interface design and "usable accessibility." Although Shawn holds a research appointment at the Massachusetts Institute of Technology (MIT)



Computer Science and Artificial Intelligence Laboratory (CSAIL) and has a Massachusetts phone number, she actually lives in Madison, Wisconsin. When not typing on her small laptop, she can often be found paddling her long sea kayak.



**Andrew Kirkpatrick** serves as the cross-product Accessibility Engineer for Adobe Systems. Prior to joining Adobe, Andrew was Principal Accessibility Engineer at Macromedia, and Director of Technology at the National Center for Accessible Media (NCAM) at WGBH in Boston, with a focus on accessibility consulting for corporate clients including America Online, Yahoo!, BT, Apple, and Macromedia. In addition to activities with corporate clients at NCAM, Andrew managed projects focused on web and interactive media accessibility, and was the product manager for MAGpie (NCAM's software for creating captions and audio descriptions) and developer of STEP (NCAM's Simple Tool for [Accessibility] Error Prioritization).

Andrew is also Principal for Kirkpatrick Consulting, a web accessibility consultancy. Andrew lives in Massachusetts with his wonderful wife and three of the cutest kids ever.



**Patrick H. Lauke** currently works as Web Editor for the University of Salford ([www.salford.ac.uk](http://www.salford.ac.uk)), where he heads a small, central web team, which provides development, training, and advice to departmental web authors across the institution. In 2003, he implemented one of the first web standards-based, XHTML/CSS-driven UK university sites.

Patrick has been engaged in the discourse on accessibility since early 2001, regularly contributing to a variety of web development and accessibility-related mailing lists and forums, taking an active role in the running of Accessify.com ([www.accessify.com](http://www.accessify.com)), moderating the Accessify forum ([www.accessifyforum.com](http://www.accessifyforum.com)), and joining the Web Standards Project Accessibility Task Force (WaSP ATF) ([www.webstandards.org](http://www.webstandards.org)) in June 2005. In his spare time, Patrick pursues his passion for photography and runs a small web/design consultancy ([www.sp1ntered.co.uk](http://www.sp1ntered.co.uk)).

With two years of Computer Sciences at the Swiss Federal Institute of Technology (ETH) in Zurich, followed by a switch to a Bachelor's degree in Graphic Design and a Masters in Creative Technology at the University of Salford, Patrick's background spans both technical and creative disciplines, which he feels are essential for a holistic approach to web design and development.

An outspoken accessibility and standards advocate (although he has been called an "evangelist," with only slight negative connotations, by some of his colleagues), Patrick favors a pragmatic hands-on approach to web accessibility over purely theoretical, high-level discussions.

"I'm an idealist by nature, but a pragmatist by trade. I'd never class myself as an expert, and I certainly don't have all the answers. . . I'm just an opinionated guy eager to find real-world solutions where the rubber meets the road."

## ABOUT THE AUTHORS



**Bruce Lawson** dreamed up *Constructing Accessible Web Sites*, the forerunner of this book. Previously, he worked as an actor and theater director, and a programmer with AT&T, before becoming a singer, guitarist, and tarot card reader in Istanbul, a volunteer pharmacist in Calcutta, a movie extra in Bombay, and a kindergarten teacher and tutor to the princess's daughter in Thailand.

Now, Bruce is a member of the Web Standards Project's Accessibility Task Force, and was one of the reviewers of the British Standards Institution's Publicly Available Specification (PAS) 78 - "Guide to Good Practice in Commissioning Accessible Websites." His interest in web standards is both philosophical (a good artisan uses the right tools, in the right way) and practical (I can get smaller pages, which Google likes). His interest in accessibility is thinly disguised self-interest, having been diagnosed with multiple sclerosis in 1999.

He blogs at [www.brucelawson.co.uk](http://www.brucelawson.co.uk), and lives in the UK, but wishes he lived somewhere warm.



**Bob Regan** is a solutions architect for vertical markets at Adobe Systems, Inc. In that role, he serves as the technical lead for the education, government, financial services, manufacturing, telecommunications, and life science markets. It is his responsibility to connect with the specific needs, challenges, and successes of customers working to create digital content and applications. He works with each team to help them collect customer experiences and communicate them into the product organization, and assemble solutions based on these requirements.

Bob's first role in the software world as an accessibility advocate continues to play an important part of his day-to-day life. Now with Adobe, he is part of a much larger team looking at accessibility issues from product design to engineering, from content authoring through to the end user. Ensuring that the Web is a great experience to us all remains a great passion of his.



**Richard Rutter** has been developing commercial websites for ten years. In 2000, he joined Citria as a user interface lead, where he introduced web standards to a staff of 150 in three offices across Europe. Richard was the producer on large e-commerce projects for clients including Barclaycard, on a finance portal that was the first commercial site to be built using CSS throughout and to meet Royal National Institute of the Blind (RNIB) accessibility requirements.

After two years at Citria, Richard joined Multimap. He was responsible for rebuilding Multimap's hugely successful website using web standards and for making the site accessible to a far wider audience. While at Multimap, Richard acted as accessibility consultant to a number of high-profile clients, including Ford Europe, Yell, and BT.

Richard is now cofounder and Production Director of Clearleft, a web consultancy specializing in accessible websites. Richard is also coauthor of the book *Blog Design Solutions*, in which he explains how to push the envelope of what can be achieved with weblog software and design. A more personal side of Richard can be found at Clagnut.com, a popular weblog where he writes about accessibility and web standards issues, as well as his passion for music and mountain biking.



The Honorable **Mark Urban** is Chairman of the North Carolina Governor’s Advocacy Council for Persons with Disabilities. He is a member and past Chair of the Board of Directors for the International Center for Disability Resources on the Internet ([www.icdri.org](http://www.icdri.org)), and a member and past Vice Chairman of the International Committee for Information Technology Standards, V2 (IT Access Interfaces). He was chief executive of a municipality during the implementation of the Americans with Disabilities Act, and a reservist in the United States Navy. He is an experienced technical architect and IT policy developer. Mark currently does project management and consulting on accessibility and related IT and disability matters with federal, state, and local agencies and the businesses that supply them.

Mark lives in Raleigh, North Carolina, with his supportive friends and family, two cats, and two “attack Chihuahuas.” To them and their support of his endeavors, he sincerely dedicates this book.



**Cynthia D. Waddell** is the Executive Director of the International Center for Disability Resources on the Internet (ICDRI). She provides leadership and project oversight in carrying out ICDRI’s mission to increase opportunities for people with disabilities by identifying barriers to participation and promoting best practices and universal design of technology for the global community.

In the world of accessibility, Cynthia Waddell is a nationally and internationally recognized expert in the field of electronic and information technology, as well as employment and construction. Named in the “Top 25 Women on the Web” by Webgrrls International in 1998, she received the first *U.S. Government Technology Magazine* award in 2003 for Leadership in Accessibility Technology and For Pioneering Advocacy and Education.

The free Cynthia Says web accessibility tool and portal was named after her and endorsed by the American Council of the Blind. The Cynthia Says portal ([www.cynthiasays.com](http://www.cynthiasays.com)) is a joint Education and Outreach project of ICDRI, The Internet Society Disability and Special Needs Chapter, and HiSoftware.

Seeking a solution for access to information on the Web for the community of people with disabilities, Cynthia Waddell authored the first accessible web design standard in the U.S. that was recognized as a best practice by the federal government and contributed to the eventual passage of legislation, including the Electronic and Information Technology Accessibility Standards (Section 508). Her seminal paper, “The Growing Digital Divide in

## ABOUT THE AUTHORS

Access for People with Disabilities: Overcoming Barriers to Participation,” was commissioned by the Clinton Administration and has been translated and cited by foreign governments, businesses, universities, disability organizations, and entities around the world.

Cynthia Waddell combines her expertise in disability legislation, public policy, and technology to provide education and professional consulting services for government, higher education, and businesses. She serves as the accessibility quality assurance lead for award-winning government portals and provides Section 508 VPAT assistance for technology vendors. Active in a number of organizations, she is the North America Chair of the International Commission on Technology and Accessibility (ICTA), a Standing Commission of Rehabilitation International, and Vice-Chair of The Internet Society Disability and Special Needs Chapter.

Cynthia Waddell’s work includes consultancies for the United Nations as an expert in accessible information and communication technologies (ICT) and for the body developing an international treaty on the rights of persons with disabilities. This is similar to her participation on the Portuguese International Accessibility Board that led to Portugal’s adoption of the Portuguese Accessibility Guidelines for websites in 1999.

In 2003, Cynthia Waddell served as the accessible technology expert for the Bush Administration UK-U.S. seminar exchange on employment and technology; following her work for several years in the “Boosting the UK Digital Economy—A Virtual Think Tank.” In addition, she was the sole U.S. speaker at the 2001 “Design for All European Day of Disabled People” at the invitation of the European Commission and the European Disability Forum.

Cynthia Waddell has keynoted at many government, university, and industry forums in the U.S. and abroad. For example, in 2005 she presented at the UN World Summit on the Information Society at the invitation of Pacific Rim consortium. In 2004, she spoke at the U.S. National Summit for Disability and Distance Education in Washington D.C. She also spoke in Tokyo, Japan at an ICT symposium and at a meeting of Diet members in conjunction with the launch of the first accessible web requirements in the Japanese Industrial Standards. She also spoke at the “Accessibility for All” conference in Nice, France for the European Union (EU) Standardization bodies, an event that was part of the EU “Design for All” initiative for access to products, services, and the environment.

Cynthia Waddell is a Lecturer in Law at her alma mater and holds a Juris Doctor from Santa Clara University School of Law. She was designated a Public Interest Disability Rights Scholar and a Dan Bradley Fellow for the Employment Law Center in San Francisco, California. In addition, she was a Rotary International Foundation Fellow at Exeter University, England, as well as an USC-Cambridge University Scholar at Cambridge University, England. She received her B.A., *cum laude*, from the University of Southern California.

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**Bruce Lawson** was both an author and technical reviewer of *Web Accessibility: Web Standards and Regulatory Compliance*. For more information about Bruce, please see his biography in the "About the Authors" section.

# ACKNOWLEDGMENTS

Infinite thanks to my husband, Karl, my amazingly intuitive voice-recognition software.

Shawn Lawton Henry

Thanks to Zeldman and Shawn Lawton Henry, whose conversations in 2001 planted the seed of the idea for the first edition of this book, and Lou Barr ([www.frogboxdesign.co.uk/](http://www.frogboxdesign.co.uk/)) who believed in that idea. Big respect to my fellow WaSP Task Force members, and Julie Howell, Rachel Andrew, Bob Regan, Isofarro, and Joe Clark, whose research and advocacy have taken accessibility into the mainstream.

Bruce Lawson

I'd like to thank my friends and colleagues at Clearleft ([www.clearleft.com](http://www.clearleft.com)), Jeremy Keith and Andy Budd, for their support and advice in writing my chapter. Thanks must also go to my technical reviewers, Gez Lemon and Bruce Lawson, for their invaluable insight, suggestions, and of course, corrections; and to Marilyn Smith for sterling work in organizing my thoughts. Last but not least, thank you Wendy for putting up with me.

Richard Rutter