

Jakob Nielsen

Designing Web Usability



Jakob Nielsen

Designing Web Usability



New Riders Publishing, Indianapolis, Indiana USA

Designing Web Usability: The Practice of Simplicity

© 2000 by New Riders Publishing

All rights reserved. No part of this book shall be reproduced, stored in a retrieval system, or transmitted by any means—electronic, mechanical, photocopying, recording, or otherwise—without written permission from the publisher. No patent liability is assumed with respect to the use of the information contained herein. Although every precaution has been taken in the preparation of this book, the publisher and author(s) assume no responsibility for errors or omissions. Neither is any liability assumed for damages resulting from the use of the information contained herein.

International Standard Book Number: 1-56205-810-X

Library of Congress Catalog Card Number: 99-63014

Printed in the United States of America

First Printing: December 1999

03 02 01 00

7 6 5 4 3

Interpretation of the printing code: The rightmost double-digit number is the year of the book's printing; the rightmost single-digit number is the number of the book's printing.

Trademarks

All terms mentioned in this book that are known to be trademarks or service marks have been appropriately capitalized. New Riders Publishing cannot attest to the accuracy of this information. Use of a term in this book should not be regarded as affecting the validity of any trademark or service mark.

Warning and Disclaimer

Every effort has been made to make this book as complete and as accurate as possible, but no warranty or fitness is implied. The information provided is on an "as is" basis. The authors and the publisher shall have neither liability nor responsibility to any person or entity with respect to any loss or damages arising from the information contained in this book.

Publisher

David Dwyer

Associate Publisher

Brad Koch

Executive Editor

Steve Weiss

Development Editor

Jennifer Eberhardt

Indexer

Lisa Stumpf

Reviewers

Michael Chanover Perry Hewitt

Proofreaders

Bob LaRoche Linda Seifert

Cover Design

James Tung, Eric Baker Design Associates, NY

Interior Design

Elizabeth Keyes

Interior Layout

Kim Scott, Bumpy Design www.bumpy.com

About the Author

Jakob Nielsen, Ph.D. is a User Advocate specializing in web usability and a principal of Nielsen Norman Group (www.nngroup. com), which he co-founded with Dr. Donald A. Norman, former vice president of Apple Research. Until 1998, Dr. Nielsen was a Sun Microsystems Distinguished Engineer and led that company's web usability efforts starting with the original design of SunWeb in early 1994. His previous affiliations include the IBM User Interface Institute, Bell Communications Research, and the Technical University of Denmark. Nielsen is the author and editor of 8 other books and more than 75 research papers on usability engineering, user interface design, and hypertext. He is also a frequent keynote presenter at industry conferences. Nielsen is the founder of the "discount usability engineering" movement for fast and simple ways of improving user interfaces. Nielsen's Alertbox column about web usability has been published on the Internet since 1995 (www.useit.com/alertbox) and currently has about 100,000 readers. He is also the usability columnist for Ziff-Davis Network's DevHead and a web design critic for Internet World magazine. He holds 46 U.S. patents, mainly on ways to make the Internet easier to use. Dr. Nielsen's website is at www.useit.com: It's text-only and pretty fast.

Author's Acknowledgments

I would like to thank the following for help in writing this book or in my web projects over the years: Franz Aman, Claire Amundsen, Rick Brennan, Bruce Browne, Marsh Chamberlain, Kreta Chandler, Debra Coelho, Steve Davis, Kathy Dickinson, Susan Doel, Meghan Ede, Karin Ellison, Susan Farrell, B.J. Fogg, Jonathan Fox, Michael Fuller, Don Gentner, Steve Gibson, Bob Glass, Rich Gold, Dana Greer, Chris Haaga, Melody Kean Haller, Martin Hardee, Perry Hewitt, Mark Hurst, Luice Hwang, Keith Instone, Matthew Johan, Chris Johnson, Hannah Kain, Wendy Kellogg, Erika Kindlund, Teresa Lau, Rick Levine, Judy Lindberg, Noel Lopez, Michael "Mac" McCarthy, Andrea Mankoski, Peter Merholz, Carl Meske, Rolf Molich, John Morkes, Jim Newton, Donald Norman, Larry Page, Judy Potzler, Bill Prouty, Darcy Provo, Janice Rohn, Victoria Ryan, Darrell Sano, Eric Schmidt, Hassan Schroeder, Hasmig Seropian, Will Snow, Jared Spool, David L. Stewart, Rory Swensen, John Tang, Bruce "Tog" Tognazzini, Nirav Tolia, Jeanie Treichel, Elizabeth Waymire, Ron Wilbur, and Debra Winters.

Also, even though I didn't work on many web projects with them, much of my thinking has been influenced by John M. Carroll, Susan Dumais, Dennis Egan, George Furnas, John Gould, Jim Hollan, Thomas K. Landauer, Mary Beth Rosson, Ben Shneiderman, Dennis Wixon, and Patricia Wright.

Jakob Nielsen

Publisher's Acknowledgements

We'd like to thank Jakob Nielsen, an extraordinary man, for his patience with an, at times, impatient publisher. Thanks also to Hannah Kain for her patience with the publisher as we asked her for an ever-increasing amount of Jakob's time near the end of this project. Thank you both for allowing us into your home and into your lives during the completion of this book.

Kudos as well to Kim Scott for an extraordinary job of turning the vision of a well-designed book into a reality. And special thanks to Jennifer Eberhardt.

A Message from New Riders

Jakob Nielsen is one of the busiest speakers and commentators in the world of high-tech because of his message and the eloquence with which he delivers it. His message is simple—at least on the surface—and is accessible to anyone who will listen (and multitudes do each year): Put USABILITY first. Practice SIMPLICITY.

The challenges and complexities to the 'put usability first' philosophy of design can begin when ideation turns to planning, and planning turns to implementation. The challenges never stop, and Jakob helps you to understand them and enable yourself to make the continual adjustments necessary to survive and prosper in the 'user-first' world of the Web.

The best thing about this book, along with what you'll learn about yourself and others who use the Web (and how to improve the usefulness of your website immeasurably), is that *Designing Web Usability* is flatout one of the best reads you'll encounter—in technology publishing or elsewhere. Jakob has a gift for communication that enables him to wrap his vision in a lucid, compelling discourse that appeals to academics and lay people, web designers and web users. *Designing Web Usability* holds this broad appeal because Jakob's message makes so much sense, while being masterfully communicated on so many levels.

Who said you can't have fun while expanding your horizons?

New Riders is honored to have worked with Jakob Nielsen over the past two years as he's written and refined *Designing Web Usability: The Practice of Simplicity*. We believe it's been well worth the wait. Let us know what you think...

How to Contact Us

As the reader of this book, *you* are our most important critic and commentator. We value your opinion and want to know what we're doing right, what we could do better, in what areas you'd like to see us publish, and any other words of wisdom you're willing to pass our way.

As the Executive Editor for the Graphics team at New Riders, I welcome your comments. You can fax, email, or write me directly to let me know what you did or didn't like about this book—as well as what we can do to make our books better.

Please note that I cannot help you with technical problems related to the topic of this book, and that due to the high volume of mail I receive, I might not be able to reply to every message.

When you write, please be sure to include this book's title, ISBN, and author, as well as your name and phone or fax number. I will carefully review your comments and share them with the authors and editors who worked on the book.

For any issues directly related to this or other titles:

Email: steve.weiss@newriders.com

Mail: Steve Weiss

Executive Editor

Professional Graphics & Design Publishing

New Riders Publishing 201 West 103rd Street

Indianapolis, IN 46290 USA

Visit Our Website: www.newriders.com

On our website you'll find information about our other books, the authors we partner with, book updates and file downloads, promotions, discussion boards for online interaction with other users and with technology experts, and a calendar of trade shows and other professional events with which we'll be involved. We hope to see you around.

Email Us from Our Website

Go to www.newriders.com and click on the Contact link if you

- Have comments or questions about this book
- Have a book proposal or are otherwise interested in writing with New Riders
- Would like us to send you one of our author kits
- Are an expert in a computer topic or technology and are interested in being a reviewer or technical editor
- Want to find a distributor for our titles in your area
- Are an educator/instructor who wishes to preview New Riders books for classroom use.

Call Us or Fax Us

You can reach us toll-free at (800) 571-5840 + 9 + 3567. Ask for New Riders. If outside the USA, please call 1-317-581-3500. Ask for New Riders.

You can fax us at 317-581-4663, Attention: New Riders.

Contents at a Glance

	Preface	2
1	Introduction: Why Web Usability?	8
2	Page Design	16
3	Content Design	98
4	Site Design	162
5	Intranet Design	262
6	Accessibility for Users with Disabilities	296
7	International Use: Serving a Global Audience	312
8	Future Predictions: The Only Web Constant Is Change	346
9	Conclusion: Simplicity in Web Design	378
	Recommended Readings	392
	Index	398

Table of Contents

	Preface	2
	Errata	4
	Book Layout	5
	Guide to This Book	5
1	Introduction: Why Web Usability?	8
	Art Versus Engineering	11
	The Competitive Bar Is High	11
	About the Examples	12
	A Call for Action	13
	What This Book Is Not	13
	Bad Usability Equals No Customers	14
	Why Everybody Designs Websites Incorrectly	14
2	Page Design	16
	Screen Real Estate	18
	Cross-Platform Design	25
	Where Are Users Coming From?	27
	Data Ink and Chart Junk	27
	The Car as a Web Browser	28
	Resolution-Independent Design	29
	Color Depth Getting Deeper	29
	Get a Big Screen	31
	Using Non-Standard Content	31
	Installation Inertia	33
	When Is It Safe to Upgrade?	33
	Helpful Super-Users	35
	Collect Browsers	36
	Separating Meaning and Presentation	36
	Platform Transition	37
	Response Times	42
	Data Lives Forever	43
	Predictable Response Times	44
	Server Response Time	45
	Speedy Downloads, Speedy Connections	46
	The Best Sites Are Fast	46
	Users Like Fast Pages	47
	Understanding Page Size	48
	You Need Your Own T1 Line	48
	Faster URLs	50
	Glimpsing the First Screenful	50
	Taking Advantage of HTTP Keep-Alive	51

	Linking	51
	Link Descriptions	55
	Link Titles	60
	Use Link Titles Without Waiting	60
	Coloring Your Links	62
	Link Expectations	64
	The Physiology of Blue	64
	Outbound Links	66
	Peoplelinks	66
	Incoming Links	74
	Linking to Subscriptions and Registrations	76
	Advertising Links	77
	Style Sheets	81
	Standardizing Design Through Style Sheets	82
	WYSIWYG	82
	Style Sheet Examples for Intranets	83
	Making Sure Style Sheets Work	84
	Frames	85
	<noframes></noframes>	85
	Frames in Netscape 2.0	86
	Borderless Frames	87
	Is It Ever OK to Use Frames?	91
	Frames as Copyright Violation	91
	Credibility	92
	Printing	94
	Conclusion	97
3	Content Design	98
	Writing for the Web	100
	The Value of an Editor	100
	Keep Your Texts Short	101
	Web Attitude	101
	Copy Editing	103
	Scannability	104
	Why Users Scan	106
	Plain Language	111
	Page Chunking	112
	Limit Use of Within-Page Links	115
	Page Titles	123
	Writing Headlines	124
	Legibility	125
	Online Documentation	129
	Page Screenshots	129
	Multimedia	131
	Auto-Installing Plug-Ins	131

Table of Contents

	Chent-side Multimedia	152
	Waiting for Software to Evolve	134
	Response Time	134
	Images and Photographs	134
	Image Reduction	135
	Animation	143
	Showing Continuity in Transitions	145
	Indicating Dimensionality in Transitions	145
	Illustrating Change over Time	145
	Multiplexing the Display	146
	Enriching Graphical Representations	146
	Animation Backfires	146
	Visualizing Three-Dimensional Structures	146
	Attracting Attention	147
	Video	149
	Streaming Video Versus Downloadable Video	150
	Audio	154
	Enabling Users with Disabilities to Use Multimedia Content	155
	Three-Dimensional Graphics	156
	Bad Use of 3D	156
	When to Use 3D	159
	Conclusion	160
	The Attention Economy	160
4	Site Design	162
	The Home Page	166
	How Wide Should the Page Be?	174
	Home Page Width	174
	Splash Screens Must Die	176
	The Home Page Versus Interior Pages	178
	Deep Linking	179
	Affiliates Programs	179
	Metaphor	180
	Shopping Carts as Interface Standard	188
	Alternative Terminology	188
	Navigation	188
	Where Am I?	188
	Navigation Support in Browsers	189
	Where Have I Been?	191
	Where Can I Go?	191
	Site Structure	198
	The Vice-Presidential Button	198
	Importance of User-Centered Structure	202
	Breadth Versus Depth	203
	The User Controls Navigation	214

	Help Users Manage Large Amounts of Information	217
	Design Creationism Versus Design Darwinism	218
	Reducing Navigational Clutter	221
	Future Navigation	221
	Avoid 3D for Navigation	222
	Subsites	222
	Search Capabilities	224
	Don't Search the Web	224
	Micro-Navigation	225
	Advanced Search	227
	Global Search	227
	The Search Results Page	230
	Page Descriptions and Keywords	231
	Use a Wide Search Box	233
	See What People Search For	237
	Search Destination Design	238
	Integrating Sites and Search Engines	238
	URL Design	246
	Compound Domain Names	246
	Fully Specify URLs in HTML Code	247
	URL Guessing	248
	Archival URLs	249
	Beware of the Os and Os	249
	Advertising a URL	250
	Supporting Old URLs	251
	Y2K URL	251
	User-Contributed Content	256
	Applet Navigation	256
	Double-Click	258
	Slow Operations	259
	Conclusion	259
5	Intranet Design	262
	Differentiating Intranet Design	
	from Internet Design	265
	Extranet Design	266
	Improving the Bottom Line Through Employee Productivity	270
	Average Versus Marginal Costs	276
	Intranet Portals: The Corporate Information Infrastructure	276
	Get Rid of Email	277
	Intranet Maintenance	279
	The Big Three Infrastructure Components:	
	Directory, Search, and News	279
	Intranet Design Standards	280
	Guidelines for Standards	281

Table of Contents vii

	Outsourcing Your Intranet Design	284
	Managing Employees' Web Access	284
	Hardware Standards	285
	Browser Defaults	286
	Search Engine Defaults	288
	Intranet User Testing	289
	Field Studies	290
	Don't Videotape in the Field	292
	Conclusion	293
6	Accessibility for Users with Disabilities	296
	Disabilities Associated with Aging	298
	Web Accessibility Initiative	298
	Assistive Technology	299
	Visual Disabilities	302
	ALT Attributes	303
	Auditory Disabilities	308
	Speech Disabilities	308
	Motor Disabilities	309
	Cognitive Disabilities	309
	Search Without Spelling	310
	Conclusion: Pragmatic Accessibility	311
7	International Use: Serving a Global Audience	312
	Internationalization Versus Localization	315
	Designing for Internationalization	315
	International Inspection	319
	Should Domains End in .com?	319
	Translated and Multilingual Sites	320
	Language Choice	324
	Multilingual Search	331
	Make Translations Bookmarkable	331
	Regional Differences	332
	International User Testing	333
	Overcoming the Language Gap	333
	Allow Extra Time for Tasks	334
	How Many Countries Should You Test?	335
	Thanking Your Participants	335
	Methods of Testing	336
	Travel Yourself	336
	Add a Few Days to Your Stay	336
	Remote User Testing	337
	Usability Labs for International Testing	338
	Self-Administered Tests	341

viii

8	Future Predictions: The Only Web Constant Is Change	346
	Long-Term Trends	348
	The Internet Is Hard	348
	The Anti-Mac User Interface	351
	The Invisible Computer	352
	Information Appliances	353
	Drawing a Computer	353
	WebTV	354
	Designing for WebTV	356
	Death of Web Browsers	362
	Slowly Increasing Bandwidth	363
	Metaphors for the Web	365
	The Telephone	366
	Different Media, Different Strengths	366
	Telephone Usability Problems	368
	Contact Tokens	369
	The Television	370
	Restructuring Media Space: Good-Bye, Newspapers	372
	Media Distinctions Caused by Technology	373
	Conclusion	376
9	Conclusion: Simplicity in Web Design	378
	Home-Run Websites	380
	Half-Minute Baseball Lesson	380
	User Survey: What Causes Repeat Traffic?	382
	Better Than Reality	383
	Best of Times or Worst of Times?	388
	Mouseclicks Vote	390
	Recommended Readings	392
	Books	394
	Usability	395
	Hypertext	395
	Web Technology	396
	Read My Next Book	396
	Index	398

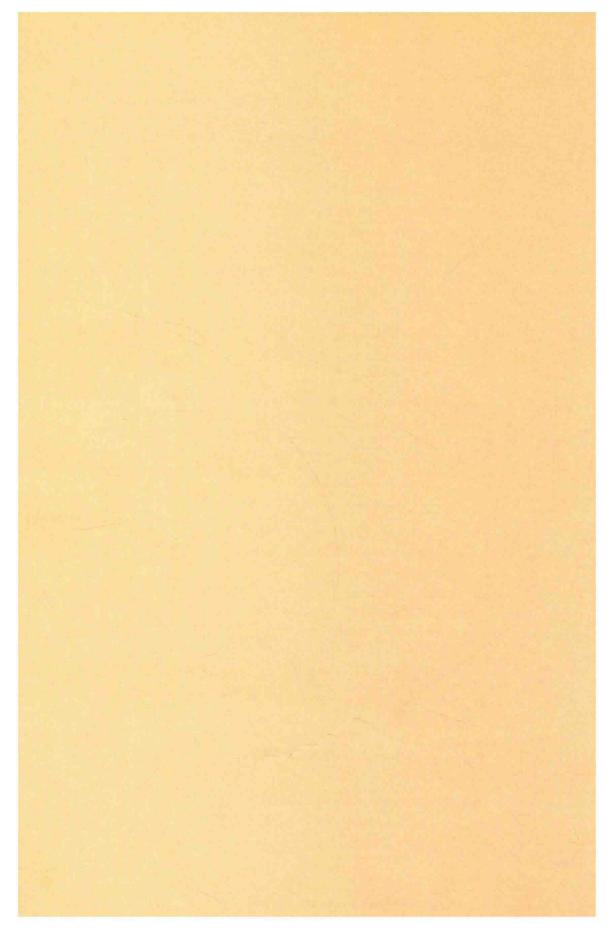
Table of Contents ix

Jakob Nielsen

Designing Web Usability



New Riders Publishing, Indianapolis, Indiana USA



Preface

"Enough, already, Jakob. Isn't it selfdefeating to publish on dead trees when you are writing about the Web?"

I am sure that a lot of readers will be asking this question, so let me answer it up front.