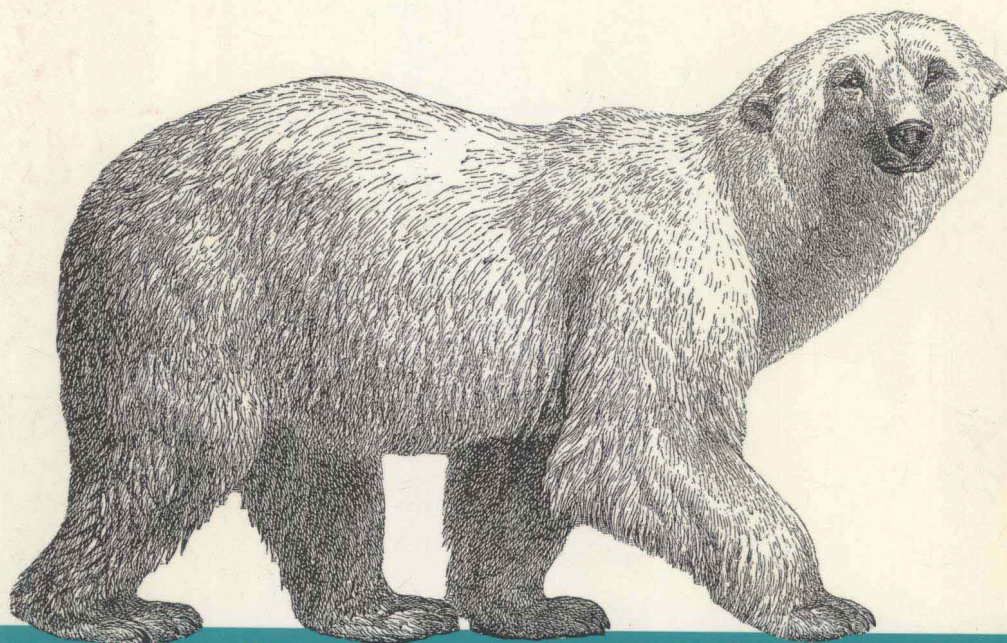


WWW 信息体系结构 (影印版)

2nd Edition



# Information Architecture

*for the World Wide Web*

REILLY®



Louis Rosenfeld & Peter Morville 著

清华大学出版社

第二版

# WWW 信息体系结构(影印版)

Information Architecture  
for the World Wide Web

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藏书章

*Louis Rosenfeld & Peter Morville*

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## Praise for Information Architecture for the World Wide Web

"It's been well worth the wait! This much expanded second version provides a holistic perspective on information architecture—something that wasn't possible earlier on when the concept was just beginning to be raised in the web space. It will be the starting place and the core reference resource for practicing and future information architects, as well as their managers. I highly recommend it to anyone who wants to make their ideas become real, and most importantly, of value to their end-user community."

—Mary Lee Kennedy, Microsoft

"In the first edition, Lou and Peter examined the emergence of a new species of technical professional—the IA. In this second edition, they expose the complex electronic ecosystem in which IA now exist. With wit, wisdom, and a pinch of whimsy, they give you what you need to be or work with an architect of the wired world."

—Bob Boiko, Lecturer, University of Washington iSchool & President, Metatorial Services Inc.

"What's big and throbbing? Your headache. It's caused by the uncontrollable flood of web pages that you have to deal with, day after day. The pain you feel is the result of a web site that lacks structure and is getting more and more out of control. You want relief? The 2nd Edition of Information Architecture for the World Wide Web is the cure."

—John S. Rhodes, WebWord.com—Industrial Strength Usability

"The world will be a better place when web designers read this book. It's smart, funny, and artfully distills years of the authors' hard-won experience. Information Architecture is unlike any other book on web design I know in that it tackles political/organizational challenges as well as content, structure and user interface. This is not design-lite, but a deep treatment of fundamental issues of information presentation that advances the state of the art. Light years ahead of the competition."

—Bonnie Nardi, Co-author of *Information Ecologies: Using Technology with Heart*, MIT Press, 1999.

"If you are developing large-scale Web sites with a complex information architecture, this book will explain everything you need. Rosenfeld and Morville define the art and science of information architecture. This book is beneficial for both the novice or the experienced

professional. Once again, Rosenfeld and Morville have written the Bible of information architecture. This book should be on every Web developer's bookshelf."

—Cameron Barrett, Design Technologist, [camworld.com](http://camworld.com)

"Clearly written, a powerful use of simple metaphors to make complex points. Restores information management to its rightful place in management thinking."

—Dave Snowden, Director of the Cynefin Centre for Organisational Complexity, IBM Global Services

"Perhaps the only good thing about the dot.com bust is that it finally gave Lou [Rosenfeld] and Peter [Morville] time to finish their long awaited second edition of THE best book on Web design. As a reward for our patience, they've added tons of things they've learned in the intervening years, expanding it into the definitive book on Information Architecture. If you build Web sites, you need a copy on your bookshelf."

—Steve Krug, Author of *Don't Make Me Think: A Common Sense Approach to Web Usability*

"In this definitive text for the emerging profession of information architecture, Rosenfeld and Morville provide a wealth of experience-based examples and guidance for practitioners and students alike."

—Gary Marchionini, University of North Carolina at Chapel Hill

## About the Authors

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**Peter Morville** ([morville@semanticstudios.com](mailto:morville@semanticstudios.com)) is president and founder of Semantic Studios, a leading information architecture and strategy consultancy. Since 1994, he has played a major role in shaping the modern practice of information architecture design. As chief executive officer of Argus Associates (1994–2001), Peter helped build one of the world's most respected information architecture firms, serving clients such as AT&T, Barron's, Ernst & Young, HP, IBM, L. L. Bean, Microsoft, Procter & Gamble, Vanguard, and the Weather Channel. An internationally distinguished speaker, Peter provides keynotes and seminars on such topics as user experience, knowledge management, and findability. His work has been featured in many publications including *Business Week*, *Fortune*, MSNBC, and the *Wall Street Journal*.

Peter holds an advanced degree in library and information science from the University of Michigan, where he now teaches a popular graduate course.

A long-time information architecture evangelist, **Lou Rosenfeld** is now an independent consultant, helping such clients as Ford and Hewlett-Packard develop their information architecture strategies and in-house expertise. Lou co-founded industry leader Argus Associates in 1990, and was its president from 1993–2001. He is a frequent conference presenter, and teaches highly popular information architecture seminars for the NielsenNorman Group's User Experience Conference series. Lou played a leading role in creating ASIS&T's successful information architecture summits and many other initiatives to develop and serve the broader information architecture community. He is the author and editor of numerous books, book chapters, and articles and has contributed regularly to *Web Review*, *CIO*, and *Internet World* magazines.

Lou has an advanced degree in information and library studies from the University of Michigan, where he has also taught graduate courses. Lou blogs at [www.louisrosenfeld.com](http://www.louisrosenfeld.com), and lives in Ann Arbor, Michigan, with his wife, Mary Jean Babic, and Schwa the cat.

## Colophon

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Our look is the result of reader comments, our own experimentation, and feedback from distribution channels. Distinctive covers complement our distinctive approach to technical topics, breathing personality and life into potentially dry subjects.

The animal featured on the cover of *Information Architecture for the World Wide Web*, Second Edition, is a polar bear (*Ursus maritimus*). Polar bears live primarily on the icy shores of Greenland and northern North America and Asia. They are very strong swimmers, and rarely venture far from the water. The largest land carnivore, male polar bears weigh from 770 to 1400 pounds. Female polar bears are much smaller, weighing 330 to 550 pounds. The preferred meal of polar bears is ringed



seals and bearded seals. When seals are unavailable they will eat fish, reindeer, birds, berries, and trash.

Polar bears are, of course, well adapted to living in the Arctic Circle. Their black skin is covered in thick, water-repellent, white fur. Adult polar bears are protected from the cold by a layer of blubber that is more than four inches thick. They are so well insulated, in fact, that overheating can be a problem. For this reason they move slowly on land, taking frequent breaks. Their large feet spread out their substantial weight, allowing them to walk on thin ice surfaces that animals weighing far less would break through. Because food is available year-round, most polar bears don't hibernate. Pregnant females are the exception, and the tiny 1 to 1-1/2 pound cubs are born during the hibernation period.

Polar bears have no natural enemies. Their greatest threat comes from hunting, but in the past 15 years most governments have placed strict limits on the hunting of polar bears. Their population has more than doubled in that time, and is now estimated to be between 21,000 and 28,000. They are not considered to be endangered. They are extremely aggressive and dangerous animals. While many bears actively avoid human contact, polar bears tend to view humans as prey. In encounters between humans and polar bears, the bear almost always wins.

Emily Quill was the production editor and copyeditor for *Information Architecture for the World Wide Web*, Second Edition. Matt Hutchinson was the proofreader. Sheryl Avruch and Jane Ellin provided quality control; Phil Dangler provided production assistance. Fred Leise wrote the index.

Edie Freedman designed the cover of this book using a 19th-century engraving from the Dover Pictorial Archive. Emma Colby produced the cover layout with QuarkXPress 4.1 using Adobe's ITC Garamond font.

Melanie Wang designed the interior layout, based on a series design by David Futato. This book was converted to FrameMaker 5.5.6 with a format conversion tool created by Erik Ray, Jason McIntosh, Neil Walls, and Mike Sierra that uses Perl and XML technologies. The text font is Linotype Birka; the heading font is Adobe Myriad Condensed; and the code font is LucasFont's TheSans Mono Condensed. The illustrations that appear in the book were produced by Robert Romano and Jessamyn Read using Macromedia FreeHand 9 and Adobe Photoshop 6. The tip and warning icons were drawn by Christopher Bing. This colophon was written by Clairemarie Fisher O'Leary.

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**WWW 信息体系结构 (影印版)**

**Information Architecture  
for the World Wide Web**



# O'Reilly & Associates 公司介绍

O'Reilly & Associates 公司是世界上在 UNIX、X、Internet 和其他开放系统图书领域具有领导地位的出版公司，同时是联机出版的先锋。

从最畅销的*The Whole Internet User's Guide & Catalog*(被纽约公共图书馆评为20世纪最重要的50本书之一)到GNN(最早的Internet门户和商业网站),再到WebSite(第一个桌面PC的Web服务器软件), O'Reilly & Associates 一直处于Internet发展的最前沿。

许多书店的反馈表明, O'Reilly & Associates 是最稳定的计算机图书出版商——每一本书都一版再版。与大多数计算机图书出版商相比, O'Reilly & Associates 公司具有深厚的计算机专业背景,这使得O'Reilly & Associates形成了一个非常不同于其他出版商的出版方针。O'Reilly & Associates 所有的编辑人员以前都是程序员,或者是顶尖级的技术专家。O'Reilly & Associates 还有许多固定的作者群体——他们本身是相关领域的技术专家、咨询专家,而现在编写著作, O'Reilly & Associates 依靠他们及时地推出图书。因为O'Reilly & Associates 紧密地与计算机业界联系着,所以O'Reilly & Associates 知道市场上真正需要什么图书。

# 出版说明

计算机网络与通信技术的成熟与广泛应用,以及 Internet 与 Web 的迅速发展,为人类的工业生产、商业活动和日常生活都带来了巨大的影响。网络与通信技术在我国的很多领域也已经广泛应用,并且取得了巨大的效益。然而,该领域的技术创新的速度之快也是有目共睹的。为了帮助国内技术人员和网络管理人员在第一时间掌握国外最新的技术,清华大学出版社引进了美国 O'Reilly & Associates 公司的一批、在计算机网络理论和 Opensource 方面代表前沿技术或者在某专项领域内享有盛名的著作,以飨读者。本套丛书采用影印版的形式,力求与国外图书“同步”出版,“原汁原味”地展现给读者各种权威技术理论和技术术语,适合于相关行业的高级技术人员、科研机构研究人员和高校教师阅读。

本批图书包括以下几种:

- 《802.11 安全手册 (影印版)》
- 《构建 Internet 防火墙 (影印版)》
- 《Java 技术手册 (影印版)》
- 《Open Sources (影印版)》
- 《WWW 信息体系结构 (影印版)》
- 《LINUX RAID 管理 (影印版)》
- 《Peer-to-Peer (影印版)》
- 《Java 实例技术手册 (影印版)》
- 《Free As In Freedom (影印版)》
- 《Unix 操作系统 (影印版)》

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## Foreword

On the Web, if a site is difficult to use, most people will leave. On an intranet, if employees perform their tasks more slowly due to difficult design, the company bears the cost of the reduced productivity. In fact, I estimate that low intranet usability costs the world economy \$100 billion per year in lost employee productivity. This may not be the most important problem facing the planet, but it's not a trifling issue either.

Usability is an important, though not the only, determinant for the success of a web site or an intranet. Information architecture is an important, though not the only, determinant for the usability of a design. There are other issues, but you ignore information architecture at your peril.

Critics may say that users don't care about information architecture. They don't want to learn how a web site is structured; they just want to get in, get their task done, and get out. Users focus on tasks, not on structure. But it's because users don't care about the structure of a web site that it is so important to get the information architecture right in the design. If users did bother to study our web sites, they could surely learn how an obscure or illogical structure works and utilize that knowledge to improve their task performance. Humans are flexible creatures and can adapt to hostile environments if they choose to do so.

But since we know that users won't spend time learning our information architecture, we have to spend resources to design the best information architecture we can. Allow users to focus on their tasks, and let information architects be the ones to spend time worrying about the structure of the web site or intranet. This is a good division of labor, and the pay-off from good information architecture is immense. The more that answers are located in the places you look for them, the easier the design will feel to users, and the more successful the project. There will be more sales (for e-commerce sites), better reputation for good service (for marketing sites), and less loss of productivity (for intranets).

I am a great believer in having professional information architects design the structure of professional information projects such as corporate web sites and intranets. But I also think there will be an increasing role for personal information architecture in the future. It will soon be time to teach a simplified version of the discipline to high school students, and possibly even to bring it into elementary schools as well.

The modern world is one of information overload; we are constantly bombarded by an inflow of messages, and we ought to read much more information than we have time for. Keeping yourself from drowning in this morass of information will require personal information architecture skills for problems like structuring email folders and computer files as well as the ability to manage advanced search features.

In the long run, personal information architecture may turn out to be even more important than corporate information architecture. For now, though, read this second edition of *Information Architecture for the World Wide Web* and get your web site and intranet in shape to support your customers and employees. Good information architecture makes users less alienated and suppressed by technology. It simultaneously increases human satisfaction and your company's profits. Very few jobs allow you to do both at the same time, so enjoy.

—Jakob Nielsen  
[www.useit.com](http://www.useit.com)

Dr. Jakob Nielsen is the author of *Designing Web Usability: The Practice of Simplicity* and *Homepage Usability: 50 Websites Deconstructed*.

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# Preface

*Those things that hurt, instruct.*

—Ben Franklin

In late 1999, when this book had been out for a year and a half, our editor told us to get cracking on the second edition. The folks at O'Reilly are fully aware that it takes eighteen months for authors to forget the pain of writing, not to mention our vows to never do it again. Suitably forgetful, we agreed. Now it's summer of 2002, and we're just finishing. Why did it take us two and a half years?

Well, a lot happened in that intervening period. Remember, we were all running on Internet time. Investors were throwing money at all things Web. Companies were building web sites at a frenetic pace. "Information architect" suddenly became a hot job title, and demand for information architecture expertise soared.

New people brought fresh perspectives to the field. Information architects began to connect with one another. A host of web sites, discussion lists, professional conferences, local cocktail hours, and other trappings of a healthy new community emerged.

In those heady times, we were actively growing our information architecture consulting company, Argus Associates. When we wrote the first edition, there were five Argonauts, all librarians by training. By late 2000, Argus was a professionally managed firm with a staff of forty. We had built an interdisciplinary information architecture practice, hiring specialists with expertise in usability engineering, thesaurus design, ethnography, information retrieval, and technology evaluation. But we weren't about to slow down. We had ambitious plans, one of which was to write the second edition.

But as many Greek and Roman tragedies forewarn, mortals plan and the gods laugh. In other words, the Web bubble burst, corporate spending took a dive, and it became difficult to justify investments in consulting, especially in new and intangible services like information architecture. Suddenly Argus was out of business. And

for many new entrants to the field, getting a job as an information architect became nearly impossible. Things were bad all over.

Life rarely works according to plan, but often there's a silver lining. For us, the demise of Argus granted the time, perspective, and motivation to finally write the second edition. After all, failure can be a better teacher than success. We've had our share of both, and we've tempered our enthusiasm for information architecture with an appreciation for the realities of the marketplace.

We've tried to address these realities in this book by explaining how to make the case for information architecture in unsupportive environments, and how to deal with political and cultural issues while trying to get your work done. We also describe a richer, more mature methodology that draws from many disciplines.

We are tremendously excited by the diversity, creativity, compassion, and resilience of the information architecture community. In the grand scheme of things, we are small in number. But as architects, designers, and teachers in these formative years of cyberspace, we have the opportunity to make a big impact. Let's get cracking!

## What's New in the Second Edition

As you can tell by this book's length—more than double that of the first edition—much has changed. In fact, we've almost written an entirely new book.

We've updated the chapters on organization, labeling, navigation, and searching, and illustrated the interconnectedness of these systems in a new chapter on thesauri, controlled vocabularies, and metadata. And we've expanded the methodology chapters to include a more interdisciplinary collection of tools and techniques. We've complemented the top-down strategies of the first edition with bottom-up approaches that enable distributed, emergent solutions.

A whole new section addresses the opportunities and challenges of practicing information architecture, while another section discusses how that work impacts and is influenced by the broader organizational context. New case studies provide models for creating enterprise intranet portals and online communities. Finally, we've referenced a wealth of essential information architecture resources, many of which did not exist a few years ago.

## Organization of This Book

This book is divided into six sections and twenty-one chapters, progressing from fundamentals to advanced topics. It breaks down as follows.

Part I, *Introducing Information Architecture*, provides an overview of information architecture for those new to the field and experienced practitioners alike, and comprises the following chapters:

#### Chapter 1, *Defining Information Architecture*

This chapter offers definitions and analogies, shows how information architecture relates to other fields, and explains why it matters at all.

#### Chapter 2, *Practicing Information Architecture*

This chapter discusses the qualities and skills essential to the professional information architect, and explains where and when the work should happen.

#### Chapter 3, *User Needs and Behaviors*

This chapter sets the stage for information architecture design by helping us better understand how people interact with information.

Part II, *Basic Principles of Information Architecture*, includes chapters on the fundamental components of an architecture, illustrating the interconnected nature of these systems. It comprises the following chapters:

#### Chapter 4, *The Anatomy of an Information Architecture*

This chapter helps you visualize the nuts and bolts of an architecture, and introduces the systems covered in subsequent chapters.

#### Chapter 5, *Organization Systems*

This chapter describes ways to structure and organize sites to meet business goals and user needs.

#### Chapter 6, *Labeling Systems*

This chapter presents approaches for creating consistent, effective, and descriptive labels for a site.

#### Chapter 7, *Navigation Systems*

This chapter explores the design of browsing systems that help users understand where they are and where they can go within a site.

#### Chapter 8, *Search Systems*

This chapter covers the nuts and bolts of searching systems, and describes approaches to indexing and the design of search result interfaces that can improve overall performance.

#### Chapter 9, *Thesauri, Controlled Vocabularies, and Metadata*

This chapter shows how vocabulary control can connect these systems and improve the user experience.

Part III, *Process and Methodology*, covers the tools, techniques, and methods to take you from research to strategy and design to implementation of an information architecture. It comprises the following chapters:

#### Chapter 10, *Research*

This chapter explains the discovery process necessary to create a foundation of understanding.



### Chapter 11, *Strategy*

This chapter presents a framework and methodology for defining the direction and scope of your information architecture.

### Chapter 12, *Design and Documentation*

This chapter introduces the deliverables and processes required to bring your information architecture to life.

Part IV, *Information Architecture in Practice*, is a series of short essays that provide practical tips and philosophical advice for those doing the work of information architecture, and comprises the following chapters:

### Chapter 13, *Education*

This chapter explains how to enter the field and how to keep learning, drawing from traditional and novel educational forums.

### Chapter 14, *Ethics*

This chapter exposes the moral dilemmas inherent in information architecture practice.

### Chapter 15, *Building an Information Architecture Team*

This chapter introduces the specialist roles beginning to emerge within the field, and addresses the transition from performing short-term projects to building sustainable programs.

### Chapter 16, *Tools and Software*

This chapter covers a diverse set of software applications and technologies that can assist information architects and power information architectures.

Part V, *Information Architecture in the Organization*, addresses the business context of practicing and promoting information architecture, and comprises the following chapters:

### Chapter 17, *Making the Case for Information Architecture*

This chapter provides guidance for those who must sell the value of information architecture to clients and colleagues.

### Chapter 18, *Business Strategy*

This chapter notes similarities and dependencies between the fields of information architecture and business strategy, explaining how we can work toward competitive advantage.

### Chapter 19, *Information Architecture for the Enterprise*

This chapter lays out a broad entrepreneurial framework for supporting the creation of information architecture services to serve the organization over a long period of time.

Part VI, *Case Studies*, describes the evolution of two large and very different information architectures, illustrating best practices along the way. It comprises the following two chapters:

## Chapter 20, *MSWeb: An Enterprise Intranet*

This chapter presents the story of how a small team at one of the world's most powerful corporations has been able to create a successful and sustainable intranet information architecture.

## Chapter 21, *evolt.org: An Online Community*

This chapter shows how a well-designed participation economy can produce an emergent information architecture that can be used and maintained by a distributed community of volunteers.

The Appendix, *Essential Resources*, is a selective list of pointers to the most useful information architecture resources available today.

# Audience for This Book

Who do we hope to reach with this new edition? In short, anyone who's interested in information architecture, and maybe a few who aren't. We're information architecture evangelists at heart.

This second edition is necessary because *you*, the readers and practitioners of information architecture, have changed dramatically over the past few years. Many of you are completely new to the field, while some of you now have years of experience under your belts. For better or for worse, we've tried to meet the needs of both groups. While we intend this edition to serve as a useful introduction, we hope many battle-scarred practitioners will find the new material helpful as they make their way through today's information technology and business environments.

Finally, this is *our* take on information architecture. Many of our colleagues are also now writing about the subject, and we are grateful that so many smart people are sharing their experiences and insights. We look forward to continuing to learn from them. You should too. Buy their books, read their articles, and find ways to share what you know. The more perspectives, the better. Only by sharing as individuals can we learn as a community.

# Conventions for This Book

## *Italic*

Is used for URLs, email addresses, and for emphasis.

## Constant width

Is used for code examples.



Indicates a tip, suggestion, or general note.