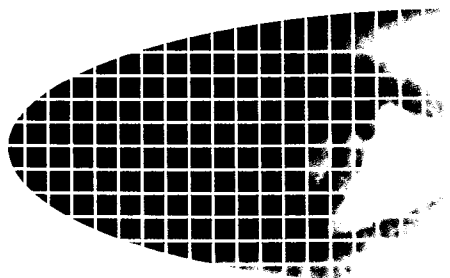# Weaving THE WEB

THE ORIGINAL DESIGN AND ULTIMATE DESTINY OF THE WORLD WIDE WEB

"[An] important account of how, when, where, and why [Berners-Lee] cooked up the web— well worth reading."
—NEW YORK TIMES BOOK REVIEW

Foreword by MICHAEL DERTOUZOS, *Director of MIT Laboratory for Computer Science*

TIM BERNERS-LEE

WITH MARK FISCHETTI

WEB
TIM BERNERS-LEE

Weaving the Web

THE ORIGINAL DESIGN
and ULTIMATE DESTINY
of the WORLD WIDE WEB
BY ITS INVENTOR

TIM BERNERS-LEE

with MARK FISCHETTI

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To Nancy

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Acknowledgments

A book is quite a project. I had thought about one from time to time, but did not take it on until Michael Dertouzos introduced me to Mark Fischetti as someone who, unlike me, could actually make it happen without stopping everything for a year. And so began the telling of the story, past, present, and future. Without Mark this book would never have been more than an idea and some bits of unordered web pages. I owe great thanks to Mark for applying his ability to find the thread running through my incoherent ramblings and then a way to express it simply.

Mark and I together owe thanks to everyone else involved in this process: to Michael for the idea of doing it and the encouragement, to Ike Williams for organizing it, and to Liz Perle at Harper San Francisco for her excruciating honesty and insistence that the book be what it could be. William Patrick played a great role in that step, helping us get it to a form with which we were all happier. We all have to thank Lisa Zuniga and the production team for turning the bits into a book. If you are reading this on paper, then the miracle of coordination must have been pulled off despite all my missed deadlines.

Many of these people mentioned have suffered the shock of meeting my stubbornness at wanting to call the shots over working

methods and ways of transferring data. I apologize . . . this time: Next time, we'll do it all online!

The book owes its existence indirectly to everyone who has been involved in making the dream of the Web come true. One of the compromises that is part of a book is that some occasions and activities turn out to be appropriate for showing what life was like and what the principles behind it were. Others, while just as important, don't turn up as examples in the narrative. So the index of the book doesn't serve as a hall of fame, as plenty of people have necessarily been left out or, perhaps even more strangely, it was only practical to describe one particular part of their many contributions. All the consortium team (W3T), present and alumni (listed on the www.w3.org site), are priceless people—working with them is great.

I would like to thank permanently, irrespective of this book, everyone who has taken time out to move the Web onward for the common good. For everyone who has helped, there have also been the managers and family who actively or passively provided encouragement. For me, the managers were Peggie Rimmer and Mike Sendall at CERN, whose wisdom and support have been very special to me.

To thank my immediate family here would suggest I were only thanking them for helping with the book, and for putting up with my strange behavior during book crises. The support you three have given me is more than that—it is a sense of perspective and reality and fun that underlies everything we do, of which the Web and this has been one, though a notable, part.

Tim Berners-Lee
Cambridge, Massachusetts

F o r e w o r d

Weaving the Web is a unique story about a unique innovation, by a unique inventor.

Amid the barrage of information about the World Wide Web, one story stands out—that of the creation and ongoing evolution of this incredible new thing that is surging to encompass the world and become an important and permanent part of our history. This story is unique because it is written by Tim Berners-Lee, who created the Web and is now steering it along exciting future directions. No one else can claim that. And no one else can write this—the true story of the Web.

Tim's innovation is also unique. It has already provided us with a gigantic Information Marketplace, where individuals and organizations buy, sell, and freely exchange information and information services among one another. The press, radio, and television never got close; all they can do is spray the same information out from one source toward many destinations. Nor can the letter or the telephone approach the Web's power, because even though those media enable one-on-one exchanges, they are slow and devoid of the computer's ability to display, search, automate, and mediate. Remarkably—compared with Gutenberg's press, Bell's telephone, and Marconi's radio—and well before reaching its

ultimate form, Berners-Lee's Web has already established its uniqueness.

Thousands of computer scientists had been staring for two decades at the same two things—hypertext and computer networks. But only Tim conceived of how to put those two elements together to create the Web. What kind of different thinking led him to do that? No doubt the same thinking I see driving him today as he and the World Wide Web Consortium team that he directs strive to define tomorrow's Web. While the rest of the world is happily mouthing the mantra of electronic commerce, he is thinking of the Web as a medium that would codify, in its gigantic distributed information links, human knowledge and understanding.

When I first met Tim, I was surprised by another unique trait of his. As technologists and entrepreneurs were launching or merging companies to exploit the Web, they seemed fixated on one question: "How can I make the Web mine?" Meanwhile, Tim was asking, "How can I make the Web yours?" As he and I began planning his arrival at the MIT Laboratory for Computer Science and the launching of the World Wide Web Consortium, his consistent aim was to ensure that the Web would move forward, flourish, and remain whole, despite the yanks and pulls of all the companies that seemed bent on controlling it. Six years later, Tim's compass is pointed in exactly the same direction. He has repeatedly said no to all kinds of seductive opportunities if they threatened, in the least, the Web's independence and wholeness, and he remains altruistic and steadfast to his dream. I am convinced that he does so not only from a desire to ensure the Web's future, but also from a wellspring of human decency that I find even more impressive than his technical prowess.

When I first suggested to Tim that he write this book, and having just finished one myself, I was envisioning a series of books from the MIT Laboratory for Computer Science (LCS) in which we would discuss in everyday language our innovations and their social impact. Many people in the world believe that technology is dehumanizing us. At LCS, we believe that technology is an inseparable child of humanity and that for true progress to occur, the two must walk hand in hand, with neither one acting as servant to the other. I thought it would be important and interesting for the world to hear from the people who create our future rather than from some sideline futurologists—especially when those innovators are willing to expose the technical forces and societal dreams that drove them to their creations. Tim has risen to this challenge admirably, exposing his deep beliefs about how the Web could evolve and shape our society in ways that are fresh and differ markedly from the common wisdom.

In *Weaving the Web*, Tim Berners-Lee goes beyond laying out the compelling story of the Web: He opens a rare window into the way a unique person invents and nurtures a unique approach that alters the course of humanity.

Michael L. Dertouzos

Michael L. Dertouzos is the director of the MIT Laboratory for Computer Science and the author of the book *What Will Be*.