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■ Master and Optimize Web  
Browsers

■ Harvest the Internet's Rich  
Information Resources

■ Install and Use the Latest  
Graphical Internet Tools:

WS\_FTP

Fetch

WSGopher

Eudora



Foreword by Vinton G. Cerf, President, The Internet Society



# THE NEW INTERNET NAVIGATOR<sup>TM</sup>

Paul Gilster

Mark Annerman '95



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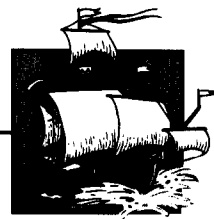
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**For Eloise**

"Whispering I knew not what of wild and sweet,  
Like that strange song I heard Apollo sing,  
While Ilion like a mist rose into towers."

*Tennyson*





# Foreword

Unlike frontiers with well-defined and precisely fixed boundaries, the Internet frontier is in a constant state of flux and renewal. As quickly as the frontier is settled, new islands, oceans, and even whole continents become a part of it. As a virtual space of software, networking, and computers, the Internet is infinitely renewable and infinitely adaptable, and it grows and changes every day.

The increasingly eclectic character of the Internet and its penetration into almost every corner of the globe have created a rich and often unpredictable environment in which common interests and experience are sometimes more important than the geopolitical and social boundaries that separate its users. This mix of diversity and cohesion has created a collection of global villages with the unusual property that many people on the Internet live in more than one global village at a time.

The scope, complexity, and richness of the system we have today was not predicted. Looking at the Internet of 1995 even with 1990 eyes (let alone from the vantage point of 1973), one can only wonder at this (r)evolution. And (r)evolution is the right term. Just as complex life forms arise from simpler ones, genetic experiment by genetic experiment, the Internet is an evolving and organic virtual environment. But it is also a revolution because, viewed from the present, it is transforming our culture.

The extraordinary freedom of expression and accessibility of information on the Internet is revolutionary. In a way, the Internet has made every author a publisher and given new meaning to the phrase desktop publishing. Our social and business practices are becoming visibly affected. Our educational system may undergo a profound sea change as tools for producing and sharing knowledge blend with new ways of drawing students into learning experiences. Already, legislators are wondering what to make of an on-line electorate. There are, of course, downsides to the flood of information on the Internet. The most obvious is the difficulty of simply *finding* items in the vast seas of available material. Consumers of information or their proxies (*knowbots*) have had to become truly selective and thoughtful voyagers, ceaselessly sorting through and evaluating the information available to them as they sail the electronic oceans and cast their nets and troll for valuable content. Indeed, like gold in the ocean, the valuable content of

the Internet is enormous in quantity but hard to find, and more of it is created daily. Browsing is giving way to efforts to index and catalog a burgeoning sea of information and creating new business opportunities in the process.

We already know there are some unwelcome side effects, such as *flaming*, which seems to be exacerbated by a medium of communications that often invites instant responses rather than thoughtful correspondence. Many are troubled by the very freedom of expression the Internet invites and supports. There have been calls for some form of censorship or at least access controls for minors who have access to the Internet. Others decry the use of the network as a rallying point for groups whose opinions and attitudes, in their view, seem antisocial, destructive, or even treasonous. The technical and legal framework of Internet operation will have to cope with the turmoil of rapid growth through its own process of evolution. But much of what users *will* find, offered as a labor of love and sharing, is of extraordinary quality and value. We can doubtless look forward to extensions of the Internet that will lead to richer, more expressive modes of communication—including enhanced sound, graphics, and video—just as we hope that users will avail themselves of these tools in humane and intelligent ways.

The World Wide Web has burst on the Internet in a cascading explosion of new applications, reducing the apparent complexity of finding and using Internet-based information while increasing the richness of its texture. WWW has augmented the Internet and will almost certainly continue to evolve toward richer capabilities. The recent demonstration of dynamic software exchange from server to client or the reverse (such as Sun Microsystems' Hot Java) suggests that flexibility will become ever easier to provide. "Oh, you don't have a viewer for the material I just found for you? Here, take this piece of software and run it."

The late Ithiel de sola Pool called these electronic and computer-based tools the "technologies of freedom." Of course, that, too, has its downside. Hidden in that phrase is all the good and the not-so-good of the human animal. Charity and fellowship will cross paths with the coarse and the venal, but that is the price we pay for freedom of information.

Long-term citizens of the network are struggling with the side effects of growth from the small-town, collegial atmosphere of the early days to the clamor of a seemingly boundary-less megalopolis. As business uses of the Internet mature, far more attention is being paid to security, privacy, and authenticity of transactions taking place in the Internet environment. The virtual communities found in the Internet make me think of Stephen Hawking's description of the universe at the subnuclear level. The seemingly placid vacuum of space is in fact a roiling mass of energy in which particle pairs form and merge in fleeting femto-seconds. These vacuum fluctuations have no energy limits, and an entire universe, such as the one we know, could possibly arise as a consequence. The Internet seems to me a bit like that, vibrant with the energy and the ideas of millions of producers and consumers. Communities will form and coalesce, with some subsiding and many persisting and evolving.

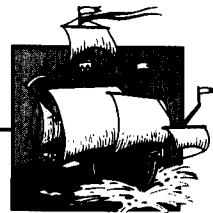
To take just one example, consider one interesting effect of the Internet—the growing worldwide use of English. Other languages *are* used on the Internet, and there has been recent work to improve the technical standards for e-mail and other communications protocols to accommodate more than the use of the ASCII (English-language-based) character set encoding. Indeed, two phenomena are discernible. English is widely used, but other languages are becoming increasingly common. Many offerings found on the net are multilingual ("Press this button for English, this one for French,

and that one for Japanese.”). While *lingua anglica* becomes commonplace on the Net, I believe we will also preserve and even extend the appreciation and use of other languages. The Internet will preserve and extend the richness of our global, cultural heritage.

In this book, Paul Gilster has done a remarkable job of describing the dynamic, daily growth and change that characterizes the Internet. He has also ably summarized the important points in the history of the system, and suggested the breadth and diversity of the communities that use it today. And, perhaps most important, he has amassed a truly astonishing list of resources and service providers. I learned of many new ones, so his new editions are finding welcome space in my reference collection.

As Gilster points out, any medium such as print has the simultaneous blessing and curse of a fixed nature. The Internet is changing so rapidly that anything written about it in immutable form is bound to be out of date. This book, however, unlocks many doors and leads you to sources of information on the Internet that you can use to stay up to date. By decoding the argot of the Internet and empowering its readers to become modern day Lewises and Clarks, this book will show you how the Internet offers an endless journey of discovery along its infinitely changing frontier. You’ll be welcome there.

Vinton G. Cerf  
Annandale, Virginia  
July 1995



## *Preface to the Third Edition*

When you're shooting at a moving target, the usual technique is to lead just enough so that your shot hits the place where the target *will* be; obviously, your timing had better be good. The Internet is a moving target, but trying to lead it can be a confounding experience. The changes we've seen since the second edition of *The Internet Navigator* have been so immense, and ongoing, that there have been days when I thought the network was totally out of control. Master one set of tools and another arose. Teach the basics of Mosaic, and pretty soon everyone was trying Netscape. Master Netscape, and the Net begins to buzz with talk of third-generation systems like Sun Microsystems' Hot Java, and Silicon Graphics' WebSpace. Where does it all end?

But there is a ready answer, and it's a positive one. While we can't know the minutiae of how technology will evolve six months, or six years, from now, we can state an unequivocal fact: the Internet is getting easier to use with every passing day. The huge user revolution that has occurred within the last two years has had two major effects. First, it has brought a population of home and small business users onto the Internet for the first time. Second, it has energized service providers, in the heat of competition, to lower the cost of the essential SLIP and PPP connections that make it possible to use graphical Internet tools. Two years ago, Mosaic wasn't available to most new users because they didn't have the kind of connection it demanded. Today, Mosaic, Netscape, the other Web browsers and a host of shareware, freeware, and commercial tools are providing ever new and ever easier to use graphical environments that have people exploring this exciting realm.

It was clear in approaching this third edition that I needed to reflect this sea-change in access methods. *The Internet Navigator* has always been written for the modem user who, for most of the Internet's life, was limited to a character-based interface through a Unix shell account. In many parts of the world, this is still the major means of access, and these users will find that this book continues to speak to them and to illustrate how they can use the network. But I've also moved into the SLIP/PPP realm with a host of examples and illustrations of the various graphical client programs at work. The idea is not to insist that you use a particular software program for your Net access, but rather,



to say that no matter which tool you use, the underlying Net remains the same. Master Internet principles, then, and your choice of tools is yours.

Even as the access methods we use on the Internet have changed, so too has the nature of what we find there. The World Wide Web has grown at rates that have astonished even the most optimistic network aficionados. And, just as important, a host of new search tools has arisen that make using the Web a productive, rather than a fascinating but generally fruitless, experience. With business-building Web sites, individuals setting up their own home pages, and magazines and newspapers coming on-line in abundance, surely it's the Web that is now the dominant form of access, and the one that will shape, for better or worse, what the Internet will become.

This book, then, attempts to reflect these changes while retaining its initial charter of speaking to modern users of all persuasions. You'll find Unix commands here as well as the addresses for obtaining graphical client programs. Illustrations include a variety of different client programs and reflect both Microsoft Windows as well as Macintosh operating parameters (although considering the market dominance of Windows, I have leaned more often toward that system for figures, even if the Macintosh remains an excellent Internet tool). I've also tried to keep a sense of balance; we don't want to become so caught up in sight and sound that we forget the value of on-line text and the need to build up libraries of the written word. Current trends in this regard seem positive.

The Internet remains a place of endless fascination. What I find most enjoyable about it is that study repays your efforts; the more you learn, the more you can find out. We are heading toward a network that will have a profound impact on how we access information on a day-by-day basis; a searchable archive of news stories lets us look at the day's events with the ability to place them in context; a Web page that plays audio files lets us link sound to our data; a repository of historical information provides an opportunity for scholars and others to study and relate their findings.

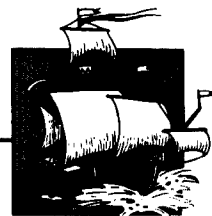
We are seeing an explosion in content that is daily making the Internet a more valuable reference engine. My hope is that by reading this book, people will be disposed to use the network within the parameters of its long-established culture. If you draw ideas, facts, and inspiration from the Net, do your best to give information back to it, whether it be through a USENET posting helping someone out, or a Web page of your own, or a contribution to a mailing list in the field of your choice. This voluntary activation of intellectual resources has always kept the Internet vibrant. The influx of new Internet users has the opportunity of adding to that priceless exchange of ideas.

## ***Acknowledgments***

Space forbids listing everyone who has written to me over the course of the past few years about *The Internet Navigator* (and thank heaven for Eudora, the mail program that lets me manage all this material!). Suffice it to say that I have appreciated the ideas, suggestions, and comments from readers around the world, and hope that this new addition will generate equally helpful correspondents.

I have been pleased and honored since the first edition to have had a foreword written by Vinton Cerf, the man I admire above all others in the Internet business. On the editorial front, thanks go to Phil Sutherland and Allison Roarty at John Wiley & Sons, Inc., who have helped shepherd this new edition through the production process, as

have Frank Grazioli, Sue Curtin, and my excellent copy editor, Janice Borzendowski, who somehow made sense out of all my notations, inserts, and commentary on the original text. Thanks, too, to Bob Ipsen and Jeff DeMarrais for handling and explaining a marketing process that is well beyond the range of this reclusive writer. The original editor of this book, and the man responsible for its seeing the light of day, was Paul Farrell, whom I am pleased to call a friend. I count myself lucky to have had the chance to work with such a fine team.



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