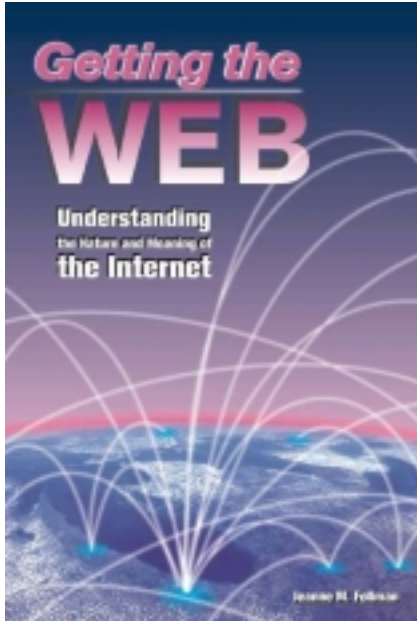


Read Me and Pass Me On  
chapter excerpt & annotated Table of Contents

## *Getting the Web: Understanding the Nature and Meaning of the Internet*



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*an eTaste of*  
**Getting the Web**

Understanding the  
Nature and Meaning  
of the Internet

Jeanne M. Follman

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# The Big Picture

IT'S BEEN AN interesting millennium – the past one that is. And while we've had our share of horrors, the gifts have been substantial: democracy, freedom of speech, equal rights, concern for our environment, and that first lovely picture of Earth taken from the Moon by the Apollo 8 astronauts. Apollo 8 was the first manned mission to the Moon. Astronauts Frank Borman, Jim Lovell, and William Anders entered lunar orbit on Christmas Eve, December 24, 1968; that evening, they did a live television broadcast from orbit that showed the famous Earthrise over the barren lunar landscape. Lovell said, "The vast loneliness is awe-inspiring and it makes you realize just what you have back there on Earth." They ended the broadcast with the crew taking turns reading from the book of Genesis. Borman then added, "And from the crew of Apollo 8, we close with good night, good luck, a Merry Christmas, and God bless all of you – all of you on the good Earth."

Two weeks later, the seeds of the Internet were planted when the U.S. Department of Defense sent out a Request For Proposal for a computer network. In the final five years of the last millennium, that computer network blossomed across the planet as the Internet and the World Wide Web. The picture of Earth taken by the Apollo 8 astronauts forever changed the way we think about

ourselves. The Internet is now irrevocably changing the way in which we interact, launching us into the new millennium with the tools to create the next renaissance.

The gift of the Internet and the Web is this – it offers to each individual the powers of communication and exchange that in the past were held only by governments and corporations:

- The power to publish complex repositories of thought and visual representations of knowledge, image and art.
- The power to broadcast music, radio and video and to publish software.
- The power to do business with a global market.
- The power to carry on global conversations and to form communities of knowledge and interest.
- The power to shape institutions to serve the individuals who give them meaning.

The challenge will be understanding enough about the Internet and the Web to fully participate in this phenomenon and to have a voice in deciding where it is taking us as a society.

The good news is that in order to do this, to *get the Web*, we really only have to understand what it is, not how it works.

### *Looking at What, Not How*

I only vaguely understand how my car works: It has something to do with carburetors, pistons and crankshafts. But I have a very clear understanding of what my car is: a machine that I can drive over the roads to get from one place to another. So while *how* it works is mostly a mystery, the idea of *what* my car is allows me to use it just fine. I know it doesn't fly or jump fences; I know I must keep it on the road and I know the rules of the road; I get the idea. Clearly a lack of technical automotive knowhow has not stopped me or anyone else from using automobiles. It also hasn't stopped us from entering civic debates about

appropriate uses, ranging from who should be granted drivers licenses to disputes over road construction to public policy decisions on roads vs. mass transit. Likewise, the lack of a technical understanding of electronic publishing, prepress, printing and binding doesn't keep us from debates about books. We know what a book is and this knowledge gives us the wherewithal to participate in important discussions on literacy, censorship, and freedom of the press.

The *how* of the Internet is marvelously complex, a shining achievement not only of technology but of international cooperation. The Web came into existence thanks to Tim Berners-Lee, the English gent who defined the standards and protocols of the Web. It also came into existence thanks to that huge and ever-growing group of people who each individually agree to make their computers act in the standardized fashion that enables the serving and browsing of the words, pictures, sound, and motion that make up the Web. But *how* is not what this book is about. There are hundreds of fine books that already explain the how of it much better than I ever could. This book is about the *what*: what is the Internet and specifically what is the Web. My goal is to give you as clear an understanding as I can of the *what* of the Web, so that you may use it to your best advantage as well as fully entering the civic debate on where the Web is going and how to best realize its full potential.

And it isn't all that difficult. Happily, despite the mind-blowing complexity of the *how* of the Web, the *what* of the Web is straightforward. If you've used a computer, know what a file is, have surfed a bit and are familiar with telephones, you know all that you need to know to benefit from this book. And you can always consult the Glossary at the back of the book if you find a term whose meaning is unclear. After reading this book, you should be better able to get what's happening on the Web and participate in deciding where this golden technology is taking us.

*Structure of the Book*

In Part I, we look at what the Internet is: the telephone company for computers. We also describe what happens when individuals exchange words, pictures, sound, motion, and logic by putting them in files and moving them back and forth on the Web.

Part II explores why the Internet is the way it is: how computers and telephone networks shape the nature of the Internet. We see how open standards successfully orchestrate the daily movement of millions of files, we look at search engines, we see why bandwidth is an issue, and we explore the crucial difference in a public network between content and connection.

In Part III, we discuss the ways in which the Internet shapes communication and exchange and ultimately, us. The Internet gives us a splendid mechanism to hold an enriched conversation or to do business with anyone on the planet. And when people start talking on the Internet, information flows freely, anyone can publish, barriers to entry for many businesses are virtually eliminated, intellectual capital increases, feedback shapes content, communities of interest gain voice, local communities thrive, and complex and differentiated entities form and emerge, like the open source movement and the Internet itself. Information illuminates. The Internet will make obvious new ways of doing things and create new ways of looking at life. With it, we can more easily see ourselves in the full context of who we really are and ensure that our institutions truly function the way they should.



“Internet” and “Web” are key words in this book. The Web is the part of the Internet that you see when you’re surfing and clicking on links. If you’re sending an email, you’re still using the Internet but you’re not on the Web. The Web is the most popular

part of the Internet, the part that brought it into public consciousness, and the part that's driving its enormous growth.



The Internet is the technology that will forever change the way in which we interact, offering us a forum for communication and exchange with potentially any person on the planet. But what exactly is it, and why has it saturated the Earth in such a short time? The Internet is the telephone company for computers. Telephone networks and computers have been around for quite some time. The building blocks were there, just awaiting connection. And when we figured out how to put them together in an open, transparent way, we gave birth to the Internet.

# *Getting the Web*

## Annotated Table of Contents

*A quick look at the other chapters in the book.*

### **The Big Picture**

The pictures taken by the Apollo 8 astronauts were the first to show us Earth, floating alone and majestic in space; these pictures forever changed the way we think about ourselves. Likewise, the Internet is now forever changing the way in which we interact. It is launching us into the new millennium by giving to each individual the powers of communication and exchange that in the past were held only by governments and corporations. This book explores what the Internet is, how computers and telephones shape the internet, and how the Internet shapes communication and exchange and ultimately, us. Technically, it's all quite complex and sophisticated. Conceptually it's a simple matter of moving files back and forth between servers and clients to engage people in communication and exchange. Chapter topics: Looking at What, Not How — Structure of the Book

### **Part I**

In Part I, we see what happens when individuals exchange words, pictures, sound, motion, and logic by putting them in files and moving them back and forth on the Internet – the telephone company for computers.

### **The Telephone Company for Computers**

How the telephone network and computers, as either clients or servers, make up the fabric of the Internet and create the basic mechanism for communication. Chapter topics: *Computers — The Telephone Network — Clients and Servers — Summary: The Telephone Company for Computers*

### **Files**

Traffic on the Internet is no more or no less than billions of requests and files, flying back and forth all over the world, between clients that have requested the files and servers that have served them. Chapter topics: *Signals — Suck It and See*

### **Files of Words**

How the Internet fits into the written tradition and how it turbocharges the power of the word, visualizing discourse and giving each individual the power to create complex repositories of thought and to enter into a conversation on that thought with anyone else on the planet. Chapter topics: *Visualizing Discourse — A Changing Relationship with Text — Mesopotamia dot COM — The Solitary Reader — The Logic of the Book — The Flavor of Text on the Internet — Hypertext - Connection Made Manifest — Breaking Down Barriers — What We Were After All Along?*

### **Files of Pictures**

How images on the Web can be used to convey complex information that can only be fully done pictorially. Chapter topics: *Image File Guts - Pictures as 0s and 1s — Pictures are Cool — Visual Knowledge — Photographs — Art*

### **Files of Sound and Motion**

How the Web can enable each one of us to become radio and

video broadcasters. Chapter topics: *Sound as 0s and 1s* — *Streaming Audio* — *MP3* — *Internet Radio* — *Broadcasting Internet Radio* — *Video on the Web*

### **Files of Logic**

Smart clients, smart servers, B2B: what happens when we start creating Web clients and servers that not only do “show and tell” (i.e., transmit files of words and pictures), but do the million other things that software is known for. Chapter topics: *Smart Servers* — *Smart Servers - Business to Business* — *Smart Clients* — *Downloading Programs* — *The Telephone Company for Computers*

## **Part II**

Part II explores why the Internet is the way it is: how computers and telephone networks shape the nature of the Internet. We see how open standards successfully orchestrate the daily movement of millions of files, we look at search engines, we see why bandwidth is an issue, and we explore the crucial difference in a public network between content and connection.

### **Open Standards**

Open standards are the power that fuels phenomenal growth, providing the clarity and stability necessary to create new forms of communication and exchange. They provide an elegant, transparent way for people to interact in a cooperative fashion. As Tim Berners-Lee says, “As long as we accept the rules of sending packets around, we can send packets containing anything to anyone.” Chapter topics: *Standards and Communication* — *File Types* — *File Standards* — *Standards and the Birth of the Web* — *Standards Today* — *Open Standards* — *Open vs. Proprietary Standards* — *Open Standards and Growth* — *The Power of Cooperation*

### **Searching the Web**

Push vs. Pull, metadata, and why it's so hard to \*find what you're looking for on the Web. Chapter topics: *Push vs. Pull — Catalogs, Search Engines, and Portals — Mechanizing Meaning — Metadata — Sort of Meta — Real Metadata*

### **Bandwidth and the World Wide Wait**

A quick tour of the Internet, why squeezing bits through the voice telephone network is such a slow process and what forthcoming "broadband" solutions, especially ADSL and cable, can do to help the situation. Chapter topics: *The Local Loop — The Internet — The Internet Service Provider (ISP) — Traffic on the Internet — Bandwidth — Speeding up the Internet Network — Speeding Up the Local Loop — In the Interim — Speed in Both Directions — Broadband Solutions — Asymmetric Digital Subscriber Line (ADSL) and the Pooz Deaf Telephone Company — Cable TV — Fiber — Wireless Options — Accessibility Issues — Cost and Convergence — Why Bandwidth Matters*

### **Content and Connection**

What happens when a number of centralized, private networks such as TV broadcast and cable networks crunch into the distributed, decentralized public network that is the Internet. Chapter topics: *Bundling — Bundling in a Broadband World — Bundling Access and ISPs — Public Networks Connect — Content, Connection and Convergence — History Repeats Itself — The Pricing Issue — The Infrastructure Challenge*

## **Part III**

In Part III, we discuss the ways in which the Internet shapes communication and exchange and ultimately, us. The Internet gives us a splendid mechanism to hold an enriched conversation or to

do business with anyone on the planet. And when people start talking on the Internet, information flows freely, anyone can publish, barriers to entry for many businesses are virtually eliminated, intellectual capital increases, feedback shapes content, communities of interest gain voice, local communities thrive, and complex and differentiated entities form and emerge, like the open source movement and the Internet itself. Information illuminates. The Internet will make obvious new ways of doing things and create new ways of looking at life. With it, we can more easily see ourselves in the full context of who we really are and ensure that our institutions truly function the way they should.

### **Individuals in Conversation**

On the Internet, the vast complexity and storage capacity of computers fuses with the reach of the telephone network, dramatically enriching our conversations. If your interests, your business, or your mission in life lay within the realm of communication or exchange, the Internet is the tool for you. Are you ready? Chapter topics: *Communication and Exchange — The Power of Publishing — The Power To Exchange — The Creator's Tool of Choice — Using Files for Communication and Exchange — Visualizing Discourse — Internet Time — Discourse and the Shaping of Content — Sharing and Amplifying Intellectual Capital*

### **Formation of Community**

On the Internet, it's not unusual for people who would otherwise be complete strangers to do cool stuff as a community for no other reason than their love of doing cool stuff. Far from being a force for social isolation, for people of like minds or similar interests, the Internet is a wellspring of community formation, and is itself the product of such a community. The Internet dissolves barriers, the main but not the only one being distance, and provides a forum for conversation, debate, and interaction. Chapter

topics: *Conveying Presence — Reaching the Niche Audience — A Small Corner of Cyberspace — Victorian Email — Enhancing Physical Communities — The Virtual Corporation — The Community that Created the Internet — Doing Good and Showing Off — Open Source — Transparency and Complexity — Cyberspace is Earth*

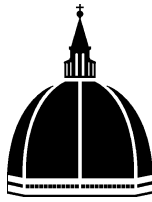
### **Conversations Driving Change**

The Internet doesn't cause change but the people using it certainly do. If there are conversations between people and within communities that the Internet can bring about, it is from these conversations that change will come. Information and access have become both democratic and global, generating deep structural changes in the way we communicate and do business. Chapter topics: *The Free Flow of Information — Access Changes Structure — Everyone's an Operator — The Price in the Marketplace — The Marketplace Itself — A Market of One*

### **An Outbreak of Sanity**

Information illuminates. With it, we can see ourselves in the full context of who we really are and insure through transparency that our organizations function the way they should. Using the Internet, each individual, alone or in communities of interest and knowledge, finally has the power to trump the agenda of the institution and shape it to serve those who give it meaning. It may be just the thing we need to permanently nail into place the mother of all paradigm shifts: the idea that the person gives meaning to the institution, not the other way around. Chapter topics: *Illumination and Formalization — Transparency — Epiphanies of Context — Welcome to the Renaissance*

Glossary, Bibliography, Index



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