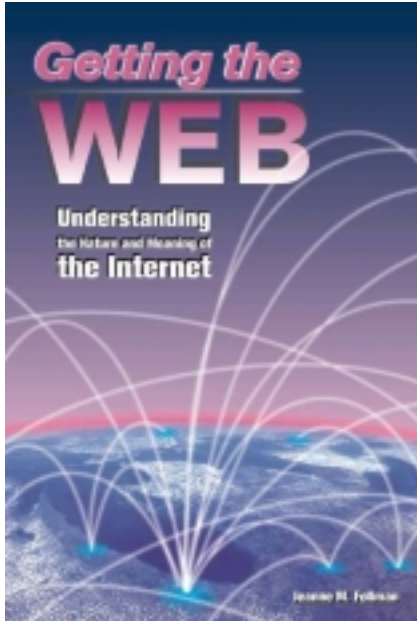


Read Me and Pass Me On
chapter excerpt & annotated Table of Contents

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



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Getting the Web will be generally available in bookstores by September 2001. After mid-March, you can purchase the softcover book directly from Duomo Press at <http://www.duomopress.com> or order it through your favorite online retailers and traditional bookstores.

an eTaste of
Getting the Web

Understanding the
Nature and Meaning
of the Internet

Jeanne M. Follman

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Formation of Community

IT'S GOT AWESOME high-end audio and perfect 3D video. It's fully tactile and in it you can taste and smell anything that is at hand. It's – reality!

Reality gives us the best presence of all, the actual experience of and ability to interact with another person, place, or thing. But due to the constraints imposed by that same reality, we only get to occupy one tiny corner of life at a time – our own personal intersection of the space-time continuum. So until we overcome that minor hurdle, we have to communicate over distance and time with the paler forms of presence that writing and other media allow.

People who love Mozart, people who watch *Star Trek*, corporations that manufacture components for the aerospace industry, pregnant women who will give birth in December, kids with diabetes, authors of fan fiction, sports fanatics, band groupies, and people in countless other communities interact on the Internet every day. Far from being a force for social isolation, for people of like minds or similar interests, the Internet is a well-spring of community formation. Since people who communicate over the Internet usually do so over some distance, they may not get the chance to meet in person. When that's the case, their com-

munication is limited to the exchange of words and pictures and will stay that way until we start beaming ourselves around the planet as fast as we can beam our information today. In the meantime, that portion of our presence that we choose to convey via our correspondence can be as trivial or as rich as we make it.

Conveying Presence

The movie *84 Charing Cross Road*, starring Anne Bancroft and Anthony Hopkins, tells the story of such a relationship, one that flowered via the exchange of letters. Based upon the memoirs of a New York television writer, the movie tells the story of her twenty-year friendship with a London bookseller. It was a friendship that meant a great deal to each of them and blossomed into real affection. Had the characters carried on their correspondence in the late 1990s rather than the 1950s and 1960s, the correspondence no doubt would have been via email. Would the relationship have been better if it could have been face-to-face? Probably. But without the mail, “e” or otherwise, it wouldn’t have happened at all. And that’s the point. For the characters played by Anne Bancroft and Anthony Hopkins, correspondence enabled the relationship, just like email and the Web do today. They enable conversation, relationship, and the formation of community.

Howard Rheingold (www.rheingold.com), early online pioneer, says this about virtual communities: “I have participated in a wide-ranging, intellectually stimulating, professionally rewarding, sometimes painful, and often intensely emotional ongoing interchange with dozens of new friends, hundreds of colleagues, thousands of acquaintances. And I still spend many of my days in a room, physically isolated. My mind, however, is linked with a worldwide collection of like-minded (and not so like-minded) souls: My virtual community.”

If I joined a neighborhood book club, we would meet peri-

odically to discuss the books we've read and share our opinions and insights. The people in the club, however, would be limited to those who were both interested in such an undertaking and who happened to live in the neighborhood. If I joined a book club on the Internet, we would not be able to meet in person but we could still share our opinions and insights. Membership would be limited to those who were interested, but they could live anywhere on the planet, giving the book club a much richer ground from which dialog could grow. The conversations would lack the aspect of physical presence but they would be greatly enriched by the number and diversity of the people who could participate.

Compatriots are not that easy to come by; the hunger for a community of kindred spirits is not always sated by the people who happen to live close. The Internet allows the creation of communities of common interest rather than common location, regardless of how few or many participate, or by how widely they are separated.

Reaching the Niche Audience

As Robert Reid says in *Architects of the Web*, "When audiences are small, dispersed, and anonymous . . . they can rarely be reached economically. In such cases, content is all too often denied an audience, and information consumers are denied access to content."

On the Web, no matter how small the community, if someone develops a site, the few souls who have an interest in it can find it. Furthermore, content can be precisely shaped. Since the size of the audience doesn't determine access, there is no need to appeal to a common taste or to let the message of a site be constrained by the need to please a mass audience. A site can be as arcane, focused, cool, boring, or silly as it needs to be. And once content is on the Internet, a person's interest in it and a search engine become the means of distribution; interest drives distribu-

tion because interest drives visits. Best of all, once we get there we're primed to pay attention because we sought it out ourselves.

A Small Corner of Cyberspace

I'm not in an Internet book club, but I'm in something similar – a virtual community of people who email each other after the latest *Star Trek* episode. I met most of my email buddies through their responses to a few rants I posted on the Web; something must have resonated sufficiently with them to prompt an email and start a correspondence. I have never met my *Trek* email buddies in person, even though some have met each other. But that doesn't stop us from having some quite visceral discussions covering the portrayal of women, the rightness or wrongness of the ethics manifested in the episode (ethics is a big topic among *Trek*-lovers), the consistency of character portrayal and story arc, and the sharing of fiction offerings (since obviously we think we can do it better than the episode writers).

When the season is in full swing, I often think while watching the episode how various of us will react; the thought of the upcoming explication is often more entertaining than the show itself. Correspondence, like interest in anything, waxes and wanes. Nevertheless, through the season and seasons, getting an email from any of them is as delightful as spotting an old friend strolling down the street.

Victorian Email

Relationships formed via correspondence may not always be as multifaceted as they are in real life but they can have a great depth and focus. The medium of email, as opposed to conversation or even instant messaging, allows us time to reflect and compose, making dialog as personal and insightful as we choose. There is a very satisfying quaintness about dealing with people only through the written word; it allows a stately progression of inti-

macy or no progression at all. The Victorians got some things right and one of them was the exercise of formality in human relations, at least until such a time as the people involved chose to make it otherwise. Ironically, even though it is a modern tool, email can still be quite formal, its nature determined by the fact that it is conveying the written word. The “e” in email just makes the correspondence go further and faster.

Enhancing Physical Communities

We can use the Internet to bridge distance. We can also use it to make our local community experience more rich, diverse, and interesting by enabling conversations between people who live close or already know one another. People in communities such as schools and neighborhoods can strengthen their existing bonds through the Internet’s ability to enable conversation. In fact many neighborhoods are beginning to create Web sites to link people together, enable commerce, discuss civic issues, and generally increase the flow of information in and through the community. Imagine having a Web site for your neighborhood through which you could order a pizza, get an email when ice cream goes on sale, check school closings, view restaurant menus, review school homework assignments, sign up for programs at the park, reserve a book at the library, ventilate on a current community issue, start an email campaign to get a pothole fixed, view the new art at the local gallery, find a kid to cut the grass, and send out a community alert.

Much interaction on the Internet is in fact local and definitely not anonymous, especially for younger participants, who have to face the results of their chats the next day in school when their friends come armed with printed transcripts. And often people who meet online eventually meet in real life, with the added twist of already knowing a lot about each other. So rather than

meeting and getting to know a person, you get to know them first and *then* meet them. Real life enhances cyber-relationships!

The Virtual Corporation

In one of the writing jobs I had recently, gained via my Web site, my client was a small “rent-a-programmer” company. This one-man company was putting together a team for a software development for the financial division of a large auto maker. It turned out that, like our team, the entire software development staff – including managers – actually worked for someone else, and came together just for this project. Some worked on site, some worked at home. Everyone was on everyone else’s instant messaging “buddy” list and we could communicate with each other regardless of location. The development was well managed, using state-of-the-art tools and formal methodologies. But no one on the team was an employee of the corporation, except the senior vice president responsible for the project.

The Internet easily enables this sort of ad hoc organization, bringing together people on a project basis rather than in a traditional employer-employee relationship. It has the potential, for folks in some types of jobs anyway, to make us all free-lancers, negotiating each project as it comes. The only thing that wasn’t virtual were the people involved, the work product, and the check in my mailbox at the end of the week.

The Internet dissolves barriers, the main but not the only one being distance, and provides a forum for conversation, debate, and interaction. It links people of common interests who would not otherwise have met and gives a voice to some people who might not otherwise have one. Just like life, the bigger and more complex the Internet gets, the more differentiated it becomes and the more unique. The same goes (on a good day) for the individuals and communities that use it.

The Community that Created the Internet

The Internet itself is the product of such a complex and differentiated community. The Internet owes its existence and continuing health to a community of cooperation that was formed on it, consisting of those people who participate in the Requests for Comments (RFC) process (www.rfc-editor.org). The Internet isn't "run" by any one central organization. It works because the people involved have all argued about and agreed upon the open standards and procedures that make it work, via submitting and commenting upon RFCs. There are more than 2800 RFCs to date, covering Internet open standards specifications as well as "networking protocols, procedures, programs, and concepts but also including meeting notes, opinion, and sometimes humor" (www.rfc-editor.org/overview.html). Anyone can submit a draft RFC for publication; if it survives the review process, it becomes a part of the official documentation of the Internet. RFC documents hold the technical history of the Internet; the community that continues to write RFCs holds its future evolution. Membership in this community is open to anyone who has the technical expertise, desire, and commitment to participate.

Doing Good and Showing Off

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. The Internet has a very strong culture of gifts, inherited from its scientific beginnings. In the Internet's culture of gifts, people often contribute just because they want to, to give back to the Web, to gain visibility and fame, and to take advantage of peer review. Reflecting this culture, many successful businesses on the Web give something away. For example, the lite version of a software applica-

tion might be free or the client in a client/server product.

People getting together to do cool stuff grew the Internet and the Web. It also created the open source movement, a quite complex and definitely differentiated community, and its child, the Linux operating system.

Open Source

The open source movement takes the “open” approach that we’ve seen applied to standards (i.e., published, owned by no one, used by all) and applies it to source code, the words that contain the human-readable logic of computer software. All proponents of open source say that source code should be published for all to see, to comment upon, to debug and enhance. And in fact, many of the key software tools used on the Web today have some or all of their source code published, including the Linux operating system, the Netscape browser, the Perl programming language, and the Apache Web server, the software that powers more than half the servers on the Web. Some proponents of open source go further and say that source code should be possessed by no one and usable by all, meaning that you could not only look at it, but change it, redistribute it, and even sell it, as long as you give your customer the same rights. “To understand the concept, you should think of free speech, not free beer,” says Richard Stallman, pioneer of the free software movement.

The free software movement (www.gnu.org) has even drafted its own copyright license – which they refer to as a “copyleft” (www.gnu.org/copyleft/gpl.html). It is the GNU General Public License and it comes with free GNU software to insure that it stays free. The license states that you can use the free software to make more software of your own, but you cannot put any restrictions on its use, which gets to the point of free speech vs. free beer. For example, if you use free software to make a software application, you can sell that software to your customers, but

you can't restrict your customers from changing it or selling it again if they so choose. It's an interesting way to insure that a gift remains a gift. Even more interestingly, a similar license exists for text. It may seem ironic to have copyright language protecting a gift, but it ultimately makes sense. Strong copyright laws can both protect the content by which people choose to make a living as well as ensuring that what they give back to the Web stays free.

Open source is also pushing software to change from a product to a service. Rather than being delivered as a proprietary, shrink-wrapped, manufactured object, software is being delivered as a part of a service that also includes customization, training, and support. So it just goes to prove that on the Internet, you can give stuff away and still make a buck!

Transparency and Complexity

Linux, an open source operating system, is an incredibly complex piece of software. It is also incredibly robust and stable, since its insides have been published and scrutinized by countless educated eyeballs. The transparency manifested by the open source movement is a concept that would do well to travel to other industries. Wouldn't you feel safer knowing that all the engineering diagrams and maintenance procedures of the jumbo jet upon which you and your loved ones are flying had been scrutinized by an army of independent engineers? At some point, as both shareholders and customers, we will have to decide which is more important, the proprietary nature of a design or its quality. Obviously both are important, but today, for most designs of any complexity, their proprietary nature comes first. Thanks to the transparency we're getting used to on the Web, that may not always be the case. By its support of such transparency, the Internet may have given us just the antidote we need to the ever-increasing complexities of daily life. Not bad work for a bunch of strangers in a virtual community getting together to do cool stuff.

Cyberspace is Earth

If you spend hours on the phone at work, you don't come home and say, "I spent the day in phonespace." If you curl up and lose yourself with a great book on a rainy weekend, you don't report to your friends on Monday that you spent the weekend in "bookspace." They in turn don't worry that you are "cutting yourself off from the human community." You automatically know that when you talk on the phone or read a book, you are taking advantage of a tool that enables a special kind of communication that often, especially with books, can be of the highest order. Telephones and books are blissfully free of the technological blather often attached to "cyberspace."

Because it is so pervasive and so new, it is easy to view the Web as having no context, as existing as a self-contained universe unto itself. In reality, of course, that view is a bit balmy. Just like every book in existence was written and published by a set of humans for purposes of communication and exchange, every Web site in "cyberspace" is written and served by a set of humans for the same reasons.

This fact was brought home to me in a happy way when I attended a seminar put on by the Publishers Marketing Association. Up to that point, I had approached my adventure into publishing almost exclusively via books and the Web. I had surfed countless Web sites, bought books on the Web about publishing, and struck up email correspondences with a number of folks who had been very helpful. But I have to admit, it was great to see all the faces of all the people whose books and words I've been reading. Everyone was so delightfully – well, so delightfully human. When it came time to plunk down the thousands of dollars required to print a book, I did so because seeing all those people proved what I already knew, if only intellectually. There really are humans behind all those Web sites! Even a company as "cyber"

as Amazon is in business today not only because of its Web site, but because of the thousands of people all over the country and world who pull physical books off physical shelves in physical warehouses and see that the books get wrapped and shipped via snail-mail to the right mailboxes on our doorsteps.

The Internet is a tool of communication and exchange so the humans behind the communications and the exchanges ultimately determine the course of events. When I converse with a potential client online, earthly concerns dominate. Is this person rational? Can we work together to create a good product? Will I get paid? Likewise, the client wants to know if I'm honest and competent and if I'll deliver a good product in a timely fashion. The fact that we wiggle bits on each other's screens to communicate in no way diminishes the importance of these concerns. When you enter "cyberspace" you bring your humanity, your self-interest, and your morals with you and those more than anything determine the success or failure of your interaction. And there's nothing virtual about that.

There's also nothing virtual about the changes that will occur when individuals all over the planet can carry on enriched conversations and form communities with whomever they choose. Institutions can't help but change when information flows freely, when anyone can publish, when barriers to entry for many businesses are virtually eliminated, when intellectual capital increases, when feedback shapes content, when communities of interest gain voice, when local communities thrive, and when complex and differentiated entities form and emerge like the open source movement and the Internet itself.

Individuals in conversation and community are driving the changes we're seeing so far and will continue to generate change for some time to come.

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*

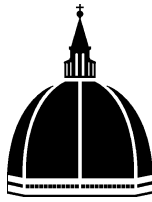
Conversations Driving Change

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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