

LIVING NETWORKS

ANNIVERSARY EDITION



LEADING YOUR
COMPANY, CUSTOMERS,
AND PARTNERS IN THE
HYPERCONNECTED ECONOMY

ROSS DAWSON

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Leading Your Company, Customers, and Partners
in the Hyper-Connected Economy

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What Business Leaders Say About *Living Networks*

"I'm not sure that even Ross Dawson realizes how radical—and how likely—his vision of the future is. Ideas that spread win, and organizations that spawn them will be in charge."

- **Seth Godin**, author, *Unleashing the Ideavirus*, the #1 selling e-book in history

"Dawson is exactly right—pervasive networking profoundly changes the business models and strategies required for success. *Living Networks* provides invaluable insights for decision makers wanting to prosper in an increasingly complex and demanding business environment."

- **Don Tapscott**, author, *Wikinomics*

"Ross Dawson argues persuasively that leading economies are driven by the flow of information and ideas. The ideas in his own book can position any individual or company at the center of that flow. It's a fast read, fun and full of examples."

- **Thomas H. Davenport**, Professor and Director of Research, Babson College, and author, *Competing on Analytics*

"*Living Networks* is a fast-paced tour of today's business frontier. Rich with examples drawn from a myriad of settings, every page forces the reader to ask "How can I use that?" Beware! This book will make you think!"

- **David Maister**, author, *Managing the Professional Service Firm*

"This is the most accessible introduction to the role of networks and networking I have yet seen. Ross Dawson speaks from his own experience in a language which will make it clear to managers what steps to take next. Networking with own staff, customers and professional peers is here to stay."

- **Napier Collyns**, co-founder, Global Business Network

"This is one of the most exciting books I've read in several years. Ross Dawson deftly examines the evolution of networks, organizations and strategy. He has more than succeeded in his intent, which is to produce a practical business book that shows business people how to leverage networks."

- **Melissie Rumizen**, author, *The Complete Idiot's Guide to Knowledge Management*

"The author has demonstrated that the success of his first book was no mere flash in the pan. His book is the one I would choose as a guide to understanding and action for the practical business person."

- **Bill Godfrey**, Editor, Change Management Monitor

About *Living Networks*: Anniversary Edition

Living Networks is being relaunched in its Anniversary Edition five years after its original publication by Financial Times/ Prentice Hall in November 2002, to revisit the foundations of our networked age.

Free chapter downloads of *Living Networks*:

www.livingnetworksbook.com

Ross Dawson's *Trends in the Living Networks* blog:

www.rossdawsonblog.com

About Ross Dawson

Ross Dawson is globally recognized as a leading authority on business strategy. He is CEO of international consulting firm Advanced Human Technologies, and Chairman of Future Exploration Network, a global strategy and events company. Ross is author of the Amazon.com bestseller *Developing Knowledge-Based Client Relationships*, and over 100 articles and white papers. Strong demand for Ross's expertise has seen him deliver keynote speeches on six continents and consult to leading organizations worldwide such as Ernst & Young, Microsoft, Macquarie Bank, Morgan Stanley, News Corporation, and Procter & Gamble. Ross's frequent media appearances include CNN, Bloomberg TV, SkyNews, ABC TV, Washington Post and many others.

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CHAPTER 1

The Networks Come Alive

What The Changing Flow Of Information And Ideas Means For Business

Connectivity is shrinking our world, and in the process transforming business. As communication between people becomes more fluid and pervasive, it is creating what looks like a global brain, in which ideas procreate freely and we collaborate to filter an ever-expanding universe of information. But just a small proportion of the planet's population is connected. It is critical that we extend participation as broadly as we can.

Macromedia, the company best-known for selling Flash software, is blogging. Weblogs—usually fondly abbreviated by their devotees to “blogs”—are essentially online publications of people’s stream of consciousness, available to anyone who cares to drop in to their websites. Opinions and personal perspectives are offered freely and informally, almost always in the context of breaking developments and others’ views. This means that blogs are liberally filled with links to whatever is most interesting in the ever-shifting landscape of information on the Internet.

Usually, when Macromedia releases new versions of its software, it provides detailed documentation to its community of software developers, and if it has announcements, posts the news on every related Internet forum it can find. When in May 2002 it brought out updates to four of its main packages, it asked five of its most switched-on staff to each create their own weblogs to discuss the intricacies of the new releases. In addition to offering their own insights and personal perspectives on the software, they provide links to all the other interesting online discussion happening worldwide, and independent developers link to their sites when they post something worthwhile. The rich network of links between these ongoing, informal discussions means that what is most interesting to the community is swiftly known to all, and less valuable information leaves barely a ripple in the flow.¹

Instant messaging was not long ago seen as the domain of teenage girls, who compulsively sit at their computers and chat in cryptic abbreviations about music, boys, and hairstyles with their girlfriends in the next street or the other side of the world. It didn’t take long for instant messaging to be appropriated by Wall Street. Eight of the top investment banks have implemented an instant messaging system that links their bond traders and salespeople with 2,000 institutional investors. Information about market conditions and trade execution flows far more swiftly and easily than ever before.²

Macromedia’s foray into what it calls “the blog strategy,”³ and the bond market’s use of instant messaging, provide simple illustrations of how business is being transformed. Already, relatively recent technologies like e-mail, mobile telephony, and text messaging, are changing the way people communicate, and the way companies work. Now, a new phase of emerging technologies such as XML, web services, and peer-to-peer, are taking us a stage further. The networks that are the foundation of all society and business are literally coming to life. Our economy is now dominated by the flow of information and ideas, and that changes the rules of success. In this book we will take a journey together to understand how the foundations of the economy are shifting, the profound implications for business, and how we can be extraordinarily successful as organizations and individuals in this new world.

The coming of hyper-connectivity and the living networks has implications for almost every aspects of business. There are five key issues that we will examine through this book.

- **How companies create value with their customers, suppliers, and partners.** The rapidly increasing ease and speed of information flow is blurring the boundaries of organizations. To survive and thrive, companies must create new kinds of relationships with their customers, suppliers, and partners, based on transparency, collaboration and sharing value. This requires new ways of working. Nabisco and the grocery chains that distribute its products share information and collaborate to result in higher sales and lower inventory costs for all partners.⁴ Corporate Executive Board is a membership-only consulting firm that gathers vital information and best practices from its members... and sells it back to them.

- **How people work within organizations.** Work today is based on people's networks within and across organizations. Knowledge needs to flow by connecting the right people, and diverse groups working in different locations and often different companies need to collaborate effectively to do their work. The lawyers at New York virtual law firm Axiom Legal work from home or their own offices, but are connected to shared legal resources and each other to perform their work. Eli Lilly's Research and Development group uses an internal collaboration system based on the principles of how insect swarms function, to allow the best ideas of a distributed research team to emerge.

- **Innovation and intellectual property.** Our sophisticated economy is increasingly dominated by innovation and intellectual property. However the increasing complexity of technology means that collaboration is becoming essential to develop valuable ideas. This results in a need for new models to share in the value of intellectual property. At the same time, an ever-larger proportion of intellectual property can be captured in digital form, and thus flow freely between consumers, requiring a shift to new business models for content. Investment bank Dresdner Kleinwort Wasserstein uses an open source model to develop its systems integration software, which makes it freely available for anyone to use. Capitol Records promotes the rock group *Radiohead* with a suite of digital marketing tools, including providing the more than 900 fan sites for the group with the entire album *Kid A* before its release. The album hit #1.⁵

- **Strategy and positioning:** Almost all economic activity is converging into a single space based on the flow of information and ideas. This emerging *flow economy* comprises a vast array of industries, including telecoms, technology, media, entertainment, publishing,

financial services, and professional services. Every company in this convergent space is facing new competitive threats, and seeing massive new opportunities open up. Budget travel guide publisher Lonely Planet has used its powerful position with its customer base to sell telecommunications services, television programs, music, and interactive handheld city guides. JP Morgan Chase is leveraging its strength in payments to help its clients present and process invoices, allowing it to become central to the flow of business information inside and between corporations.

- **How individuals provide leadership and create personal success.** In this world of connectivity, collaboration, and blurring, executives no longer have control over most things that matter, sometimes even including their own business processes. They must provide true leadership inside and outside the organization to successfully implement new ways of working, while skirting the associated risks. Free agents also need to develop new approaches to create success in a networked world, both by positioning themselves effectively within networks, and fully exploiting the intellectual property they create. Bob and Steve Buckman of Buckman Laboratories have helped create a firm that builds trusting, highly collaborative relationships with its customers. Successful science fiction writer Eric Flint not only chooses to provide his books online for free to help him sell books in bookstores, but has also supplied the facilities and encouragement for other authors to do the same.

In order to fully understand the implications for business, and what we must do to be successful in this new world, we must first examine the foundations of the living networks. These are connectivity, the rapidly changing flow of information and ideas, and the creation of what looks very like a global brain.

How connectivity shrinks our world

In trawling through one of the private online discussion forums in which I participate, I came across a question on shifting high-value customers to online services, so I put in my two cents worth. It turned out that Chris, who had posted the original question, worked in London for one of the global professional services firms that I know well, so we exchanged a few e-mails directly, and arranged to meet the next time I was in London. We went from his office in the early evening rain to a cozy local pub for a pint, where we met up with someone he thought I should meet—one of his former colleagues who has established a network of specialist consultants. After a couple of pints we adjourned from the pub for a curry—as you do in London—and discovered further common interests, values, and beliefs as we hoed into the vindaloo, washed down with Indian lager beer.

Fortunately I escaped before I was too damaged to do justice to the workshop I was running the following day, but we had shifted from an exchange of brief e-mails to friendships and the foundation of future business collaboration.

This illustrates how communication technologies allow like-minded people from different sides of the planet to find each other and share ideas (and in this instance, also beers). The impact of the new forms of communication available to us is far broader than that. The whole way people meet and communicate is changing. E-mail, SMS, instant messaging, cell phones, online forums, chat, video-conferencing... Each of these allows and even encourages ways of communicating and relating with others that are fundamentally different from what has come before. Together, they dramatically change the *structure* of society and how people interact.

When did you last say or hear someone say “what a small world”? People have an unquenchable fascination with how richly we are connected, never ceasing to be amazed by the seeming coincidences of how one friend knows another through a completely different route. Yes, it is a small world, and growing smaller all the time. The well-known phrase “six degrees of separation” suggests that we are connected to every person on the planet by no more than six steps.

The concept of six degrees of separation originally emerged from experiments performed in the 1960s by Harvard sociologist Stanley Milgram. He gave letters to randomly chosen residents of Kansas and Nebraska, and asked each one to try to get the letter to a specified person in Massachusetts by forming a chain, starting by sending it to the person they knew that they thought would be most likely to be able to pass the letter on to the nominated target. It turned out that a median of six steps were required for the letters to get to their destination.

Recently, a new branch of mathematics known as “small world theory” has emerged to study and explain this phenomenon.⁶ The heart of the matter is the diversity of our connections. In the past, most social circles were relatively closed—people tended to know the same people as the others within their social group or local community. Let’s say Joe knows 50 people. If all those 50 people know only each other, then it’s a closed group. However if any one of the group has more diverse social connections and knows people outside, that provides a link through which everyone is connected to the rest of the world.

Small world theory—in its simplest form—studies a circle of people, as shown in Figure 1-1. If each person only has contact with the four people closest to them, then it can take as many as five steps to reach everyone in

a world of just 20 people. If we add just a handful of more distant connections across this “world,” as shown in Figure 1-2, then it takes far fewer hops to reach others. It is the connections that bridge distinct and distant groups that create the small world.

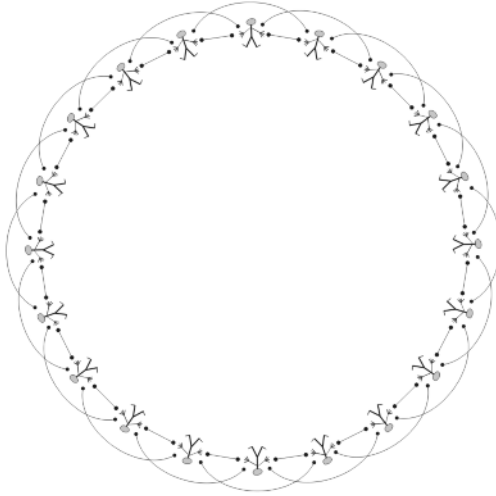


Figure 1-1: It is a big world when you only know your immediate neighbors

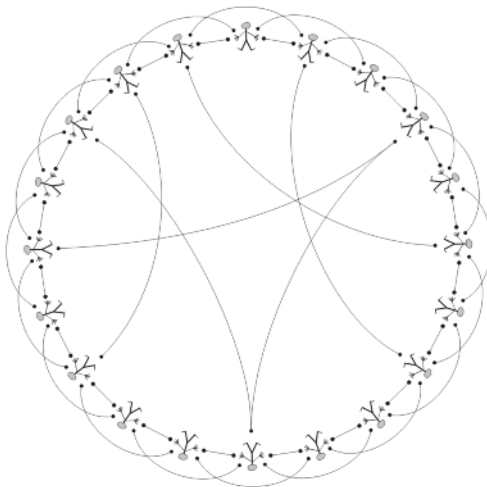


Figure 1-2: Adding just a few more diverse connections can create a small world for everyone

The formation of these diverse bridges between people describes what is happening in our hyper-connected world. Increased mobility and migration mean that even in a small community you are likely to know people born in many different countries. You can easily keep in touch or reconnect with people you've gone to school or worked with by e-mail or alumni web sites. You can communicate and form friendships with people you meet online, as I did with Chris in London. Children and teenagers consider it commonplace to chat or play games online with people from all around the world. It is no longer unusual for people to have met their life partners online. From six degrees, we are moving closer to four degrees of separation from anyone on in the world, with the possible exception of a few isolated tribespeople. We live embedded in an intensely connected world.

New forms of communication are giving us new ways to interact socially. In the past, when we met someone we could only give him or her our address or telephone number. E-mail gives us more choices. It's easier to give people your e-mail address than your telephone number, and it's easier to contact someone that way. Mobile telephony allows us to lead far less structured social lives. Instead of making firm arrangements to meet, people go out and then use cell phones to meet on the move. Social events are becoming far easier to organize and more diverse, because all it takes is a quick e-mail or text message to get a large group together. I run the Party Alert Network e-mail list, which can in an instant let several hundred people know of social events. A friend sends out text messages to let people know of art exhibition openings and social events. In this way, digital communication is resulting in a substantial broadening of people's social connections. Similarly, employees can connect far more widely within their organizations, and those who would be afraid to walk into their chief executive's office with an idea are often happy to send an e-mail.

Micro-messages make communication fluid

Sit in a central café in any European city early on a Friday evening, and you will see troupes of teenagers and young adults sporting that essential accessory: mobile phones. They're speaking into them, swinging them around casually as mating displays, and as often as not, using two thumbs to type brief messages with a practised ease. The global Short Messaging Service (SMS) protocol allows 160 character text messages to be sent to or from any mobile phone.

In 2001, around 40 billion text messages were sent on mobile phones, with a forecast of close to 50% annual growth in the subsequent years.⁷ For over 100 million people, mainly in Europe, Asia, and Australia, this new style of communication is becoming a core part of their daily lives. The uptake in America has been stymied by the inability of US telecoms companies to

agree on standards, meaning subscribers usually can send messages only to other customers of the same network. In the meantime, the rest of the world is busy exploring a whole new mode of connecting with others.

The spectacular take-off of instant messaging has paralleled the SMS boom. Instant messaging enables people who are connected to the Internet to compile “buddy lists” of their friends around the world, see when they are online and sitting at their computer, and send text messages to them. The major differences with e-mail are that not only can you interact in real-time in what is closer to a live conversation than sending letters, but also the “presence” function means you know whether your buddies are there to chat with. From its roots as a social tool, instant messaging is shifting to become extensively used in organizations. Salespeople in the RE/MAX real estate franchise network, covering over 4000 offices worldwide, use instant messaging both internally for sharing referrals, and externally to converse with prospects and clients. The US Navy is rolling out instant messaging across the whole fleet, to streamline technical conversations. Communication within IBM is dominated by the technology, with over two million instant messages sent daily by employees even in early 2001.

Instant messaging and SMS are examples of what I call *micro-messages*. They are short, informal, and unintrusive—you can see the message and choose how to respond, unlike a telephone call. In practice, these new forms of communication rarely replace existing communication, but add to it. People still meet and call each other, but for other exchanges they may use SMS or instant messaging. Most importantly, the informality of these micro-messages lowers the barriers to communication—while something may not have been worth a phone call, it’s easy and unobtrusive to send instant text. This results in a far greater *fluidity* of communication. When the only way you can communicate with distant people is in large bulky chunks—letters, e-mail, telephone calls and the like—it means there has to be a good reason to do so. Micro-messages allow smaller things to be communicated, and for many teenagers—and increasingly adults—they have become a means of sharing their daily experience and thoughts. SMS and instant messaging can be powerful marketing tools, if treated appropriately, as you will discover in Chapter 6.

The making of the global brain

There are curious parallels between the human brain and human society. The 100 billion or so neurons that make up the brain are deeply connected—each neuron can trigger approximately 1000 other neurons. By firing other neurons in turn, any two neurons in the brain are separated by no more than four or five steps. All of our thought and behavior emerges from the interactions between these billions of neurons. Human

society looks increasingly similar. The world's population is around six billion. The average person in the developed world knows around 300 other people. And the vast majority of people in the world are now connected by less than six steps.

Soaring connectivity is giving rise to what increasingly resembles a global brain. The idea is hardly new. Early proponents include the nineteenth century evolutionary biologist Herbert Spencer, who coined the phrase “survival of the fittest,” and science fiction writer H.G. Wells, who wrote a book *World Brain* outlining his vision for human minds coming together as one.⁸ The revolutionary mystic Pierre Teilhard de Chardin introduced the term *noösphere*, meaning the global domain of mind.⁹ Yet communication technology—the domain of hard-nosed engineers—is now allowing the incredibly rich flow of information and ideas that creates this single mind, that can integrate all of our intelligence and insight.

This is far more about many people who are connected, rather than the connections themselves. Ideas are still the sole domain of people, despite the latest advances in artificial intelligence. There are two key aspects to this thinking process of the global brain—and the individual minds that comprise it. The first is generating and developing ideas. The second is filtering the universe of information, paying attention only to what is important and useful.

The sexual life of ideas

Ideas don't like being alone. In fact they like copulating promiscuously with any other idea in sight. There is no such thing as a virgin birth in the world of ideas. Ideas are always born from other ideas: interacting, mating, and procreating. This often orgiastic coupling takes place in the fertile substrate which is the human mind. Our minds are hotbeds of unspeakable activities—ideas have a life of their own, but they need somewhere to carry on their flirtations and breeding.

There is no such thing as a virgin birth in the world of ideas.

In her book *The Meme Machine*, Susan Blackmore suggested that humans are purely and simply carriers for *memes*, which means ideas or behaviors that can be passed on to others.¹⁰ Our species has evolved to become a more refined vehicle for propagating ideas. One result is the desire to produce and consume mass media that seems so intrinsic to our race. Another is our drive to implement communication technologies, to engage more richly with others, and to publish on the Internet.

Using these new technologies, the ideas in our minds can participate in online discussions, starting from the voyeurism of watching other ideas

interacting and playing, to the flirtation of engaging with others, however still fairly safe in the limited self-exposure afforded by a text-only discussion. At the other end of the spectrum, when people get together with the explicit intention of creating intellectual property, ideas are essentially procreating. In the free-flowing sexual life of ideas, one of the key dangers is losing your seminal creativity, bearing offspring without sharing in the rewards. There is no child support due in the world of ideas; rather your children may support you. The most fecund propagators of ideas can choose to intermingle freely with others, or guard their worth carefully, like the expensive semen of a prize racehorse.

Idea-X is an online idea exchange established by consultancy Cap Gemini Ernst & Young. Participants can either propose ideas or ask for ideas to address a specific problem. A suite of tools allow people to see how other members rate each of the ideas and the people proposing them, and to keep track of the best ideas on the site. The problem with Idea-X and similar forums is that everyone can see the ideas and use them as they will. At the other end of the spectrum is PLX.com, an online market for intellectual property. Participants can buy and sell intellectual property they have generated, though in order to do so it must first be legally registered, for example by patent, copyright, or trademark. We will examine strategies for those who propagate ideas and generate wealth from them in Chapters 5, 8, and 10.

Collaborative filtering saves humanity!

Effectively filtering the information that assails us is essential for our survival. We would be completely overwhelmed if we were not able to reduce the millions of sensory impressions we receive to something our logical brain can cope with. Schizophrenics can be understood as lacking the usual filters that protect them from being swamped by their sensory input. Instead of perceiving only the outstanding features of their environment, everything stands out for them. LSD works by temporarily disabling our brain's sensory filtering mechanisms.

In the information age, this ability to filter effectively has moved from an essential of survival to one of the primary determinants of success. Information overload is the defining feature of our times. Those who are most effective at making sense of the flood of incoming information and turning it to action lead our world. You can read about them in the *Forbes* rich list.

Filtering performed at the group level is called *collaborative filtering*. Instead of everyone individually attempting to make sense of the universe of information we swim in, we can work together. This is not new. Whenever you share a recommendation for a book, movie, or restaurant with a friend,

you are collaborating to narrow down the wealth of choices you have available. You don't need to try every book or restaurant yourself in order to find those that you like the most. When people talk about word-of-mouth—usually in the context of marketing—they are referring primarily to the way people share information with friends about what they like... or don't like.

Technology now enables this process of collaborative filtering to happen globally rather than simply between friends. A simple but well-known example is the recommendation service of Amazon.com. If you liked a particular book, you can see what others who liked that book are also reading. You can read the comments of people who have read those books. You can far more easily discover new books that are likely to interest you.

Many websites—simply by providing links to selected resources—are acting as filters. The search engine Google was a late entrant to a crowded field. When it started business there were literally dozens of search engines that people used regularly. Google has come from behind to become the top pure search engine. The heart of Google's search algorithm is identifying the sites that have the most links from other sites. Rather than simply identifying websites that contain the keywords you are looking for, it shows you those that have proved to be most popular with others. You are benefiting from the exploration and judgments of all other web surfers, by following what others find useful. More recently, Google is looking at getting users to rate the websites they visit, in a more overt implementation of collaborative filtering.

Corporations are using collaborative filtering software to make sure their employees only spend time reading the information that is most relevant and interesting to them. The Sun ONE ebusiness platform incorporates software that takes users' ratings of the value of documents they read, together with their work profiles, to provide people with accurate predictions of how useful will find any given information. The system's foundation of people's considered opinions of value provides far more accurate ratings than purely technology-based approaches. Throughout this book we will explore some of the vital business implications of collaborative filtering, notably in Chapter 4 on relationships, and in Chapter 8 on content distribution. We will also look at the role of collaborative filtering in the future of the networks in this book's Postscript.

We, the media

The brilliant visionary Marshall McLuhan accurately described the media as an extension of our senses. Your eyes can see what's happening in your immediate vicinity, your ears can hear what people are saying in the same room as you, but with television and radio as an adjunct to your senses, you

can see and hear anywhere around the world. All of the cameras and microphones of the world's media are an extension of your eyes and ears, and journalists are your personal emissaries to report on their findings and impressions.

Now connectivity is extending your senses to all the connected people on their planet. Media is becoming a participatory sport. You can tap into what any of a vast army of people are seeing and thinking, or contribute yourself to the global flow. This certainly doesn't mean the end of mass media. Most people will always choose to access a common frame on the world, that gives views of politics, society, and entertainment that provide a basis for interaction and discussion. However the new world of media is at the heart of how the networks are coming to life.

Go to the Slashdot news website for the technology community, and it looks much the same as many other news services for that audience.¹¹ The difference is that the stories are all submitted by readers, reflecting what they believe to be most important news to their peers. At least as important as the actual news is the commentary from the highly sophisticated community. All participants can rate how interesting and useful each comment is, so readers can choose to view comments with whatever rating level they choose, from everything to only the very best. An elaborate system gives temporary special privileges to those whose contributions are judged most valuable by the community. Since the software behind the system is openly available, over 100 other websites, each with a different focus and community, are using the same system.

As you saw at the opening of this chapter, weblogs are the stream of consciousness of the networks. Now over half a million bloggers—as weblog writers call themselves—regularly post their thoughts and links to interesting material. Some of the best-known bloggers, such as Dave Winer of Scripting News, can attract tens of thousands of readers

The highly interlinked nature of weblogs means that they are in themselves a powerful form of collaborative filtering. What is most interesting and worthwhile quickly becomes most visible,

every day. Sometimes bloggers report news directly. It's increasingly common for conference organizers to provide wireless connectivity in conference rooms, which means you can sometimes almost feel like you're there just with Internet access. Dan Gillmor, who is both a reporter for the *San Jose Mercury* and a weblog devotee, was writing directly into his blog during a presentation at PC Forum. Before the question session, the speaker had time to look at his laptop, and corrected something Gillmor had written. Other mainstream journalists are doing weblogs, blurring the boundary between established media and this burgeoning new medium.

The highly interlinked nature of weblogs means that they are in themselves a powerful form of collaborative filtering. What is most interesting and worthwhile quickly becomes most visible, as we saw at the beginning of this chapter. This effect is enhanced further by specialist search engines. MIT's Media Lab provides a "top hits" site that searches all the weblogs each day to identify the most common links.¹² Every day you can discover what this large and diverse community of often quirky people consider the most interesting news and websites, and if you wish you can include your own weblog in the daily tally. Not surprisingly, the results are usually rather different from the newspaper or TV news headlines.

The limits of the networks

El-Ghar is a town of around 100,000 people, situated in the Nile basin about 50 miles from Cairo. Most of the inhabitants work on farms surrounding the town, with the burgeoning market providing an outlet for their produce. Despite the basic day-to-day life of its inhabitants, there are many poorer areas in Egypt, and certainly through Africa. Between the 100,000 denizens of El-Ghar, there is precisely one telephone line.

This solitary telephone line is not a shared commodity, but the proud possession of one of the town's wealthiest people. The United Nations Development Programme has sponsored over 80 access points to the Internet for poor people in Egypt, and provided Arabic-language content that is specifically useful for farmers and other rural poor. The program's volunteers came to El-Ghar, intending to show people the resources they could access, but at the last minute the telephone line owner changed his mind about allowing them to use his precious status symbol. As a substitute, the volunteers downloaded some of the system's pages onto their laptop, and used them to show the villagers what they could access if they went to the Internet center in the nearby city. One of farmers later happily reported that he'd discovered improved fertilization methods on the system.¹³

Sitting comfortably in the USA or other highly-developed countries, calling colleagues on cell phones, picking up our e-mail on mobile devices, and downloading music files on the Internet, it's easy to forget quite how starkly different life is for the majority of the world's population. Our lovely planet Earth is packed with well over six billion people. Of those, half have never made a telephone call, and less than one in ten has access to the Internet.

The global networks that are the focus of this book link not everyone on the planet, but for the moment just those one billion people or so people who are "wired" to varying degrees. The implications of this gap are central to the future of our world. Today, connection to the global networks is the

primary means of production and wealth. In economies based on scarce resources such as land, if someone else gains, then you lose. In an economy based on networks, not only you don't lose if someone else connects, but you and everyone else benefit as the networks grow in scope and diversity.

I hope that the evocation of the living networks in this book underlines how critical it is that we bring as many people as possible in to participate, to join us in this exciting adventure. Endeavors such as the Internet access centers in Egypt described above are small but essential steps to help bridge the divide. In Bangladesh, just 3% of homes have a telephone. Grameen Bank, set up to lend small amounts to the poor to help them become self-sufficient, enables villagers to buy mobile phones, which they pay for by charging others for usage.¹⁴ In one step the whole village becomes connected. As with much of the developed world, mobile telephones are enabling connections where installing a fixed telephone line would be prohibitively expensive.

For most of the more than one billion people who earn less than \$1 a day, food and clean water are probably higher priorities than Internet access. However beyond the absolute basics, access to the networks will be critical in helping them to improve their lives, and to participate in the potential ahead.

Shock! Horror! Globalization!

The battle raged for five days in the streets of Seattle, as the World Trade Organization met in late 1999 to discuss lowering barriers to trade. Over 40,000 anti-globalization demonstrators were met by riot police lobbing tear gas and spraying pepper-spray pellets and rubber bullets. A state of emergency was declared as shops were looted and vandalized, buses smashed, and the city center closed down. As the trade delegates and protestors left the city and the tear gas slowly drifted away, the world had gained a new symbol of globalization.

Globalization seems have become something not to mention at a dinner party. People are sharply polarized over whether it's a good or bad thing, though in doing so they are usually attributing quite different meanings to the same word. Of the multiplicity of themes encompassed by the term "globalization," two are especially relevant to the emergence of the living networks. The first is the increasingly borderless nature of the global economy, especially when the majority of economic activity is comprised of information-based services. The second is the apparent cultural integration of the world.

An executive from an animation company told me that he was choosing between Chinese and Hungarian animators for a particular project. The Chinese were excellent at depicting action scenes, but the Hungarians were especially skilled at rendering subtle facial expressions, he said. What was clear and remained unsaid was that for such labour-intensive work he wouldn't dream of hiring expensive American or Western European artists. It didn't matter a jot to him that the animators would be on the other side of the world; he could see their work daily and communicate closely with them at all stages of the project.

For a very large and increasing proportion of work, it doesn't matter where in the world it's done. This creates many opportunities for developing countries. The Philippines is a major call-centre location for the Asia-Pacific region. India's software engineers do work for companies globally. Ugandan companies provide data-entry services for US clients. At the same time this puts pressure on developed world workers. The solution is absolutely not to stop these services being done overseas; among other issues this would hold developing nations back in an agricultural economy. The simple and inevitable result is that developed world workers must upskill themselves, do the higher-level work that differentiates them. We can give thanks that over the last half-century the economy has shifted to virtually eliminate production-line jobs, allowing people to shift to more meaningful work. A similar process is at play now.

Vietnam is a delightful country, with warm, friendly people and beautiful scenery ranging from the ethereal floating world of the Mekong Delta through alpine vistas to spectacular craggy islands. However, it took someone else to point out to me one of the things that makes it so different from everywhere else I've been: there is no McDonald's or Coca-Cola. Almost anywhere else in the world there is no escaping the golden arches or familiar curlicued white-on-red logo.

Certainly brands are becoming increasingly global. Entertainment is transnational—Hollywood films can be seen almost wherever you go. People from around the globe chat in English on Internet sites. Of the more than 5,000 living languages today, as many as 80% are expected to become extinct over the next century. So are we moving towards a single uniform culture worldwide?

If so, then that's something we must guard against. The value of the connections that bring the global networks to life is not in producing homogeneity. If everyone's the same, why would we need to collaborate? The true value is in bringing together the greatest diversity—that is the source of higher intelligence. Multiple perspectives lead to richer, more complex mental models and ways of thinking about the world. It is critical that we encourage and nurture diversity and different approaches.

Vital Connections: Chapter 1

This chapter has introduced you to the living networks. Connectivity is dramatically changing the way people are connected. That in turn is transforming the flow of information and ideas. As this flow becomes immensely deeper and richer, the age-old dream of a global brain is coming to reality. Ideas copulate promiscuously, we collaborate to filter staggering information overload, and a new form of participative media is extending our senses far more broadly than ever before. However we must be wary of the impact of only part of humanity accessing the invaluable fruits of connectivity.

In the next chapter, we will examine the key emerging technologies that are combining with connectivity to transform business. All networks are founded on people sharing a common standard. This results in a business environment in which companies require new approaches to strategy. In Part 2 of the book, we will explore the implications for organizations, including how to lead your customers and partners into new ways of working. Part 3 will examine how to develop and implement strategy in this hyper-connected economy