

# **Our Stake in Cyberspace**

## **The Future of the Internet and Communication As We Know It**

**By Judi Clark**

### **Introduction**

The future is uncertain. A useful tool for looking into the uncertainty is a set of scenarios. Good scenarios explore the extremes of what is likely or possible (but they don't forecast the future). This report uses four scenarios to explore the future of the Internet and communication as we have come to know it.

Starting with the beginnings of the Internet, this report defines two significant market and political forces affecting the Internet and shaping our four scenarios: intellectual property laws and common carrier laws. Tying intellectual property laws to availability of content, and common carrier laws to the proprietary nature and uses of the network, these forces become axes that define four possible worlds:

1. highly competitive, open content but a proprietary and restrictive network,
2. open and available content on open and accessible networks,
3. monopolistic, restricted content on proprietary, restrictive network, and
4. monopolistic, restricted content on open and accessible networks.

These four scenarios help us understand where development of our telecommunications future is headed.

### **The Many Networks**

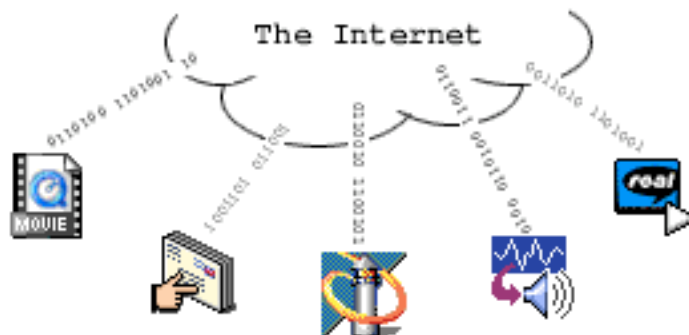
Years ago, the U.S. research community began development of the Internet. Designed as an open-architecture network, the Internet was capable of operating with many different technologies—including, but not limited to, familiar telephone lines. From the early 1980s, the Internet grew from its infancy in military research into today's global user network, carrying broad social and commercial activities.

The Internet has now become almost a "commodity" service, and much of the latest attention has been on the use of this global information infrastructure for support of other commercial services. This has been tremendously accelerated by the widespread and rapid adoption of browsers and the World Wide Web technology, allowing users easy access to information linked throughout the globe. Products are available to facilitate the provisioning of that information and many of the latest developments in technology have been aimed at providing increasingly sophisticated information services on top of the basic Internet data communications.<sup>1</sup>

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<sup>1</sup> Leiner, Barry M., Vinton G. Cerf, David D. Clark, Robert E. Kahn, Leonard Kleinrock, Daniel C. Lynch, Jon Postel, Larry G. Roberts, Stephen Wolff. A Brief History of the Internet. August 4, 2000. November 17, 2002 <<http://www.isoc.org/internet/history/brief.shtml>>

The Internet continues to run on a wide range of interconnected networks, including telephone and cable lines, ethernet cables, radio waves, wireless modems and routers, satellites, and more. The Internet is considered an open-architecture infrastructure—meaning it was designed to be flexible and not limiting as to its uses. It is sometimes referred to as "dumb" or "stupid"<sup>2</sup>, in that the network is merely a transport mechanism and not necessarily customized for a specific kind of content. (Unlike, for instance, the voice-specific nature of the telephone network.) The tools we have come to know and use—e-mail, Web browsing, instant messaging, streaming media, file downloads, and much more—were developed to be used on this open network.



This is in stark contrast to some of the networks used *within* the Internet. Specifically, the telephone and cable networks are two significant parts of the public's Internet access. Unfortunately, the proprietary controls, or "intelligence," inherent in the telephone and cable networks are a hindrance rather than a help to the larger interconnected network. For example, separate modems are required to interface with each of these networks. These modems are unique to each kind of network and do not work with others.



## The Marketplace

Our technology-based world revolves around two concepts: content and access. These concepts also represent and are controlled by two legal worlds: one of intellectual-property laws, and the other of telecom and common-carrier laws. As industry observer Kevin Werbach puts it, the two worlds are described from different perspectives, causing a "language barrier" between Hollywood and the technology industry:

One sees content as the critical resource, and data networks as simply another mechanism to deliver it. The other sees connectivity as the essential factor, with movies being one of many resources that can travel along those connections. Hollywood sees a moral dimension in protecting its property and the creative works of its artists, as well as a nobility in bringing entertainment to the

<sup>2</sup> Dumb network, defined, <http://www.commWeb.com/encyclopedia/search?term=dumbnetwork>. The term "dumb network" was first coined by George Gilder, and "stupid network" by David Isenberg.

masses. The tech industry thinks bits are bits, and the only moral value that really matters is freedom.<sup>3</sup>

### **Content: The Things We See, The Words You Say**

These days, the word "content" is used to represent the expression of our global cultures: the news, ads, songs, pictures, movies, reference material, thoughts, stories, and manifestations of life made available in a digital form. To a corporation, content is what goes into the "distribution channel." To an artist, it's the art. To users, it's the information and entertainment they find on their computers, on the Web, and on other parts of the Internet. Members of the public don't often think of their conversations and interests as content (though marketers often do).

Content is largely controlled through laws and technology. Laws govern intellectual property and copyright restrictions. Technology offers control via mechanisms or protocols such as the functionality of a "set-top box" (cable TV) or personal wireless devices (through cellular or satellite networks). On the Web, the browser and various applications vastly—but not infinitely—expand the kind and quantity of information available to people over the Internet because they impose very few controls on information designed to be widely shared.

An abundance of content can be overwhelming. We often decide to control it in some way that results in manageable, relevant information. Management involves trade-offs and decisions about who is in charge of which controls.

One example of this overabundance of information is the unsolicited commercial e-mail (UCE, often called "spam") in your e-mail box—too much of the wrong kind of information! Senders often argue free speech, but many recipients are calling for governmental regulation. Do we let the government decide what kind of e-mail we receive, or is the burden entirely on individuals to recognize and delete 30 percent or more<sup>4</sup> of their unwanted incoming e-mail?

Another common example is pornography. The government has expressed a desire to regulate access, for example, by means of imposing filtering technology on computer terminals in public libraries. The filters, however, do a lousy job of distinguishing between "porn" and legitimate sites that have information relative to "job, studies, health, and other needs."<sup>5</sup>

A third example is a battle currently igniting the courts—and in many homes that have VCRs and Personal Video Recorders (such as TiVo<sup>®</sup> and ReplayTV<sup>®</sup>). These devices allow people to fast-forward through commercials. The television broadcast industry is not happy about this, calling it "theft" when viewers don't watch the entire program—with commercials—as broadcasters have intended it to be seen.<sup>6</sup>

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<sup>3</sup> Werbach, Kevin. Personal Weblog. August 21, 2002. September 16, 2002 <<http://werbach.com/blog/2002/08/21.html>>.

<sup>4</sup> Lemos, Robert. ZDNet News. "Spam hits 36 percent of e-mail traffic." August 29, 2002. November 17, 2002 <URL: <http://zdnet.com.com/2100-1106-955859.html>>.

<sup>5</sup> American Library Association. "Libraries, the Internet and Filtering Fact Sheet." October 16, 2002. November 17, 2002 <<http://www.ala.org/alaorg/oif/librariesfact.html>>.

<sup>6</sup> Turner Broadcasting's Jamie Kellner, in his interview with author Staci Kramer, states that viewers have a contract with the broadcasters to watch commercials, and that not doing so is theft. Kramer, Staci D. "Content's King." Cableworld. April 29, 2002. 2 May 2002 <[http://www.inside.com/product/product.asp?entity=CableWorld&pf\\_ID=7A2ACA71-FAAD-41FC-A100-0B8A11C30373](http://www.inside.com/product/product.asp?entity=CableWorld&pf_ID=7A2ACA71-FAAD-41FC-A100-0B8A11C30373)>. For more on this and related legal activities, see archives at the Electronic Frontier

It's only in abundance that we have choice. Not everything known to us is represented or offered on the Internet, but more information about goods, services, and conditions or circumstances is available now than has ever been offered in the past.

On this matter, the First Amendment of our Constitution is relevant. It says:

Congress shall make no law respecting an establishment of religion, or prohibiting the free exercise thereof; or abridging the freedom of speech, or of the press; or the right of the people peaceably to assemble, and to petition the government for a redress of grievances.

Freedom of speech and assembly assures that we can find and contribute commentary and resources to read, talk about with our friends and colleagues, analyze, criticize, debate, and develop. We affect our world in this way.

### **Access: How Control of your Words is Control of your World**

Information is useless unless we have access to it. When we seek information, or content, we gain it by way of a network (from calling friends to researching information using the Internet, for example), or going to a library, or through another resource. As discussed above, the Internet is generally open to a wide variety of access methods including dialing into an Internet Service Provider (ISP) using a modem and phone line, or connecting by a broadband (DSL or cable) service to an ISP, or using a high-speed network connection at work.

There are many ways to control or encourage access to certain or all information by using proprietary or open networks. Proprietary networks include the telephone system (optimized for transmitting voice signals as opposed to data, which "sounds" very different), cable TV networks (designed to send signals one-way), or simply having rules for computer use or limiting access to certain files at a workplace.

Access is truly a two-edged sword. Having all information available to us is not the same as having our personal details available to everyone else. Yet this is what's happening now as we are "profiled" into large databases created from our every transaction: health, finance, behavior, and more. Our liberty and our security are challenged by the very act of leaving our house, really or virtually, to interact with any group or business that wants to track our interests and movements.

### **Conflict of Laws**

Laws provide guidance and priorities for our society. They have evolved over time through legislative and municipal action, judicial interpretation, and social practices. For a creative and vibrant society to develop, "laws should serve as guidelines for the proper use of human initiative, creativity, and ability."<sup>7</sup> When laws conflict with each other, the courts or legislature are often called upon to resolve the conflicts.

### **Intellectual Property Laws**

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Foundation (EFF). "Intellectual Property - Video and DVD - Paramount v. ReplayTV case" Archive. June 3, 2002. November 17, 2002 <[http://www.eff.org/IP/Video/Paramount\\_v\\_ReplayTV/](http://www.eff.org/IP/Video/Paramount_v_ReplayTV/)>.

<sup>7</sup> His Holiness The Dalai Lama, with Ouaki, Fabien. *Imagine All the People*. Wisdom Publications. Somerville MA. 1999. p3.

Intellectual property (IP) laws were established in the United States as one of the enumerated powers in Article I Section 8 (Powers of Congress) of the U.S. Constitution:<sup>8</sup>

To promote the Progress of Science and useful Arts, by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries;

There is considerable debate about the notion of "securing for limited times" as it relates to works being protected or entering the public domain. Some people believe that securing (protecting authors' and inventors' proprietary rights) is the key idea, while others argue that promotion of science and useful arts is the foremost priority.

IP laws cover work that is intangible—manifested commonly as a patented invention, a copyrighted work, or a registered trademark. There are four general types of intellectual property: 1) copyrights, 2) patents, 3) trade secrets, and 4) trademarks and trade dress. Protection under different laws varies in type of coverage and length of time. For example, design patents are good for 14 years (non-renewable), while copyright limits use of works for 70 years beyond the life of the author, or 120 years from the year of anonymous or pseudonymous creation. In addition to the ethical safeguards for individuals, many people think that the ability to recognize and protect intellectual property is critical to the well-being of certain companies and industries, especially in our increasingly networked digital world.

Legislative history supports expanding intellectual property rights, including copyright; and more recently the need to harmonize U.S. rights with the European Union. Expansion of protection is:

...part of an unbroken chain of similar congressional enactments spanning more than two centuries from 1790 to 1998. As the Supreme Court held..., this history not only is entitled to "very great weight," but is "almost conclusive" with respect to the constitutionality of extending the terms of existing as well as future copyrights.<sup>9</sup>

The idea of promoting science and the useful arts (arguably encompassing the artistry in crafts and professions) implies that, after having been secured for a limited time, works enter the public domain where they can be used to encourage broader interpretation and new ideas. "The public domain is simply whatever remains after all methods of protection are taken into account."<sup>10</sup> However, "because we've always done it that way" is not always a compelling reason to continue the course. "The primary objective of copyright is not the right of the author or publisher to gain a profit."<sup>11</sup> Others point to the Constitution's wording: to promote science and the useful arts. Here, public domain works have a unique right of existence in supporting science and the arts:

Creativity and innovation rely on a rich heritage of prior intellectual endeavor. We stand on the shoulders of giants by revisiting, reusing, and transforming the

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<sup>8</sup> The Constitution of the United States. September 5, 2002 <[http://www.archives.gov/exhibit\\_hall/charters\\_of\\_freedom/constitution/constitution.html](http://www.archives.gov/exhibit_hall/charters_of_freedom/constitution/constitution.html)>.

<sup>9</sup> Congress May Constitutionally Extend The Term of Copyrights. Copyright Extension Web site. September 2, 2002 <<http://www.copyrightextension.org/page09.html>>.

<sup>10</sup> Samuels, Edward. The Public Domain In Copyright Law. 41 Journal of the Copyright Society 137 (1993). September 7, 2002 <<http://www.nyls.edu/samuels/copyright/beyond/articles/public.html>>.

<sup>11</sup> Gross, Robin D. Understanding Your Rights: Copyright Protection on the Internet. Electronic Frontier Foundation. September 3, 2002 <<http://www.eff.org/cafe/gross2.html>>.

ideas and works of our peers and predecessors. Digital communications promise a new explosion of this kind of collaborative creative activity. But, at the same time, expanding intellectual property protection leaves fewer and fewer creative works in the "public domain"—the body of creative material unfettered by law and, to quote Supreme Court Justice Louis Brandeis, "free as the air to common use."<sup>12</sup>

The Supreme Court on October 9, 2002 heard a case (*Eldred v. Ashcroft*<sup>13</sup>) in which current and retroactive extensions on authors' and publishers' rights to protections and profits were considered. The decision is eagerly awaited by nearly all commercial and private interests—nationally and internationally—as the outcome will most certainly have an affect on the future.

### **Common Carrier Laws**

Common carrier laws came into effect in order to balance the interests of providing certain common, public services on a non-discriminatory basis (as to use and user) with cost efficiencies inherent in a large service provider. Public interest is more clearly a goal in these laws, first articulated in the Radio Act of 1927: "...[T]he plan was to give away the spectrum and, in exchange for the privilege of using federal spectrum resources, the licensee was required to 'serve the public interest.'"<sup>14</sup>

This traditional theory granted, for example, a telephone company the status of "natural monopoly" with technological and market efficiencies characteristic of a single firm providing general phone service. In trade for the monopoly status came close government regulation. As legislation was amended over time, including the Communications Act of 1934 (the 1934 Act) and the Telecommunications Act of 1996 (the 1996 Act), governance became compartmentalized under the Federal Communications Commission (FCC) for the separate regulation of landline telephone, wireless telecommunications, broadcast (radio and TV), and cable systems.

Compartmentalization is no longer working.

Because of "technological convergence," the distinctions between services based on the delivery technology used are breaking down. Today there are some firms that act like broadcasters, mostly, but transmit by wire, e.g., cable television, and there are companies that act like common carriers, but transmit on radio, e.g., cellular and PCS [personal communications services] carriers. This convergence has begun to undermine any coherence that ever existed in the FCC's regulatory structure.<sup>15</sup>

The FCC also has jurisdictional problems that cause tension between federal and state regulatory powers. Technological evolution, including the move from circuit-switched to

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<sup>12</sup> Concepts: Public Domain. Creative Commons. September 2, 2002  
<<http://www.creativecommons.org/concepts/>>.

<sup>13</sup> U.S. Supreme Court, granting certiorari. Reference #01-618. *Eldred, Eric, et al. v. Ashcroft, Attorney General*. November 17, 2002  
<<http://www.supremecourtus.gov/orders/courtorders/021902pzor.pdf>>. A transcript of oral arguments is available at  
<[http://www.supremecourtus.gov/oral\\_arguments/argument\\_transcripts/01-618.pdf](http://www.supremecourtus.gov/oral_arguments/argument_transcripts/01-618.pdf)>.

<sup>14</sup> Goldberg, Godles, Wiener & Wright. *Communications Law and Regulation: Historical Background*. FindLaw. 1999. September 4, 2002 <[http://profs.lp.findlaw.com/communicate/communicate\\_1.html](http://profs.lp.findlaw.com/communicate/communicate_1.html)>.

<sup>15</sup> Goldberg, Godles, Wiener & Wright. *Communications Law and Regulation: Introduction to the FCC*. FindLaw. 1999. September 4, 2002 <[http://profs.lp.findlaw.com/communicate/communicate\\_2.html](http://profs.lp.findlaw.com/communicate/communicate_2.html)>.

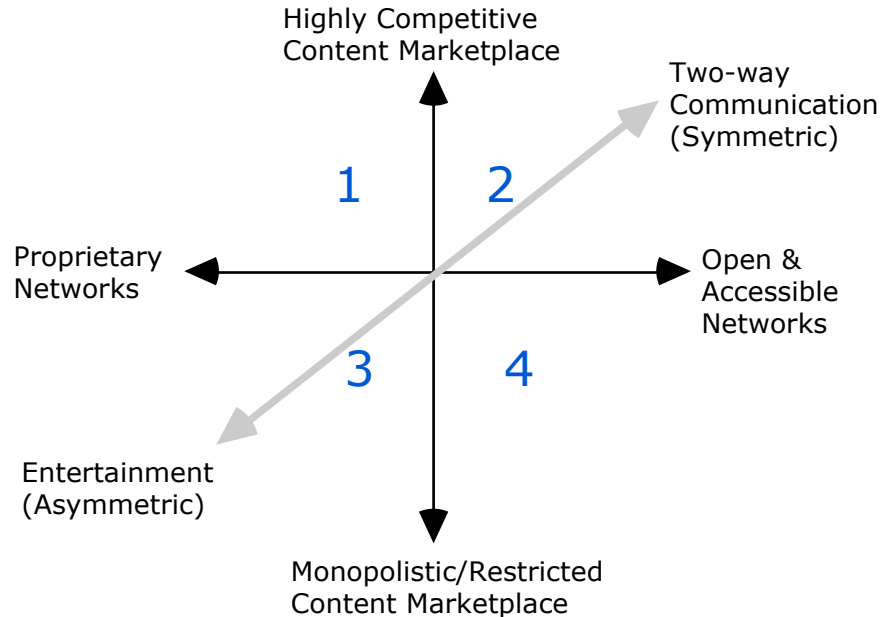
packet-switched systems, complicates the work of defining services—and thus governance—even further.

While telephone (landline and wireless) companies are considered and regulated as common carriers, broadcasters and the cable network are not. All are subject to certain public interest requirements, but telephone companies are subject to additional "must carry" requirements—public, leased, and local government access. As the services offered by the phone and cable companies increasingly overlap, the battle cries become louder for a more equal regulatory field and as well, more predictable protections for customers.<sup>16</sup>

Recently, FCC Commissioner Michael Powell took bold steps to cross common-carrier lines in favor of strengthening re-monopolization and consolidation in the telecom market—as well as reducing the benefits of regulation, including state or local enforcement of customer service standards. Powell declared both the incumbent local telephone exchange carriers (ILECs) and the cable companies to be providing "information services." This significant legal move places telephone- and cable-based broadband services beyond regulatory restriction in areas of pending access to competing service providers, and regulating costs and services to customers.

## Four Scenarios

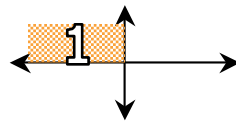
For the purposes of this report, let's sketch out four scenarios. Consider the marketplace as being defined primarily by two axes: degree/nature of access to the benefits of globally connected networks, and control of the content available on those networks.



<sup>16</sup> For more background on common carriage and the threats by private and contract carriers, see Noam, Eli M. Beyond Liberalization II: The Impending Doom of Common Carriage. March 15, 1994. September 9, 2002 <<http://www.columbia.edu/dlc/wp/citi/citinoam11.html>>.

These axes separate our digital world into four hypothetical futures in which the forces of control have very different effects. A world where one has lots of access but very little information to choose from will encourage different personal and cultural development from a world that has lots of information but no way to find it. A world that is very controlled in terms of what information is available and when or how you get access to it will likewise produce a different society than a world that's easily accessible and open to new information and development of new ideas.

While this report focuses on the people and culture of the United States, many of the concepts will be applicable globally. When appropriate, examples from our global history will be used in the following scenarios to illustrate certain circumstances. In reality, none of these scenarios will exactly describe our future. It is more likely that our future will have characteristics from each quadrant, expressed to various extents in different environments. It is also likely that the extent of controls will be shaped, in coming years, by the well-financed lobbying efforts of some special interests, the wisdom (or lack thereof) expressed by the courts, and/or the potentially emerging grassroots voice.



**Quadrant 1: Many Walled Gardens** is an environment of proprietary, branded, and fragmented networks. The networks may claim to be connected to each other, but communication between them is difficult. AOL's customers can't chat with Microsoft's or Yahoo's customers, who can't connect with AT&T's or Sprint's or Sony's customers. There are lots of "consumer" communications devices, but each works with only one provider.

America Online (AOL) is a case in point, with its proprietary environment and tools like Instant Messenger, AOL Mail, and even its own AOL Web browser. The AOL opening screens are filled with advertising and buttons that take you to other AOL services (which of course have more advertising). A user must be determined to leave the AOL environment and venture out into the untamed Internet. In this way AOL acts as a filter, limiting their customer's world to those companies with which AOL has a business relationship.

AOL's Instant Messenger is a popular chat tool that relies on AOL's servers to relay messages to users. Several other companies have attempted to make chat clients compatible, but AOL keeps shutting the others out claiming AOL's security is being breached. If network security is that easy to breach, they have a bigger problem than they're willing to admit. It's more likely their financial security they're worried about, since other chat clients would not be accepting the ads that are mandatory with AOL. Ads are a significant part of the AOL experience, as users well know.

Microsoft is also moving in the direction of offering a proprietary network, with their .NET,<sup>17</sup> Passport, and Palladium technologies. Still a monopoly on the computer desktop, Microsoft has demonstrated the will to compromise other technologies to their exclusive benefit. A closed network of users is certainly in Microsoft's cards.

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<sup>17</sup> For more on Microsoft's .NET initiative, see: Clark, Judi. Networks for the Future: To .NET or Not. NetAction. 4 September 2002 <<http://netaction.org/futures/networks.html>>.



Wireless phones offer yet another example. Once you buy a cell phone, you are locked into a specific provider's network. If you want to open an account with another provider, you'll likely need to buy a new phone.<sup>18</sup>

Let's assume that this trend continues for five or ten more years. The Telecommunications Act of 1996 promised competition, which—in the following five years—rose, then fell off into oblivion. Competition continues, but only for the very big companies: AOL-Time Warner, Microsoft, two big cable companies, three big local Bell telephone companies, and a few large media interests that buy up and partner with various bit players on their way out of the market. Those become the only choices for Internet connections. But what's left of the Internet?

One example of how this would play out is a university network that limits students in the dorms to Internet access through one particular ISP. The university limits student use on its own network due to the increasing cost of litigation and misuse of resources, and the ISP limits the available network speed to prevent file sharing and certain other uses. Additionally some ISPs team up with certain Internet Services vendors, and that results in some services being incompatible with other network users' systems. (AOL users can't chat with MSN or Yahoo users, MSN users can't exchange video files with Real users, etc.)

The university also institutes policies outlawing wireless networks, ostensibly because that technology interferes with essential university wireless technology (university phones, remote controls, etc.) In addition, the University-based ISP promotes advertising because students represent an important consumer market.

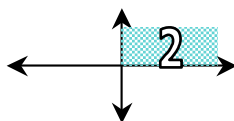
In this scenario, once a user gets access, a great deal of information is available. Universities, commercial interests, non-profit organizations continue to offer an abundance of diverse communications in the form of research, white papers, marketing brochures, action kits, guides and pamphlets, and much more. To the extent allowed by the big networks, regular folk still publish Web pages and carry on discussions about their work, their families and personal interests. But independent developers would bear the increasing cost of making information accessible to each of the competing networks, or risk being unreachable.

Fear of "information overload" is exploited as a scare tactic to promote "safe and controlled" environments. Safe and controlled, however, means that some knowledge and references are limited or not available at all. The big networks act not only as filters, but carry individual biases as to what kind of Internet is available to their users. In the end, the bias of the networks, even if it is expressed only through advertising, limits the likelihood of informed decisions. Increasingly, the network becomes the message.

If you are a small business (in this scenario), say a technology developer, one strategy would be to create a framework for providing network oligarchs with variants of your technology, which intentionally does not interoperate with other networks. If your tools or toys are good, everyone will want them—for their own customers only.

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<sup>18</sup> At least two class action suits are in progress: Wireless Consumers Alliance Inc. v AT&T. U.S. District Court, Southern District, District of New York. Case # 02 CIV 2637. September 14, 2002 <[http://www.wirelessconsumers.org/HTMLs\\_PDFs\\_Images/Anti-trust%20Complaint.pdf](http://www.wirelessconsumers.org/HTMLs_PDFs_Images/Anti-trust%20Complaint.pdf)>. Also see Millen v AT&T. U.S. District Court, District of Massachusetts. Case # 02-11689WGY. September 14, 2002 <[http://www.wirelessconsumers.org/HTMLs\\_PDFs\\_Images/Boston%20Complaint\\_Aug23.pdf](http://www.wirelessconsumers.org/HTMLs_PDFs_Images/Boston%20Complaint_Aug23.pdf)>.



**Quadrant 2: Just Route the Bits.** Landline and wireless telephones easily connect to computers, personal digital assistants (PDAs), set-top devices, and new tools as they are developed. Computer and network users have access to the network from their favorite software and hardware devices. Encryption is widely and invisibly deployed. Autonomy is key; no one is locked into doing things in a particular way.

The technical community largely works to support the global public interest, making the whole collection of networks (phone, cable, wireless, satellite, etc.) a commodity. Communication is symmetric and open, encouraging a free flow of content development and use by everyone, everywhere. Many people feel that this is the most desirable and, for the moment, most politically challenging scenario.

As an example, let's say students in the future publish their school works online, making it available for reading and peer review by a global audience. Students' handheld computer and communications devices work in their classrooms as well as remotely, taking care of technicalities like authorship and authenticity, security, and connecting to the Internet. The Internet is not limited by technology, but is open in design and use.

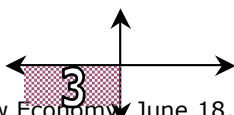
Brand names are much less important as marketing tools, as customization is now the priority. Digital watermarks and trademarks are no longer needed, as a document's content is keyed to authorship and authentication factors. Copyright is assured and not enforced. The nature of a document's content can be weighed against bodies of work by other authors. When some information is treated as fact, its origins and context can be traced. Anonymous documents might be represented by one or more Surety bodies.

In this scenario, information is plentiful and easy to reach. It's so easy and so abundant that people can be overwhelmed by all that's available. Some will be amazed and energized by their options and possibilities, looking for ways to better themselves and their worlds. Others will retreat from the chaos. A few will fear it.

Too much information may deter access to what's critical. Filters help some, but may not be effective in such a rich world. It can be a cerebral challenge on one hand, but utterly distracting on the other. Like having all the tools to create something you'd want, but not knowing what that might be. Or walking into a department or grocery store and suddenly not remembering why you came in—a subconscious short circuit.

"When information is plentiful, peers take over. In fact, as reliable information becomes common, almost nothing can stop peers from taking over."<sup>19</sup> This is a world in which your friends and trusted references often help you sort through and find what's needed. Communities develop to enrich and interpret the vast global database of knowledge. Here, people matter most.

If you're a small business in this scenario, you might partition your work or designs so that you can give large strategic portions of it away for free—before someone else does.



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<sup>19</sup> Kelly, Kevin. New Rules for the New Economy June 18, 2002 <<http://kk.org/newrules/newrules-9.html>>.

**Quadrant 3: You Will.** AOL-Time Warner, which already controls #2 cable provider Roadrunner, gets widespread broadband or wireless deployment and expands its customer base and market position. The remaining ILECs all merge into one or two, or collude as a cartel. Microsoft implements a thousand proprietary software functions which, with the help of virus writers, destabilize the Internet causing Microsoft to implement more proprietary protocols, creating a new network just for its customers.

Hollywood acquires vast intellectual property and patent portfolios that, partnered with strong laws controlling use and distribution, provide Hollywood incentive to further expand its holdings. Special networks provide exclusive pay-per-view offerings. There's little competition among broadcasters, insured by high costs and monopolies in the broadcast market.

Devices like set-top boxes are simple and standardized, and cooperate. Innovation is limited due to coordination and development cycles of the broadcasters. Content is catalogued for authenticity before release, making it easier to find, control, and collect fees on its use. Commercially acceptable artists may have a financially secure future as long as their work is within established Hollywood guidelines. On the other hand, independent artists aren't catalogued and don't have much of a chance to be heard.

Internet service providers are increasingly limited in number. Following the Disney + MSN partnership of 2002,<sup>20</sup> most providers have merged or partnered with the big entertainment interests. Ad companies are delighted, handing advertisers captive movie and television audiences.

As an example, Microsoft, AOL and Intel might form a new alliance to "tame the wild beast that was the Internet." In this scenario, virus-carrying email causes widespread disruption of home computers and business networks, escalating until it results in a nationwide business shut-down. Through .NET and other network-based mechanisms, Microsoft controls and forces application of updates and patches in home and office systems alike—from the operating systems right through to desktop applications.

AOL controls unwanted virus-carrying email and unwanted commercial e-mail promoting fraudulent products or get-rich-quick schemes, identifying and disallowing unauthorized commercial content.

Intel addresses concerns for system and intra-network stability in the business world by providing a dependable, stable computer, from desktop to handheld, that works with new Microsoft and AOL technologies. As a bonus to Hollywood, it also controls the copying of unauthorized content.

In this scenario, the Internet is limited to what the providers will give access to. Partnerships between content providers and the network distributors happen at a frantic pace, since Hollywood determined through research that the audience likes "new" things.

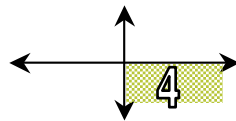
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<sup>20</sup> Hansell, Saul. "Disney to Offer New Internet Access Service." New York Times. October 25, 2002. October 25, 2002 <<http://www.nytimes.com/2002/10/25/technology/25NET.html>>.

If the public isn't paying attention, they won't know what's going on; they may sink into their chairs, not raising their hands from the mouse button or TV remote control until it is too late. The laws could be passed and the restrictive technology manufactured if the public decides the programming isn't that bad, and Internet access is easy—something they don't have to think about. As long as they don't need to buy a new TV or computer, there's no problem. When new equipment is required, consumers will have to choose between different sets of options for specific networks or service providers. Consumers had better be happy with their choices, however. The results of a bad decision may cost them the price of more new equipment.

Entertainment experiences alter our worldview. This scenario is a land of brainwashing, where our environment is often stronger than our will. Those in ultimate control of our access and information are in strong positions to control our thinking. The government of China, for example, limits its citizens' access to networks and information. When those leaders re-write history, it's not long before the Chinese population is behind their leaders in telling the story of "the way it was." They feel a part of the system, not realizing there's another story to be told. Hitler, too, used controls in his way to paint the "way" of the world. Many, many people went along with him. It's very difficult in this scenario to find or create a different world, a different "way."

Entrepreneurs' best bets are to be bought by one of the oligopolies. Individual strategies don't stand a chance unless they have the support of the giants.



**Quadrant 4: The 10,000 Mickeys.** There's an abundance of innovative devices for displaying the few available Time-Warner e-books or showing the limited selection of movies that Disney offers at any given time. Now merged, cable giants Comcast and AT&T Cable offer their broadband customers a choice between @Home or Earthlink, Internet service providers that are intermediaries offering different packages on the Hollywood and the RIAA access portals. Open Source projects flourish, but are constrained to work with established and standardized digital rights-management tools and licenses. Whatever happens, it's gonna cost you.

Information is biased and filtered. People are not terribly well informed, as their news coverage and perspective is limited to coverage of stories that the network thinks is suitable for its audience. If viewers have questions, say, about a toxic product that the prevailing channels aren't covering, they won't find much information. What's new are the reruns and spin-offs currently being offered. Sports scores can be obtained anytime, anywhere. There's comfort in not knowing; there's still plenty to see, partial pictures are good enough, and this becomes a safe environment.

The ability to copy works has gotten considerable attention, especially lately, causing the FBI and Congress to react (or thoughtlessly over-react, as many believe) to protect copyright holders.<sup>21</sup> Fair use has been eliminated. Libraries must now buy site licenses for their digital media, and copy machines mark serial numbers visibly on each copy. Several versions of digital rights-management software are available on the net and

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<sup>21</sup> One good resource that follows this issue is the Home Recording Rights Coalition. "What's New." November 15, 2002 <[http://hrrc.org/html/what\\_s\\_new.html](http://hrrc.org/html/what_s_new.html)>. Copying is not a new battle, as their Chronology page points out. November 15, 2002 <<http://www.hrrc.org/html/chronology.html>>.

users must choose between versions in order to play commercial recordings. Time shifting is allowed for an extra fee. Location shifting is discouraged, but a few people have convinced The Omnipotent Network that an ad hoc pay-per-view option would be desirable as an alternative to the normal subscription model. Users must now pay for each use, each song played, each movie viewed.

Many new technologies have been introduced to, then withdrawn from, the market due to their limited usability and/or available content. Open networks encourage creative devices, but connecting to the real networks and real news sources is difficult, resulting in the technologies becoming secondary to local communities, friends, and colleagues.

The cost of publishing personal Web sites is now too high for most people to afford. The networks, concerned about vicarious liability, have passed copyright insurance costs on to consumers. Protecting rights holders, including locating and suing infringers, has become big business. People now feel safer lurking on the net from one of many available devices than actually participating.

The cost in this scenario is that copyright holders may cause a backlash as the mass market's craving for distraction grows. Here, an entrepreneur might find success in offering goods, services, or technologies through open source or unlicensed content.

## **The Eye of the Storm**

As mentioned above, the "official" future will most likely include some elements from each of these scenarios. The question is how much of each? To answer, we must start our exploration in the present: the center point in these scenarios.

Each scenario has already begun:

As is the example in **Many Walled Gardens** (Quadrant 1 above), AOL has a proprietary network with limited access (once you find your way out of AOL) to broader Internet content. Microsoft, through its market history and current .NET and Passport technologies, has shown that it also wants to control the network but may be willing to give some access to public content through proprietary tools such as Microsoft's Internet Explorer, Windows Media Player, wallet, chat, MSN's search, and more. In Congress, several bills have been introduced to restrict or "protect" the networks and/or the users:

- H.R. 95 and H.R. 718: Unsolicited Commercial Electronic Mail Act of 2001 (to protect individuals, families, and Internet service providers from unsolicited and unwanted electronic mail)
- H.R. 1542: Internet Freedom and Broadband Deployment Act of 2001 (to deregulate the Internet and high-speed data services, and for other purposes)
- H.R. 1846: Who Is E-Mailing Our Kids Act (to amend the Communications Act of 1934 to require schools and libraries receiving universal service assistance to block access to Internet services that enable users to access the World Wide Web and transfer electronic mail in an anonymous manner)

- S. 2582: National Broadband Strategy Act of 2002 (to require a report to Congress on a national strategy for the deployment of high speed broadband Internet telecommunications services, and for other purposes)
- S. 2839: Children's Electronic Access Safety Enhancement (CEASE) Act (to enhance the protection of privacy of children who use school or library computers employing Internet content management services, and for other purposes)

**Just Route the Bits** (Quadrant 2) is a continuation of the Internet's original philosophy: make open tools to communicate, and people using those tools will have something to say. People change their tools to fit their needs. Flexible tools find their way into creative uses as technology is allowed to evolve naturally. Many of the technologies underlying our current Internet, as well as many private intranets, are open source and thus open to further enrichment and development. People are increasingly exploring ways to "give things away."<sup>22</sup> There is little visible support for this scenario in Congress since most politicians pander to protectionism. The few bills that speak to openness and freedom are:

- H.R. 5524 and S. 3093: Global Internet Freedom Act (to develop and deploy technologies to defeat Internet jamming and censorship)

**You Will** (Quadrant 3) is the preferred model for the record industry and Hollywood interests that, with the help of their political lobbying dollars, seem bent on removing "fair use" and "time or place shifting" from our vocabulary. Several bills are being considered to do this. Control of networks and when content is delivered gives broadcasters maximum influence over our environments and thus our worldview. Big media continues to consolidate with the support of the FCC, despite what viewers and listeners want.<sup>23</sup> Several of the Congressional proposals listed in Many Walled Gardens above also strengthen this scenario, with additional support very likely in the next Congress:

- H.R. 95, H.R. 718, H.R. 1846 and S. 2582 (referenced above)
- S. 2863: Consumer Broadband Deregulation Act (to provide for deregulation of consumer broadband services)

**The 10,000 Mickeys** (Quadrant 4) is exemplified by Microsoft Reader, Adobe E-book Reader, and Adobe Acrobat. The readers are free, but the "e-books" and other viewable documents that you can purchase are tied to the specific capabilities or limitations of the reader software. A decision favorable to the government in the *Eldred* case will be influential in this scenario.

Within these scenarios, each success or failure will depend on the players: hardware and software designers and manufacturers, special interests such as Hollywood and the Recording Industry, the government regulators, the courts and Congress, and most

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<sup>22</sup> For one interesting take on this strategy, see Kulikauskas, Andrius, and Ellison-Bey, David. "An Economy for Giving Everything Away." October 17, 2002. November 17, 2002 <<http://www.ms.lt/en/workingopenly/givingaway.html>>.

<sup>23</sup> Consumer Federation of America. "Public Support For Media Diversity And Democracy In The Digital Age: A Review Of Recent Survey Evidence." October 31, 2002. November 18, 2002 <<http://www.consumerfed.org/MediaSurvey10.31.02.pdf>>.

importantly the computer users (who have largely been silent as to their desires and needs). Battles are waged in the form of lobbying dollars and campaign contributions, user-patronizing political positions, technologically limiting designs, civil disobedience, and more. Battles are lost through silence and inactivity.

Once not that long ago, television—new and promising technology of the time—had an uncertain and unsullied future. Now it is merely an advertising delivery mechanism. Will the Internet follow suit? Have we learned any lessons from our past battles that we can apply to our current situation? Who cares, and what will we pay to have things our way? Will consumers use laws and choose technology to create a future that they desire and will find useful? A lot is at stake, and the future remains uncertain. We need listen only to the voices to divine our direction.

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### **In Closing**

The author wishes to thank Nicole Parizeau, Judith Cohen, and Audrie Krause for their assistance in preparing this report.

### **About the Author**

Judi Clark, a NetAction Advisory Board Member, has been riding the curl of the Internet wave for over a dozen years. During that time, she has explained, instructed, illustrated, documented, written copy, set context, and provided perspectives for a wide variety of businesses, schools, and clients.

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