



Why the Public Domain Matters

The Endangered Wellspring of Creativity,
Commerce and Democracy

By David Bollier

NEW AMERICA FOUNDATION
PUBLIC KNOWLEDGE



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 **Public Knowledge**

Washington, DC

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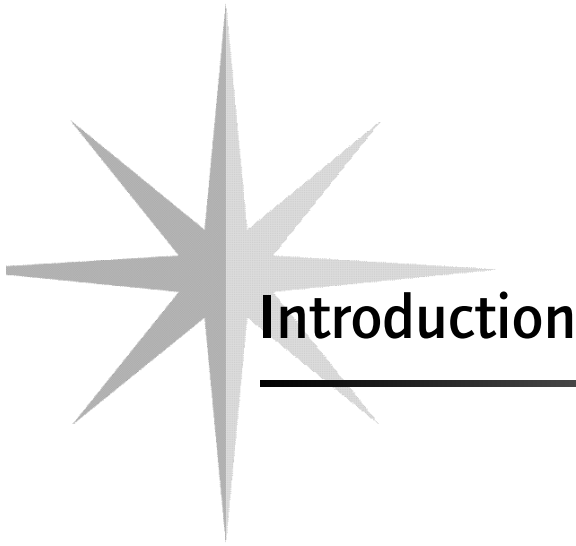
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Introduction

The public domain has always been thought of as a peculiar cultural junkyard on the outskirts of reputable society. According to conventional thinking, it is the place where the antiquarian explorer can find *Treasure Island* and Scott Joplin piano rags languishing alongside deservedly forgotten books, illustrations and music. The public domain has traditionally been seen as a fairly static collection of works on which copyrights and patents have expired and works that were not copyrightable in the first place, such as government documents and scientific theories. It also consists of those dimensions of our common culture that cannot be legally protected, such as plotlines, titles, themes and facts.

The public domain is an interesting and even fun oeuvre, goes the thinking, but it is not really a resource of much economic or creative value—more like a romp through your grandmother’s attic than anything else. Not surprisingly, legal scholars and legislators have largely neglected the public domain as a subject of examination.

It is becoming increasingly clear, however, that such preconceptions about the public domain are themselves antiquated and in need of revision. Though rarely acknowledged, the public domain has always been critical to new creativity, the progress of science and technology and the vitality of our democratic culture. This is unfortunate. Because of our conceptual blinders about the public domain, “copyright maximalists” have been able to extend the scope of copyright protection through many means: longer terms of copyright protection, new technologies that eliminate the public’s fair use rights, attacks on the first-sale doctrine which otherwise lets users share or re-sell purchased copies of works and court rulings that give narrow interpretations to traditional copyright doctrines.

At the same time that the public domain has been under siege, the Internet and a passel of new digital technologies have made the public domain an even more important element of our economy and culture. A key reason for this is that technology has empowered people to become active creators in their own right, and not just passive consumers. Millions of people now use email, host their own websites, use open source software, interact through online games and collaborative websites and freely share data files.

By helping to create these new sorts of communications genres and shared cultural spaces, the Internet has dramatically extended the traditional functions of the public domain; what was once a vital “hidden” resource for propertized creativity (i.e., copyrighted works) has become even more vibrant now that electronic networks are empowering people to create, share and interact in richer ways.

Much of this new vitality stems from the propensity of online spaces to generate content in a highly decentralized, “bottom-up” fashion. It is characterized by wildly unpredictable fare and styles. Paleontologists and rare book collectors, fans of Peggy Lee and anti-globalization activists, cat lovers and Marxist theorists all have their place at the table. In this realm, new content tends to be generated without market incentives, propelled instead by community-based “gift economies” exemplified by Linux and peer-to-peer software. Via the open Internet infrastructure, remarkable creativity and useful information arise spontaneously, confounding neoclassical economists who believe that valuable works simply will not be created without strict property rights and markets.

But one result of the new technologies is an intensifying tension between information

artifacts sold through conventional markets (such as books, videos and music) and community-generated information that is shared online (websites, listservs, open source software and peer-to-peer file sharing are examples). At the heart of this tension is a political contest over what shall be the scope of the public domain in the digital age.

For the “content industries,” the public domain is hardly worth talking about. What matters to profit-seeking enterprises are marketable content and the ability to strictly control it. Accordingly, publishers, record labels and film studios are developing new schemes to lock up content: digital rights management systems, which include copy-protection encryption and digital watermarking, and legal bans against circumventing encryption or even *discussing* circumvention techniques.

The public domain is important for enabling people to access and use creative works and information without unreasonable impediments, permission requirements and fees. It represents a constellation of customary practices and legal rights that enable all sorts of endeavors—science, education, scholarship, creativity, journalism, democratic dialogue—to remain open and vigorous.

If most denizens of cyberspace enjoy all sorts of mass-marketed content, they also recognize the public domain as a rich, vibrant cultural space. It is not simply the place where scraps of orphaned creativity are left on the table after market players have taken their profits, nor an agglomeration of archaic works or fragments used under the “fair use” doctrine.¹ For most Internet users, the public domain is seen in a much more expansive way: as a communications space that is open and accessible to all, that is hospitable to new creativity and competition and where information

can be freely shared. Although these attributes might be taken for granted in print-based culture, it is becoming clear that they must be consciously designed into the architecture of digital culture, especially on the Internet.

Protecting the public domain in the digital age is especially challenging because commercial information providers have legitimate concerns about how they can make a profit and individual authors worry about earning a livelihood. But it is not immediately clear how these important concerns can be reconciled with the “gift economy” dynamics of the Internet that also generate important types of creative works and information. The heart of copyright law has been a deft balance between private property rights and public interests. Recalibrating that balance in the face of disruptive technologies and political interventions represents a major policy challenge.

The Information Commons

It is fair to say that, as a vast new communications infrastructure has emerged, we have reached a new juncture in our cultural history. The public domain, always a quiet but powerful force in fostering creativity and public dialogue, has been greatly enlarged and empowered by the new technologies. Yet strangely, the public domain is hardly recognized for what it is even as it is threatened by media industries determined to protect their market franchises. The public domain should not be regarded as a peripheral outland of science, education, communications and culture, known only as the shadowy obverse of intellectual property. It is the open, non-commercial semiotic space that is indispensable to our democratic society.

Precisely to recognize its central, affirmative value to American life—beyond the narrow, legalistic anti-property notions that are tradi-

tionally imputed to “the public domain”—many commentators are starting to refer to this zone as “the information commons.” The commons is a useful term because it does not imply a static set of information genres (copyright-expired books, government documents, etc.), but a dynamic “ecological system” of creativity and communication. The term, “the commons,” implies that what matters is the *flow* of creativity and information and the overall vigor and complexity of those flows in our society. In this sense, copyright, trademark and patent law all affect the public domain, as do the ways that the communications infrastructure and government information resources are managed. The commons implies that the social ecology of creativity and information is important to *everyone*; it is not just a proprietary concern of copyright owners and industries.

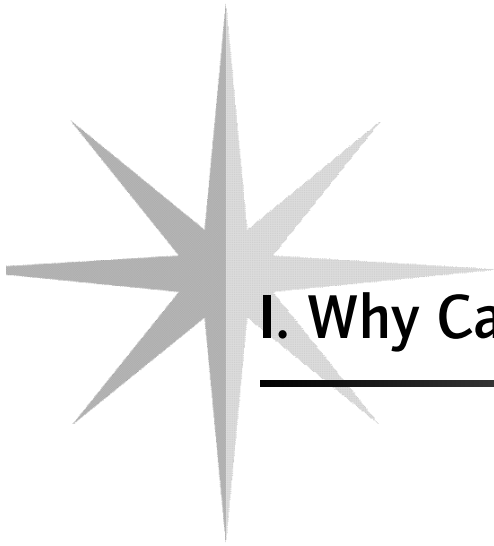
The “commons” helps us shift the focus of discussion from market and property categories alone, and to begin to validate a conceptual framework in which a broader array of personal, social and democratic values have standing. It also allows us to consider the role of the communications infrastructure (such as the end-to-end architecture of the Internet and spectrum management policies) in facili-

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tating a public sphere that is open and accessible. “The public domain” and the “information commons” overlap to a significant degree, but I regard the latter term as having more expansive connotations.

It bears noting that the commons is not an enemy of the market, but rather a necessary complement to it. Copyright and patent protection serves many valuable functions and should be stoutly defended, such as providing incentives for innovation. But it is hardly

radical to call for limits on the scope of copyright and patent law, particularly in cases where future innovation is threatened. That was a fundamental goal of the nation’s founders in making them part of the U.S. Constitution. What must be preserved is a delicate balance between the market and commons so that both can maintain their integrity, serve their respective purposes and invigorate the other. Right now, this balance is dangerously askew.



I. Why Care About the Public Domain

It will take time to fully understand the new cultural space that has emerged over the past decade, but clearly one of the most urgent and neglected tasks is to understand what the public domain consists of and why it matters. It may help to start with some familiar, everyday activities:

- A research scientist pores over the clinical data published by his colleagues.
- A professor excerpts several book paragraphs for a new scholarly paper.
- A music fan copies her favorite songs onto a CD so she can play them in her car sound system.
- A musician “quotes” a riff from a famous song as a tribute to another artist and as an evocative cultural statement.
- A website designer uses a photo of a Barbie doll to make a droll comment on American ideals of female beauty.
- A teenager posts pictures of Harry Potter on his website devoted to his favorite books and music.
- A citizen group uses an Internet listserv to send online copies of newspaper articles to its subscribers; it also posts hyperlinks on its website to its political nemeses.
- A video store makes money by renting out videotapes of Hollywood movies.

Most Americans take these sorts of creative acts and information transfers for granted. But in reality, these acts can only take place because our society sanctions a legal/cultural matrix called the public domain. It is the realm where any-

one can acquire and use a work, share it with others and modify it to create something new entirely.

The public domain is a kind of open “white space” in our culture. It serves as a haven for expression that is new, experimental, civic, political, scientific, educational, artistic, disruptive and/or personal. Without the public

Without the public domain, it would become exceedingly difficult for creators to create anything new because the very act of creativity would infringe upon someone else's intellectual property.	<p>domain, it would become exceedingly difficult for creators to create anything new because the very act of creativity would infringe upon someone else's intellectual property.</p> <p>This definition may sound a bit general and in a sense, it is. Copyright law has long considered the public domain a mishmash of different genres and stipulated uses. Its only common denominator is that public domain works cannot be privately owned. “Copyright does not protect</p>
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ideas, methods, systems, facts, utilitarian objects, titles, themes, plots, *scènes à faire* words, short phrases and idioms, literary characters, style, or works of the federal government,” writes Professor Jessica Litman. She adds that “this hodgepodge of unprotectible matter was without overarching justification then [when the 1976 Copyright Act was enacted], and it remains so today.”²²

Professor Pamela Samuelson recently attempted to map the public domain and its “adjacent terrains.”²³ By her reckoning, the

types of information that are generally regarded as part of the public domain include:

- Scientific principles, theorems, mathematical formulae, laws of nature and the like
- Scientific and other research methodologies, statistical techniques and educational processes
- Ideas, concepts, discoveries, theories and hypotheses
- Facts, information, data, know-how and knowledge
- Laws, regulations, judicial opinions, government documents and legislative reports
- Innovations qualifying for intellectual property (IP) protection in which no rights are claimed or in which rights have expired (e.g., copyright, patent and plant variety protection)
- Innovations not qualifying for IP protection because they are unoriginal, obvious, generic or otherwise outside the bounds of IP (e.g., telephone directories, fonts, incremental technical innovation, genericized trademarks such as aspirin, new physical exercises, grocery lists and bland forms)
- Words, names, numbers, symbols, signs, rules of grammar and diction and punctuation

Samuelson also identifies a number of terrains that are “adjacent” to the public domain and which for practical purposes serve the same purpose. These include works whose intellectual property rights are about to expire; works that are useable under the fair use doctrine; works that may be copyrighted but are widely usable without restrictions (such as material on publicly accessible websites); open source software; and perhaps works that are about to be made, such as a new computer programming language, that will enter the public domain once they exist.

This is a rather large, eclectic inventory of information genres with no obvious or principled boundaries. If the contours of the public domain seem fuzzy, that may be because there is no settled or coherent theory about its dimensions. The public domain has accrued, over time, through irregular and incremental congressional amendments and court rulings.⁴

Legal Fictions About Creativity

Some copyright traditionalists claim that there is no real need for an affirmative theory of the public domain. All that really matters, say such scholars, is an articulated body of copyright law; the public domain is simply that which is left over.⁵ Other scholars argue, however, that the public domain is an essential part of the “cultural bargain” of copyright law. Authors receive exclusive monopoly rights on their works for a limited period and, in return, the public receives certain rights of fair use, free access to works after the copyright term has expired and other enumerated uses that benefit the public good. This is the logic animating Article I, Section 8, Clause 8, of the U.S. Constitution: “The Congress shall have Power to...promote the Progress of Science and the useful Arts, by securing for limited Times to Authors and inventors the exclusive Right to their respective Writings and Discoveries.”

However, this rationale for copyright does not help us determine the proper *scope* of the public domain. In fact, throughout the history of copyright law, the public domain has been a notoriously elusive concept. Professor Litman has a cogent explanation for why this is so. The public domain, she shrewdly notes, is a “legal fiction” that is necessarily an elastic, fuzzy concept because that is the only way that the larger fiction about “authorship” can be

maintained. The larger fiction is the assumption that all creative works are original.

Under copyright law, originality is the rationale for assigning exclusive ownership rights to a creative work. Copyright law assumes that an author creates something new from scratch and is solely responsible for a unique and original expression. But of course, authorship in practice is more akin to creative transformation. Everyone must *borrow* in some degree from previous authors and the general culture. Elvis borrowed from the blues tradition, Shakespeare reworked ancient myths, Andy Warhol “stole” from Campbell’s Soup and George Harrison’s *My Sweet Lord* was formally adjudged to have derived from the Chiffons’ *He’s So Fine*. What we call originality is in fact a process of modifying, quoting and extending the work of others, usually mixed with *some* elements of novelty. The point is that some sort of *appropriations* as essential to authorship as *originality*.

But how can *both* be aspects of authorship? “To avoid choosing between the two,” Litman writes, “we rely on the public domain. Because we have a public domain, we can permit authors to avoid the harsh light of a genuine search for provenance, and thus maintain the illusion that their works are indeed their own creations....”

It would be both “impossible and unwelcome” to try to determine which authors are responsible for which specific elements of “originality,” writes Litman. We tolerate “the grant of overbroad and overlapping deeds [of copyright protection] through the expedient assumption that each author took her raw material from the commons, rather than from the property named in prior deeds.”⁶

We presume that any creative appropriations come from the public domain. That, in

turn, allows us to preserve a key premise of the copyright system: that authorship is based on “originality.”

No wonder the public domain has been considered the “dark star in the constellation of copyright,” in David Lange’s words. A frank reckoning with the actual dynamics of authorship—what is original and what is appropriated—would disrupt the intellectual clarity of copyright law. This helps explain why a consistent theory of the public domain may be impossible. A fuzzy definition of public domain is positively *useful*. It is the price we

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New Technologies and the Public Domain

But what if new Internet technologies begin to change the dynamics of the public domain, giving it a more central role in new creativity and culture? What if it became more evident that borrowing from others’ works is as important to creativity as originality? What if the over-properitization

of works began to demonstrably impede creativity and thwart information flows?

This is precisely what is happening today. The Internet and new digital technologies not only reveal that everyone borrows from everyone else, but that they are *encouraging* online collaborations that directly flout the idea of individual originality. No individual “created” Linux, online genealogical research sites or

shared Internet archives of scientific knowledge. These are entirely new types of platforms for interactive, community-based creativity and they have little to do with traditional notions of authorship.

Even in cases where we honor individual creativity, the new technologies are revealing that even “original” creativity depends upon the public domain. The sampling that lies at the heart of rap music may be the most obvious example, but in truth the evolution of virtually all musical traditions—rap, country, rock, blues—vividly illustrates this fact.⁷ Artists work within an intergenerational community of other artists and necessarily must appropriate from other works in order to create something new. As Vaidhyanathan explains: “The blues tradition values ‘originality’ without a confining sense of ‘ownership.’ In the blues tradition, what *is* original is the ‘value-added’ aspect of a work, usually delivered through performance.”⁸

For centuries, in practice, there has been a structural tension between the idea of original authorship and the public domain. It has been a coiled equilibrium, to be sure, but it nonetheless has been fairly stable. Creativity has had a twin identity—as a communal resource and individual property—much as light is both particle and wave.

Analogue media have helped keep these dual aspects of creativity intact. When words, sounds or images are embedded in paper, celluloid or audiotape, they are not easily copied, modified or distributed. They are embedded in the artifact (book, vinyl disk, film) and “stick” there. As a result, the creativity tends to be tightly associated with the individual creator, in his marketable artifacts, while the artistic community that, in its own way, also contributed to the creative work is allowed to

flourish, unimpeded by property claims, through the public domain.

But now that creative works are increasingly expressed in digital forms and their “physical containers” are almost incidental, works are becoming highly fluid. They can be quickly and inexpensively copied. They are not confined to a local geographical community, but can be distributed on a global scale. Creative works that are let loose into a networked culture of digitized content are often regarded as presumptively shared and share-able.

But copyright owners generally do not want their information products to be free and share-able, and so expend a great deal of resources trying to lock up their films, books, music and data. Publishers are increasingly using software, legal contracts and new federal laws to restrict how libraries may share digital information. Record companies are trying to prevent consumers from making even personal copies of CDs. Information vendors are seeking legislation for databases so that they can assert copyright control over facts. Film studios are seeking to force hardware and software makers to redesign their products in order to thwart any potential copying of their works, even if that means disrupting other functionalities of electronic systems.

So, if on the one hand, “information wants to be free,” most market players on the other hand tend to want information tightly locked up so that they can reap its maximum economic value. These essentially opposing forces are creating new riptides in copyright law; the political equilibrium that has long prevailed in copyright law is being shattered. Never before have companies so zealously sought to proper-tize so much information, creativity and culture for private market gain. Yet never before has the technology also enabled (for now) such

openness and sharing. In this polarized environment, a stable middle ground seems increasingly less tenable.

These changes in technology and markets force us to reconsider the nature of the public domain. Long regarded as fairly static, the public domain is in fact highly dynamic. It can expand and grow or it can be sharply reduced in scope by technology, markets and law. Indeed, with the rise of the Internet, our very standards of judgment for determining what works (and uses of works) shall be considered “private property” and what shall be considered publicly owned and accessible, is shifting.

In the 1960s, when a consumer made an audiocassette copy of a record for personal use, the economic consequences were seen as tolerable and its civic value was widely recognized. So, too, with individuals borrowing library books, making photocopies of newspaper articles or putting posters of rock stars on their dormitory room doors. But now that the Internet has created a new global communications infrastructure and marketplace, the criteria for determining the scope of the public domain are changing. Legitimate personal and non-commercial uses of copyrighted works that were once seen as isolated and trivial (or at least beyond the reach of the market and therefore moot) are being sharply curtailed. In asserting greater control over how their products may be used, copyright industries seek to criminalize the personal copying of CDs, the viewing of DVDs on unapproved electronic appliances and excerpting of digital material that in the print media would be considered fair use.

This is a new development: the dramatically changing character of the public domain in American society. As the public domain comes under increasing siege by industries that seek

to “marketize” previously free and open information, it is making the public domain smaller, less open and enfeebled. This is worrisome because, in ways that are rarely appreciated, the public domain is critical to the progress of creativity, innovation, science, culture, higher education, the Internet, democratic governance and business. If these endeavors are to remain healthy and vigorous in the future, the public domain will require far greater attention—and protection—than legislators, the courts and policymakers have accorded it to date.

Times change. So must our mental maps. Our traditional notions of the public domain do not really describe the open, public, collaborative and non-market character of many of the new communications spaces. Nor do the received legal theories about the public domain take into account the very new sort of public sphere being generated by contemporary technologies, markets and laws. The following section seeks to explain why the public domain is so vital to our democratic society, how its breadth and integrity are being challenged as never before and what steps we must take to protect it.



II. Threats to the Public Domain

Given the eclectic nature of the public domain, it should not be surprising that the threats to its vitality are similarly diverse. That is one reason why this trend has gone largely unmentioned in policy and press circles, and why it can be difficult to grasp. It involves many different *sorts* of threats: major and minor, actual and speculative, statutory and judicial, national and international. Some portions of the public domain are relatively unimportant (e.g., architectural drawings) while others (e.g., government information and scientific knowledge) are critically important. To make matters more confusing, the many moves to constrict the public domain are not part of a coordinated campaign, but rather a loose movement driven by a *mélange* of market pressures, technology and political opportunity.

This section seeks to bring together many threads and weave them into a new tapestry. The threads are often familiar: the scientist who cannot gain access to research because of overly broad patents, the consumer who cannot play a copy-protected CD in his car sound system, the Internet user who is prevented from hyperlinking to a given organization or business, the journalist who encounters barriers in obtaining government information and the artist whose ability to create new works of art is stymied by trademark or copyright laws.

Such acts are usually seen in isolation and not as parts of a larger mosaic that might be called “threats to the public domain.” What follows is a review of the most significant threats to the public domain today.

The Unchecked Expansion of Copyright Terms

The U.S. Constitution is fairly explicit about copyright: it is a *limited* right granted to authors and inventors. While it is a monopoly right, it originally lasted for 14 years, renewable for another 14 years. But the length of copyright protection has steadily grown. Over the past 40 years, it has been extended 11 times, so that for individuals it now extends for a lifetime plus 70 years. The term of copyright protection is important because once it expires, the work belongs to the public. Anyone can then use it for free, for whatever purpose they choose. For such expired works, the public domain is the reward that the public reaps for granting exclusive copyright protection to authors in the first place.

This bargain was last rewritten in 1998 when, at the behest of major media companies, Congress enacted the Sonny Bono Copyright Term Extension Act. The law extended by 20 years the legal protection for works copyrighted after 1923. This means that thousands of works will not enter the public domain until 2019. Such cultural classics as the musical *Show Boat* and *The Jazz Singer* along with poems by Robert Frost and novels by Sherwood Anderson, will continue to be the property of media corporations and authors' estates, not the public's.⁹

If copyright is intended to induce creators to create new works, the law is clearly absurd: a retroactive extension of copyright protection will not induce dead authors to produce new films, songs or literature. The law is, in truth, little more than a novel form of market protectionism and corporate welfare. At a time when many such works can be shared for free via the Internet, the Copyright Term Extension Act forces consumers to pay untold millions more

for these works and prevents them from using them in new creative endeavors.

One such creator was Eric Eldred, who launched a website of public domain literature, including many out-of-print books. It was getting 20,000 "hits" (Web visits) a day and the National Endowment for the Humanities once recognized it as one of the 20 best humanities sites on the Web. But the Copyright Term Extension Act forced Eldred to purge many works from his website, effectively depriving the public of free access to material that rightfully belonged to it.

To determine whether or not the Copyright Term Extension Act is constitutionally acceptable, the Supreme Court recently agreed to hear the case of *Eldred v. Ashcroft*. Plaintiffs argue that the law "has rendered meaningless...the plain and express intent [of the Constitution] to restrict the duration of monopolies over speech." A decision is expected in 2003. Its outcome could have broad repercussions for how far Congress can go in constricting the public domain.

Seeking "Perfect Control" of Information: The Digital Millennium Copyright Act

While the digitization of content may sometimes unleash it, it can just as easily be used to lock content up more tightly than ever before. Just because information may now flow freely over electronic networks does not mean this will always be the case; in fact, many trends point toward a greater privatization and proprietization of information. This was the highly original argument that Professor Lawrence Lessig made in *Code*, his 1999 book about how the architectural design of the Internet, hardware and software can be as influential as law. The kinds of sharing of books, CDs and videos that we take for granted in the everyday,

physical realm, need not necessarily prevail on the Internet, where access to digitized information and its uses may be strictly controlled.

Control of digital information is, in fact, the primary goal of the Digital Millennium Copyright Act of 1998 (DMCA), a law whose everyday ramifications are only now beginning to be understood by the general public. The DMCA gives copyright holders and their agents—corporations—an unprecedented legal tool for controlling access to works and even how consumers may use works after purchase. Going well beyond historic copyright principles, the DMCA makes it illegal for anyone to defeat a technological measure that restricts access to digital works. Not only is it illegal to decipher the encryption for a software system, for example, but it is also illegal to share information about how to defeat encryption methods.

The basic effect of the DMCA is to criminalize well-accepted information uses by libraries and ordinary individuals, and to restrict information flows that were previously open and free. For example, consumers have long been able to make personal copies of music and to share them with others. Citizens can no longer presume that they may quote or comment upon a digital work that is subject to technological protection. Website owners may not post material that discusses how to circumvent encryption systems.

By creating new genres of “protected knowledge,” the DMCA is a potent legal tool enabling companies to assert their own criteria for “prior restraint” of free speech. The DMCA also allows companies to assert their own usage standards of copyrighted works, essentially trumping the public’s fair use rights in digital works.

Already the DMCA has been invoked to criminally prosecute a Russian programmer

who disclosed encryption flaws in electronic book software made by Adobe. (Charges were later dropped against the programmer, but his employer, Elcomsoft, is facing a civil lawsuit.) The film industry is currently using the DMCA to sue the online publisher of *2600 Magazine*, a website that distributed a program that could de-encrypt DVDs so they could be played on computers using the Linux operating system. The case is proceeding even though no copyright violation or sale of pirated material was alleged.¹⁰ In another case, Sony went after a hobbyist who had reprogrammed the moves for a software-controlled robotic pet, Aibo, in unauthorized ways.¹¹

Such acts may seem merely amusing and even trivial, but they represent a potent and unprecedented assertion of proprietary control at the expense of consumers and citizens.

That is why the DMCA is fundamentally hostile to the interests of free speech and the advancement of knowledge. For example, in 2001, when the recording industry used the DMCA to threaten legal action against Princeton Professor Edward Felten, who had planned to present a conference paper about the flaws in the music industry’s Secure Digital Music Initiative encryption software.¹² In essence, the recording industry was trying to “legislate ignorance,” in the words of Professor Felten, by suppressing commentary or criticism of DMCA-protected works.

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Eliminating the Public's Fair Use Rights

By allowing content owners to “lock up” digital text and assert “perfect control” over its uses, the DMCA effectively empowers companies to eliminate the public’s fair use rights in digital works. It also overrides the first-sale doctrine, the legal rule that otherwise allows people to share their purchased copies of books or videotapes with whomever they want. By strictly controlling the flow of works

<p>By allowing content owners to “lock up” digital text and assert “perfect control” over its uses, the DMCA effectively empowers companies to eliminate the public’s fair use rights in digital works.</p>	<p>in society to serve private commercial ends, the DMCA is a direct affront to the First Amendment. Copyright owners, not citizens, determine how a work may be accessed, shared and quoted.</p> <p>This control has anti-competitive dimensions as well. By enabling strict control over all “downstream” uses of a digital work, the DMCA gives large copyright industries the power to stymie alternative distribution systems for</p>
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works (think libraries, video rental stores and different electronic devices). This is what the film studios are now attempting to do in preventing copy-protected DVDs from being viewed on Linux computer systems. In this fashion, the DMCA undermines the very constitutional purpose of copyright law: to advance and diffuse knowledge.

Many protests have been raised against the constitutionality of the DMCA and the fate of fair use rights in digital material. At least one of several pending court cases may find its way to

the U.S. Supreme Court. In the meantime, an even more draconian legislative proposal has been floated in the U.S. Senate: the Consumer Broadband and Digital Television Promotion Act (CBDTPA). Introduced by Senator Ernest (Fritz) Hollings (with a companion House bill due to be submitted by Rep. Adam Schiff), the CBDTPA, or S. 2084, would require virtually all electronic devices and computer operating systems to include government-mandated copy-prevention restrictions. The legislation, backed by several large entertainment corporations, attempts to make digitized versions of film, music and television absolutely secure against unauthorized uses by forcing all electronic systems—computers, servers, MP3 players, VCRs, car stereos, CD recorders and anything else that can transmit digital signals—to adopt a unitary system of copy-protection.

Such a move is like turning a sharp knife into a hammer: the essential function of the tool is subverted or changed. Many electronic technologies are useful precisely because they facilitate copying, information sharing and the freedom of users to create. The Hollings bill would neuter and contort some fundamental capabilities of electronic technologies in order to make the world safe for the vending of digitized entertainment. *Business Week* offered a tart appraisal of the bill: “When it comes to delivering content in the 21st century, the entertainment industry is hell-bent on stifling technology, rather than using it in ways that eventually could become highly profitable. Hollings’ proposal hands control over the innovative forces that drive tech development to some of the most change resistant companies in the world.”¹³

The idea of “perfect control” of copyrighted works has never been a part of copyright law, which is predicated on striking a careful balance

between the rights of creators and the needs of the public. While piracy of copyrighted works is a serious problem, copyright industries abuse the term by applying it promiscuously to all sorts of behaviors that, in truth, are legitimate fair uses or public domain materials.

Visions of “perfect control” of content need to be confronted as dangerous fantasies. A democratic society requires the free and open exchange of information, not a copyright police state where ordinary uses of information and creative works are subject to intrusive digital surveillance and control. The unmet challenge is to find a practical, new calibration in copyright law that can empower creators, protect the market interests of copyright industries and encourage a vibrant public domain.

Using Contract Law to Limit the Public Domain

The DMCA is not the only strategy being used to override some fundamental tenets of copyright law. Another is the use of private contract law to trump the public law of copyright. Vendors of software, ebooks, data and other content want to be able to use mass-market licenses for the sale of digital information; these licenses are more commonly known as “shrink wrap” licenses for software and “click-through” licenses on websites.

What makes such licenses controversial is their one-sided, seller-preferential terms that would greatly limit the ability of consumers to use information products as they see fit. The licenses are often not readable before the consumer makes a purchase, nor are they subject to negotiation, as traditional contracts are. The licenses are essentially designed to allow companies to dictate their own terms of usage for digital products. Such terms frequently

trample on the cultural bargain at the heart of copyright law.¹⁴

Copyright law grants exclusive rights to works in return for certain public benefits: limited terms of copyright protection and stipulated “fair uses” for educational and personal uses, among other public rights. Mass-market licenses generally seek to reduce or eliminate the public’s customary rights and arrogate maximum control to copyright owners.¹⁵

One instrument for gaining legal acceptance for mass-market licenses is a model state law of contracts for information products known as the Uniform Computer Information Transactions Act (UCITA). Drafted primarily by Microsoft, other big software makers, database firms and ecommerce businesses, UCITA sets forth a set of default contracting rules for transactions in computerized information. Two states, Maryland and Virginia, have already adopted UCITA-like statutes, but other states have grown wary as the sweeping implications of the bills have become better known. Although the initial momentum behind UCITA may have slowed, the companies backing it have not relinquished hopes of enacting its provisions in as many states as possible.

At one time, non-negotiated “take it or leave it” contracts were considered “contracts of adhesion,” which were unenforceable as a matter of law because there was no “meeting of the minds” between the contracting parties. UCITA alters the traditional definition of a contract by regarding a consumer’s mere use of information as constituting assent to the terms of the license.

UCITA guts a number of legal principles that have been at the heart of consumer protection for a generation. For example, it rescinds the legal presumption that consumers should be informed of pertinent information

before a sale. It allows sellers to sell software they know to be defective. It restricts how consumers shall be allowed to use products, requiring them, for example, to obtain prior consent from sellers before publishing a review of the product. In a fundamental shift of legal rights, UCITA would allow sellers to dictate the legal venue for any litigation about their products and services. Not many lawsuits would ever move forward if consumers had to file their cases in Kings County, Washington

Essentially, UCITA is a way for content industries to use private contract law to override the public policies embodied in copyright law.

(Microsoft's home turf), in order to exercise their basic legal rights. This is precisely the goal, of course.¹⁶

The implications of UCITA for the public domain are significant. Consumers who criticize an information service to which they are subscribing could legally be muzzled or

have their service terminated. Sellers could prohibit consumers from transferring ownership of their software to others and limit how long consumers could use the product.

UCITA might also allow sellers to prohibit certain forms of "reverse engineering" of software (i.e., taking a program apart to see how it works). It would be as if GM welded its hoods shut and made it a contract violation for its customers and their mechanics to tinker with GM engines.

Essentially, UCITA is a way for content industries to use private contract law to override the public policies embodied in copyright law. The idea of the copyright as a cultural bargain is replaced with one-sided contracts, and the public's benefits of fair use rights and

limited terms of copyrights can be nullified. "Imagine, if you can, that in the 1960s the Big Three auto manufacturers had convinced Congress to pass a law allowing them to use mass-market 'licenses' to insulate themselves from criticism of their products," writes Professor Julie E. Cohen. "In the short run, they might have avoided some unflattering comparisons to superior imports; in the longer run, however, the restrictions would have shielded flawed product designs from the competitive pressures of a healthy market. Together, the DMCA and UCITA will do exactly that."¹⁷ Markets—not to mention our democracy—will not function well, or fairly, if accurate information and basic citizen rights can be suppressed.

Database Legislation: Claiming "Ownership" of Public Facts

As computer technologies have made it possible to assemble huge numbers of facts into searchable databases, it has created new quandaries for how to protect the commercial value of the aggregated information. Vendors who assemble databases of book prices, CD titles, scientific research or statistics generally want to have tight proprietary control over their compilations. It would be patently unfair for a free-loader to simply download one vendor's database for free and then re-sell it with impunity.

On the other hand, there is a serious danger if facts can suddenly be owned and removed from the public domain. Much of education, scientific research, journalism and civic life could not function if *facts* could be owned and their free flow restricted.

Copyright law does not protect raw factual information; that is considered part of the public domain. But it does protect compilations of data that have been selected, coordi-

nated or arranged in an original way. Databases are also protected by federal laws such as the Computer Fraud and Abuse Act and state laws such as contract and misappropriation.

However, since 1996, large information vendors such as the National Association of Realtors and eBay have been pressuring Congress to enact database legislation that would prohibit the extraction or reuse of database information.¹⁸ Their legislative vehicle in the 106th Congress, the Collections of Information Antipiracy Act (CIAA), H.R. 354, would have significantly overprotected database compilations in a way that exceeded traditional copyright principles. According to a petition signed by more than 130 universities, academic societies, search engines and telecom companies, the bill would have granted the compiler of any information “an unprecedented right to control transformative, value-added, downstream uses of the resulting collection or of any useful fraction of that collection.”

A key danger of the CIAA, explained the American Library Association, was that the proposed law would have interfered with “transformative uses” of information. The ALA compared this function to making a cake: “Flour by itself is flour, but add eggs, sugar and water and you have a cake batter—a unique presentation of flour. [The CIAA] would hinder users who want to take the ‘flour’ (data from one database) and the other ‘ingredients’ (data from other sources) and make a ‘cake’ (a new database).”¹⁹ Locking up key “ingredients”—facts and data—would obviously hinder the basic processes of science, education, journalism and culture.

During the 106th Congress, another database bill was introduced that would have avoided these harmful results. H.R. 1858, the

Consumer and Investor Access to Information Act, targeted the parasitical copying of databases without prohibiting the reuse of information to create new kinds of databases. The 106th Congress closed with neither bill passing the House or being introduced in the Senate. In the 107th Congress, starting in 2001, the House Judiciary and Energy and Commerce Committees held negotiations in an attempt to achieve a consensus bill. These efforts continue.

During the pendency of the database debate in Congress, courts have adopted novel theories such as trespass to chattels to extend proprietary rights to public facts. A leading case is *eBay v. Bidder’s Edge*, which was filed by the online auction house, eBay, in December 1999. eBay complained that Bidder’s Edge, a service that helps shoppers identify the lowest prices for goods and services, was using webcrawling software “bots” to compile comparative price data from dozens of Internet auction sites, including eBay. Even though eBay’s price data are accessible to anyone via the Web, eBay claimed that the “spidering” represented a “trespass” on its personal property (its servers). A federal judge agreed with eBay’s complaint in May 2000, and ordered Bidder’s Edge to stop gathering data from eBay’s site.

The over-propertization of facts contained in databases is a troubling development for the public domain that needs to be combated. Broad database protection would not only give data vendors monopoly control over their markets, with all the pricing abuses and anti-innovation effects that that entails, it would significantly interfere with the free flow of facts in the public domain and the creative transformations that result.

Trademarks versus the Public Domain

One of the virtues of the public domain is the freedom to speak freely about things of common concern. In our increasingly commercial culture, this often involves products, logos and characters that are associated with large corporations and that are registered trademarks. TV characters, national retailers, fast food companies and Fortune 500 companies are familiar parts of our everyday culture.

But how freely can we talk about them? Trademark law has always given companies certain control over non-copyrighted works, limiting people's freedom to use trademarked images and words. But the degree of protection given to trademarked products, symbols and characters was raised significantly in 1998 when the nation's largest corporations prevailed upon Congress to enact the Trademark Anti-Dilution Act. This Act gave the owners of "famous" trademarks new powers to silence any uses of trade names that might conceivably "blur" or "dilute" them, even if there is no likelihood of confusion or fraud. Thus the companies with the most power and influence in our society have the greatest ability to stifle robust public discussion about them and their products.

The Act has been used to attack websites that focus on Star Trek characters, websites that criticize or mock companies (e.g., walmartsucks.com) and products or services that are seen as competitive. Under the Act, Ralph Lauren prevailed against a horse polo magazine called "Polo" (never mind that the equestrian sport preceded the Lauren clothing line). A high-gloss fashion magazine in Germany named "O" claimed that Oprah Winfrey's magazine, by the same name (or letter), was infringing on its trademark, competing unfairly and harming its reputation.

Such examples may seem minor and amusing, but seen in the larger perspective, they diminish our ability to create and express ourselves freely. The Trademark Anti-Dilution Act impoverishes the public domain by imposing yet another legal screen on what citizens may say in public. The censorship may not be state-motivated or market-driven, but it has the same result of stifling basic free speech rights.

Government Information Policies and the Public Domain

Although it is a well-accepted principle that government information belongs in the public domain, the actual implementation of this principle is decidedly irregular. The Web has led to the creation of more than 20,000 U.S. Government websites, giving the American people far more access to the workings of their government than ever before. Yet there remain many important reservoirs of government information that are needlessly difficult to access, exorbitantly expensive or simply off-limits without justification, as a matter of policy.

Perhaps because of its size and eclecticism, this sector of the public domain has not received sufficient attention, least of all from Congress or the Executive Branch itself. But as the largest and perhaps the most important publisher in the world, responsible for thousands of authoritative reports, databases, regulatory filings and hearing records each year, the U.S. Government should be a model for making information readily and cheaply available to the taxpayers who finance it. Perhaps the core issue is one of democratic accountability: Will the people have access to the information that they need to judge their political leaders? At stake is also the quality of information avail-

able to journalists, scholars, scientists, citizens and other arms of the government itself.

A number of recurrent problems affect the availability of government information:

■ ***Technical barriers to information access***

Sometimes government information is not available because agencies do not have the technical expertise, management skills or leadership to make it available online. For example, even though there are few technical issues in making congressional hearings, reports and legislation available to the public, the U.S. Congress has dithered and delayed. Nor have Congress or the Executive Branch sought to improve the federal systems for dispensing government information; agencies vary greatly in the amount and quality of information they post to their websites.

■ ***The privatization of government information*** All too often, Congress or federal agencies assign control of valuable hearing records, databases and research to proprietary services rather than make them available to the public for free or inexpensively. For example, in 2001 Congress authorized a private company, HearingRoom.com, to sell near real time transcripts of hearings in all 192 congressional committees. The cost: \$1,000 per hearing, with yearly subscriptions to transcripts ranging from \$5,000 to \$15,000. Congress has in effect created a special set of corporate sky-boxes for its deliberations while leaving ordinary citizens to fend for themselves.²⁰

A similar giveaway involved a databank of Landsat satellite images used by scientists to “map and monitor” terrestrial ecosystems and to develop models to assess land quality, soil productivity and erosion hazards. Once this information was given to a private vendor, prices soared from \$400 to \$4,400 per

image, bringing academic research in these areas to a complete halt.²¹ The lack of a public domain citation system for the federal courts is one reason that the West Publishing Company retains a near monopoly on the publishing of federal court rulings.²²

Outsourcing the sales of government information is not inappropriate in principle, particularly if the vendor is making it easier to use. But this should not override the basic presumption that government information belongs to the American people and not to the well-heeled corporations, law firms and lobbyists who can afford expensive access fees.

■ ***Political resistance to making information available*** The real issue, in many cases, is that political officials do not want to subject themselves to greater scrutiny by making information more readily available. After the Environmental Working Group laboriously compiled government data about federal agricultural subsidies and posted the information on the Internet, it provoked new calls for reform—and furtive attempts by irritated members of Congress to shut off public access to this information. Nearly ten years ago then-Speaker of the House Newt Gingrich called for putting Congressional documents online, yet the U.S. Congress still has not created an easily searchable Internet database of Congressional voting records indexed by bill name, subject and members’ names.

Invigorating the public domain of government information is fraught with special kinds of political, technical and managerial complications. Yet transparency is unassailably democratic and thus, stronger steps should be taken to make government information more widely and cheaply available.

Overly Broad Patents as a Drag on Innovation

It is widely assumed that most advances in scientific research and technological innovation are the fruits of entrepreneurs, Fortune 500 firms and global market pressures. While those are indeed important forces, it is less

It is now possible for companies to obtain patents for mathematical algorithms embedded in software and for common business methods used on the Internet. Companies can "own" genetic structures used in bioengineered food and in naturally occurring plants, animals and humans.

well known that advances in human knowledge and technology also depend critically upon the public domain. "The value of a piece of scientific work only appears to the full with its further application by many minds and with its free communication to other minds," writes computer scientist Norbert Weiner.

The scientific commons may be one of the most fertile sources of innovation that exists, as Seth Shulman shows in his recent New America Foundation report, "Trouble on 'The Endless Frontier'."²³ If basic research about molecular biology and computer science had not been accessible in the 1960s

and 1970s (because it was federally funded and federal rules at the time prohibited its privatization), it is quite possible that the later advances in those fields would never have materialized.

It has become increasingly common over the past two decades, however, for academics and their universities to claim proprietary

ownership in research that was previously open and available to all. Enactment of the Bayh-Dole Act in 1980 and related laws have thrown open the doors for federally funded institutions and scientists to obtain patents on their work even though it may incrementally impede others from making new research advances of their own.

During this same period, the U.S. Patent Office has greatly expanded the scope of patent protection, sharply diminishing the reservoir of shared and public scientific knowledge. It is now possible for companies to obtain patents for mathematical algorithms embedded in software and for common business methods used on the Internet. Companies can "own" genetic structures used in bioengineered food and in naturally occurring plants, animals and humans.

Priceline.com has a patent on its so-called "name your own price" online auction process. Amazon.com has a patent on its "one-click shopping" method that allows consumers to make purchases with one click of the computer mouse. British Telecom claims a patent on hyperlinking on the Web. By acquiring patents on broad, basic functionalities of the Internet and electronic commerce, companies are often able to stifle innovation and extract monopoly rents on "inventions" that arguably belong in the commons.

Similar sorts of expansive patent claims are being made for biomedical and genetic research. In the 1950s, when Dr. Jonas Salk and his colleagues came up with their polio vaccine, no one thought about patenting it. But today, researchers have claimed patents on cells taken from the spleen of a medical patient which were used to develop medical products.²⁴ Patents have been granted for the blood inside every human umbilical cord, on stem cells

from bone marrow and even on entire species of mice and pigs. Large segments of the human genome are now claimed as proprietary knowledge, even though the normal criteria in granting a patent—that the invention be demonstrably “useful,” for example—is often contestable. Not only is genetic information being patented, but the software tools for investigating genes (a field called “bioinformatics”) is also “going private,” which means that further progress in the field can be controlled by the owner of the software tools.²⁵

Serious ethical objections are raised against many of these patents. Should a company be able to use its patent rights to foreclose research into lifesaving treatments simply because it might harm its market share? Beyond such ethical issues, the broader scope of patents today may well be stifling future innovation and market competition. Two of the leading commentators on this issue, Rebecca Eisenberg and Michael Heller, note that “biomedical privatization” is having an unintended and paradoxical consequence: “...a proliferation of intellectual property rights upstream may be stifling life-saving innovations further downstream in the course of research and product development.”²⁶ Eisenberg and Heller decry how the over-propertization of knowledge (via patents) can result in an “anticommons,” in which people “under-

use scarce resources because too many owners can block each other.”

The erosion of the public domain of scientific knowledge, say many observers, is giving the “first movers”—patent holders—an overly broad monopoly on a given realm of inquiry and foreclosing future advances in knowledge. Newcomers who might otherwise bring new ideas and innovation to a given field of inquiry are deterred from even entering it.

The seriousness of the problem is starting to be recognized. Responding to mounting criticism, the U.S. Patent Office has started to review some of its approval procedures in an attempt to tighten standards for granting patents. Prominent critics have launched websites offering “bounties” to people who can provide “prior art” that discredits an existing patent or patent application.²⁷ A debate has at least begun about the alarmingly broad scope of patents in novel fields.

Still, the trend of propertizing ever growing realms of public knowledge—significant portions of which are financed by taxpayer dollars—remains largely unchecked. A major challenge is finding new ways to protect the public domain of scientific research and online business methods. The long-term vitality of future innovations will depend on finding ways to prevent the tragedy of the “anticommons.”



III. The Resurgence of the Public Domain

Part II chronicled a large and distressing array of threats to the public domain: control technologies, copyright laws, contract restrictions, market practices and political resistance. These are a formidable set of forces and their impact, though often overlooked, is significant. New creativity and innovation are quietly squelched. Basic norms of free speech and artistic expression are being shut down. As more material “goes digital,” traditional fair use rights are being abrogated more frequently and, in some cases, eliminated. The rich and open exchange of information that is the basis for scientific progress, economic innovation and cultural freedom in a democratic society is being incrementally nipped, tucked and smothered.

A major challenge, for the short term, is realizing that these seemingly disparate controversies are thematically related. Typically, they are treated episodically and in isolation. We need to recognize that the many assaults on the public domain documented in Part II fall under the same headline: “The public domain under siege.”

The past generation has seen an unprecedented expansion of the scope and term of copyright protection. Copyright, patent and trademark law has thrown a broader mantle of proprietary controls over many more types and uses of information than ever before. But what may seem desirable or even necessary from the perspective of one company or one industry, is simply undesirable and unsustainable from a holistic perspective.

What may make sense to Hollywood studios from their own parochial perspective—to neuter the ability of computers to copy digital files—is entirely unreasonable and even harmful from any larger field of vision. It is that broader sense of the commonweal, beyond the special pleadings of entrenched industrial sectors,

which must be rediscovered. Just as companies today cannot pollute the air and water as if it were a free and unlimited resource, so the public domain should not continue to be “used up” without serious consequences. We must begin to understand the disturbing “big picture” implications of constantly, reflexively maximizing intellectual property rights at the

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expense of all else. In short, we must begin to cultivate a new political tradition: the defense of the public domain.²⁸

Fortunately, the situation is not without hope. As noted earlier, the public domain in this age of electronic networks is highly dynamic, not static. There are important forces working to fortify and expand the public domain. It is important that we recognize these developments as well as how they are thematically related. Open source software, collabor-

ative websites, online listservs and archives, and peer-to-peer file-sharing software are among the more prominent examples.

These new modes of collective and individual creativity—all Internet-based—tend to be based on the social matrix of the commons, not the legal and economic matrix of markets. Instead of relying upon individual exchanges of money via markets, the commons relies upon the free and open exchange of ideas and expertise based on loose membership in a virtual community. It turns out that these “gift

economies” are remarkably potent, creative and enduring. Unlike previous moments in history when the public domain was a matter of happenstance or incremental legal rulings, the public domain now has some powerful technological engines to help it expand.

A number of legal and policy innovations are also emerging to help protect and defend the new Internet commons from market enclosure. For example, the General Public License (GPL), sometimes known as “copyleft,” has allowed free software to circulate and flourish without the threat of privatization.²⁹ A new set of GPL-inspired licenses are being devised by the Creative Commons, a nonprofit effort led by law professors, to help place more creative works and information in the public domain. Dissatisfied with expensive academic journals that are slow in publishing articles and strict in controlling their circulation, scientists are starting to explore new forms of online self-publishing; the Public Library of Science and the Budapest Open Access Initiative are two leading efforts to forge a new type of public domain for academic research.

These are among the phenomena that could be described by the headline: “The rise of the information commons,” a topic explored in greater depth by the New America Foundation report, “Saving the Information Commons.”³⁰ This is still a provisional paradigm, to be sure and the language of the commons is still embryonic. Yet as the threats to the public domain grow, the many people who have been unwittingly enjoying the rich benefits of the Internet commons are starting to realize that protecting this special infrastructure and cultural space will require a new vocabulary and analysis.

This larger project must focus on the “ecosystem” of creativity and information

flows in a society based on pervasive electronic networks. While copyright law will continue to play an important role in the production and dissemination of knowledge, it is important that the public domain be recognized and protected for the vital role it plays. Balance must be restored.

If we are to prevent innovation-resistant industries from sabotaging the great potential

of the Internet and digital technologies, it is imperative that a new effort to protect the public domain be launched. Educators, libraries, scientists, Internet users, consumers, citizens, journalists and artists, not to mention the creators and entrepreneurs of the future, must work together to defend a valuable common resource. There is much at stake and little time to lose.

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Notes

Introduction

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Chapter One

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- ³ Pamela Samuelson, "Digital Information, Digital Networks and the Public Domain," paper presented at the Duke Law School Conference on the Public Domain, November 9-11, 2001, available at <http://www.law.duke.edu/pd>.
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- ⁵ Edward Samuels, "The Public Domain in Copyright Law," 41 *Journal of the Copyright Society* 137 (1993).

- ⁶ Jessica Litman, "The Public Domain," 39 *Emory Law Journal* 965 (Fall 1990), p. 1012.

- ⁷ An excellent account of how musicians necessarily borrow from each other can be found in Siva Vaidhyanathan, *Copyrights and Copywrongs: The Rise of Intellectual Property and How It Threatens Creativity* (New York, NY: NYU Press, 2000), especially Chapter 4.

- ⁸ Said Vaidhyanathan, *Copyrights and Copywrongs: The Rise of Intellectual Property and How It Threatens Creativity* (New York, NY: NYU Press, 2000), p. 124.

Chapter Two

- ⁹ For a list of works affected by the Copyright Term Extension Act, see <http://www.kingkong.demon.co.uk/ccer/ccer.htm>.
- ¹⁰ See Amy Harmon, "Free Speech Rights for Computer Code?" *The New York Times*, July 31, 2000.
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- ¹³ Alex Salkever, "Guard Copyrights, Don't Jail Innovation," *Business Week*, March 27, 2002.
- ¹⁴ For critiques of UCITA, see "Symposium: Uniform Computer Information Transaction Act" [special issue], 18 *The John Marshall Journal of Computer & Information Law* 2 (Winter 1999); Charles R. McManis, "The Privatization (or Shrinkwrapping) of American Copyright Law," 87 *California Law Review* 173 (1999); and the American Library Association website, <http://www.ala.org/washoff/ucita>.
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- ²² A history of West's monopoly over court citations can be found in an essay by Jol Silversmith, "Universal Citations: The Fullest Possible Dissemination of Judgments," at <http://www.thirdamendment.com/citation.html>.
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- ²⁷ Sabra Chartrand, "Patents," *The New York Times*, October 23, 2000.

Chapter Three

- ²⁸ A notable beachhead in this effort was the landmark Conference on the Public Domain held at Duke Law School on November 9-11, 2001. The event amassed a considerable body of scholarly papers that delineate and analyze the myriad threats to the public domain. Available at <http://www.law.duke.edu/pd>.
- ²⁹ The General Public License is a licensing provision added to copyright protection, which allows anyone to use, modify and redistribute the source code of a GPLed software program or any program derived from it, but only if the distribution terms remain unchanged.
- ³⁰ David Bollier and Tim Watts, "Saving the Information Commons: A Public Interest Agenda for the Digital Age," report for the New America Foundation and Public Knowledge, May 2002.