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Routing

Amateur-to-Amateur
The Rise of a New Creative Culture

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Executive Summary

It is commonly said that copyright matters because it encourages the production of socially beneficial, culturally significant expressive content. Excessive focus on copyright law and policy, however, can obscure other information practices that also produce beneficial and useful expression. The functions that make up the creative cycle—creation, selection, production, dissemination, promotion, sale, and use of expressive content—have historically been carried out and controlled by centralized commercial actors. However, all of those functions are undergoing revolutionary decentralization and disintermediation.

Different aspects of information technology, notably the digitization of information, widespread computer ownership, the rise of the Internet, and the development of social networking software, threaten both the viability and the desirability of centralized control over the steps in the creative cycle. Those functions are being performed increasingly by individuals and disorganized, distributed groups.

This raises questions about copyright as the main regulatory force in creative information practices. Copyright law assumes a central control structure that applies less well to the creative content cycle with each passing year. Copyright law should be adjusted to recognize and embrace a distributed, decentralized creative cycle and the expanded marketplace of ideas it promises.

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Introduction

Copyright law today is like Rome at the height of its empire. Rome was the center of the world, and the Roman Empire stretched from Syria to Britain, practically to the limits of the imagination. Over centuries, Rome had expanded its borders until it influenced a vast multitude of diverse societies. Roman control lasted for centuries, but eventually Rome fell when the barbaric Visigoths stormed Rome's gates in AD 410. Some people surely saw the sack of Rome as the end of culture and civilization, yet one could also frame it, not as a fall, but as a transformation. Rome's empire became a less politically unified set of social groups, states, and governments.

Like that of Rome, copyright's empire has expanded aggressively in the past few centuries, and it now dominates a vast terrain of information practices. From relatively humble origins in regulating book-printing monopolies, copyright's sphere has grown to encompass a wide range of activities involving the production, reproduction, distribution, and use of information.

Copyright is by and large imperial: copyright owners, specialists, and stakeholders shape the scope and enforcement of copyright laws. The citizenry, in their view, is the passive beneficiary of the copyright regime and is described as "readers," "listeners," "viewers," or "consumers" of "content"—the product that copyright specialists create. Though copyright law has grown largely inscrutable to the greater public, that has not been overly significant: The public is not regarded as part of the content-production processes.[1]

Like Rome's empire, copyright finds itself today under threat from its borders. People are increasingly aware that they are being "taxed" by copyright's restrictions, but they have only a vague notion of how allegiance to copyright benefits them. That discontent is largely attributable to the fact that copyright's formerly passive consumer is increasingly an active participant in the creative cycle. The average citizen feels copyright law intruding on her personal information practices. Part of the friction is also attributable to copyright's extraordinary scope. The two are closely related.

Whatever the root of the current friction, the populace today, more than at any time previously, is a player in the creative cycle. The public is creating, selecting, distributing, and recasting information and is increasingly being policed and monitored pursuant to copyright laws. Copyright's former consumers are now copyright's amateurs—the creators, producers, and disseminators of content. That has important consequences for our system of copyright.

People speak of copyright "consumers" engaged in the consumption of information "content," and those terms are correct insofar as they point to the fact that payments are regularly made for books, movies, and music. But they are also misleading: They tend to conflate the physical medium with the information contained on it. Copyright is a law regulating information practices, not a law about tangible products.

Cars consume gasoline and people consume food, but the information that is the subject of copyright can never be consumed.[2] After a book is read, the information remains. As all concede, intellectual property is, in economic terms, nonrivalrous. Talking about the consumption of information content creates a serious potential for confusion and demeans the role that the public plays in creating the universe of expressive content.

Instead of a model that posits separate manufacturers and consumers, consider the creation of content as a feature of human expressive activity. The amount of expressive content created by and available to individuals today is staggering, and, surprisingly, copyright law has little to do with it. The majority of Americans today have computers that give them regular access to the information phenomenon known as the World Wide Web. A recent Pew Internet study on the creation of online content by individuals found that 53 million Americans have uploaded works to the net, including writing, art, video, and audio creations.[3]

The term "amateur-to-amateur" describes the social phenomenon of popular information creation and free distribution. The producer-participants in this process are "amateurs" because they lack financial and proprietary motives.[4] The audience-participants are also amateurs because they generally do not pay for the information that other amateurs create or the services they provide. They often build upon, copy, select, and retransmit the original information in ignorance, and in technical violation, of copyright law.

A leading example of such amateur participation in copyright processes is the social phenomenon of Web logs, or "blogs": regularly updated and freely accessible Internet-based writings. The Pew survey indicated that somewhere between 2 and 7 percent of U.S. Internet users were creating blogs in 2004. Web logs are clearly protected by copyright and often link to other blogs or documents available on the Internet. Millions of people write and read blogs every day, and during the past few years they have become a regular source of popular news, information, and commentary.

Blogs are thus displacing, at least to some degree, the information and communication space previously occupied by traditional media such as television, radio, and newspapers. Yet people who write blogs are clearly not acting in accord with the theory of copyright. The same can be said for those who post photographs, short stories, product reviews, and software programs to personal and community sites on the Web. Their motivations may be based on the pursuit of reputation or self-expression, but they are clearly not acting out of a desire to commercially exploit an intellectual property right. The amateur-to-amateur trend in information practices calls into question the notion that the commercial incentive provided by copyright is the exclusive or preeminent way in which we encourage individuals to create useful content.

Copyrighted content is a subset of all communicable information. Historically, the use of certain recording technologies (e.g., books, films, and magnetic tapes) has divided information protected by copyright from the general realm of all information and communication. That line is increasingly blurred. The tangible fixation requirement in copyright law has joined with technological advances to increase the amount of copyrighted material. Distributed-network technologies are inherently problematic from the standpoint of copyright theory and enforcement. Peer-to-peer technologies like the Internet are a substantially different type of information technology than the technologies addressed by copyright in the past.

Emerging digital and network technologies are challenging copyright law's claim to prominence in creative information practices. Copyright has historically facilitated information distribution by way of centralized and integrated models of creation and distribution. Seven processes have traditionally been chained together in this model: creation, selection, production, dissemination, promotion, purchase, and use. Until recently, all seven functions were conjoined out of necessity and were under the control of centralized intermediaries. Only profitable works could be produced and distributed, and those works were controlled, primarily, by integrated business operations that took an intense interest in protecting their business models through copyright laws. The past model of centralization and focus on profit contrasts with the present moment, in which the information practices that copyright affects are increasingly nonprofessional, socially distributed, and disintermediated.

Two parallel spheres of information production exist today. One is a traditional, copyright-based and profit-driven model that is struggling with technological change. The second is a newly enabled, decentralized amateur production sphere, in which individual authors or small groups freely release their work to other amateurs for experience, redistribution, and transformation. The amateur sphere of content production is today providing the public benefits that were previously provided exclusively by the mechanisms of copyright law. The emergence of amateur-to-amateur content development as a viable alternative is something to herald and to protect.

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Copyright and Information Policy

Copyright law creates a property right in communicative expression. In order to understand the effects of technological change and the amateur-to-amateur trend on copyright, it is important to understand and review the current scope of copyright. One of the most important elements of U.S. federal copyright law is that copyright obtains when communications are fixed in a tangible medium of expression.

In the last two centuries, fixation technologies have proliferated, resulting in an ever-increasing quantity of communications governed by copyright. New information-capture technologies have moved more and more types of communication and expression under the umbrella of copyright protections. The most significant of those technologies (for the purposes of copyright) are distributed information networks. The Internet is a vast expanse of universally accessible stored and crafted information that has been created and freely distributed largely by copyright amateurs.

Fixation and copying are transparent today—the average Internet user neither knows nor especially cares whether a "visit" to a website creates a digital copy of that website on a personal computer. The Internet has essentially collapsed the technological expansion of copyright protection by making the fixation process trivial. Digital recorders, storage devices, and network connectivity for widespread dispersal are ubiquitous. Technologically fixed copies of expression and communication have been removed from their past "privileged" status and are merely part of the process of conversing.[5]

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Copyright's Theory of Information

"Information," broadly speaking, is data that can be subject to perception, recording, or transmission. Almost all of perceptible reality can be recorded somehow and transposed into communicable information. At the same time, much communicable information does not represent reality but rather extends or adds to it through expression: such things as songs, fanciful stories, reenactments, and so on. Copyright law regulates a subset of all that information—original works of authorship.

Copyright generally does not cover information that lacks human origin. For example, when William Wordsworth revisited the banks of the Wye river a few miles above Tintern Abbey and experienced the sounds of waters rolling from their mountain springs, the sight of steep and lofty cliffs, and the plots of cottage ground and orchard tufts clad in one green hue, none of that raw sensory information was within the purview of copyright law.[6] His description of it was.

Copyright also excludes from its protection noncommunicative information patterns of human origin. For instance, the arrangement of cars in traffic, the shapes of piles of asphalt, the lines painted on highways, and the arrangements of discarded boxes in a trashcan are all human-created perceptible patterns that can be captured and conveyed as visual information. But, generally, that information is not subject to copyright protection.

Artistry, while often assumed to be, is not a requirement for copyright.[7] Some amount of expressive "originality" is required for copyright protection to subsist, though. In the case of *Feist Publications v. Rural Telephone Service Company*,[8] the Supreme Court ruled that a set of alphabetical phonebook listings could not be protected by copyright law because they lacked any creative spark of originality.

Finally, there is the requirement that a work must be fixed in a tangible medium of expression. Among other things, the fixation requirement means, as a practical matter, that copyright attaches to singular and identifiable works segregated from the endless stream of human communicative activity by the four corners of a picture frame, for example, the silences at the beginning and end of a song, or the first and last pages of a novel. Technology has changed that. Today, when so much is continuously recorded, collabora-

tive, contingent, and malleable, the beginnings and ends of artistry can be hard to determine.

Copyright casts a broad net over information recording and communication practices. Copyright today extends to a vast field of information, including almost any recorded and aggregated pattern of marks, symbols, signals, or other representations. Indeed, most of us infringe copyright laws as a matter of course in our information-saturated society. Even our children infringe copyrights long before they download Eminem songs: They sing "Happy Birthday" (a copyrighted song, the public performance of which is protected) at public gatherings; they finger-paint pictures of Mickey Mouse (a copyrighted character); they read Winnie the Pooh books (copyrighted works, public performance of which is protected) aloud to their classes; and they dress up their Barbie dolls and take pictures (creating unlicensed derivative works). All those activities entail replicating or transforming certain information patterns in violation of copyright law.

Those infringing childhood activities will probably not trigger cease-and-desist letters. And, if litigated, any sensible judge would be hostile toward the plaintiffs. Yet, as a formal and theoretical matter, those are indeed infringements of the exclusive rights granted to copyright holders.

As law professor Jessica Litman noted in 1996, "More than ever before, our copyright policy is becoming our information policy."[9] Seeing clearly the breadth of copyright's putative control over information practices is an essential step in understanding the importance of amateur content. If one thinks of copyright exclusively in terms of the most popular music, the biggest paperback best-sellers, and summer blockbuster movies, one may be inclined to dismiss or deny the importance of efforts of individuals who are not copyright "professionals." However, if one understands that copyright protections apply to e-mail, blogs, and digital photographs, it is easy to see that copyright amateurs far outnumber copyright professionals today.

Copyright Creation and Technologies of Fixation

Copyright began with the regulation of book printing. The invention of the printing press created the tremendous social revolutions in the 16th century and paved the way for the Enlightenment. The reaction of the state to that change in information technology, however, was neither delight nor the immediate birth of copyright law—instead, the state reacted with censorship.

In England, fear of the political effects of the unregulated press gave rise, in part, to the monopolistic powers of the Stationers' Company over the printing industry. The Stationers' Company was, essentially, a state-endorsed publishing cartel.[10] Of course, even in the early modern period, it was difficult to maintain the status quo in light of technological change, and the Crown's initial attempts to control book-printing practices gave way to intense criticism of the Stationers' Company's monopoly control of information distribution.

The result was a new statute that granted a *relaxation* of information regulation. The Statute of Anne, enacted in 1710, is often described as the statute that gave birth to modern copyright control, but, in historical context, copyright was an endorsement of a democratic technology and a repeal of state censorship and monopoly.[11]

Technology has always been inextricably intertwined with copyright. As noted above, for a work to be protected under copyright law, it must be "fixed in any tangible medium of expression."[12] Fixation introduces technology into the equation of copyright at the very moment of creation by requiring a physical substrate and some method for fixing information patterns upon that substrate. For example, federal copyright law does not grant the "authors" of impromptu bedtime stories any property rights in their original creations because they generally perform their artistry through the spoken (but unrecorded) word. It does, on the other hand, protect quotidian communications that are fixed, such as digital

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photographs, doodles, and business memoranda. One might thus argue that copyright is primarily about protecting pedestrian acts of *recording*, and only collaterally about protecting creativity.

Of course, the human body records information as well. Human beings have, in their nervous systems, a very impressive set of sensory input mechanisms—a highly diverse and synchronous set of high-bandwidth visual, auditory, tactile, gustatory, and kinesthetic sensors.[13] And, as Wordsworth noted, in lonely rooms, amid the din of towns and cities, when he recalled the Wye, the human mind's playback technology is equally impressive and complex.

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Human memory may be somewhat "lossy"—it obviously lacks the verity and persistence of contemporary digital formats. But, unlike a book or a compact disc, one usually has access to one's internal recording media, and there is no need to go through boxes in the attic to retrieve an old memory. The average individual can "retrieve" a musical tune from years gone by, "replay" a facsimile silently in the mind, and experience some approximation of the experience of an audible broadcast. However, because the technologies of the human memory are so poorly understood and so inherently private, they are essentially ignored by copyright.[14]

Increasingly, however, our private mental recordings and interpersonal conversations are difficult to disentangle from the expanding reach of copyright law. In the past, most conversations took place in the medium of resonating air, and many social copyright-infringing activities (especially those of children) were limited to private spaces immune from prying eyes. In the past 20 years, however, conversations have become increasingly *fixed* and *public*. Our random thoughts and comments are no longer safely removed from surveillance by the seclusion of physical spaces and evanescence. Instead, what we say is fixed in public virtual spaces such as Web logs, listservs, and other online environments, where random thoughts and quickly typed reactions are transformed into new works protected by copyright and subject to monitoring.[15] Our personal histories and dossiers of conversation are increasingly archived online and searchable. A few keystrokes might be all that it takes for a knowledgeable person to unearth a typo-laden listserv debate that you participated in a decade ago.

Although copyright has not historically regulated our conversations and private lives, it is beginning to occupy this new terrain. In an era of ubiquitous e-mail access and camera-phones, copyright law will increasingly be used to regulate all forms of human communication. An ever-increasing number of works will be fixed and therefore protected by copyright, and an increasing number of fixations may infringe existing copyrights. Every recorded and transmitted image, sound, and set of keystrokes is a candidate for copyright litigation in the hands of a creative lawyer. As Paris Hilton has recently demonstrated, the proliferation of cheap and widespread recording technologies has led to the merger of private expression with public performance and display. Her case gave new meaning to "authorship" of a creative work.[16]

Copyright and Technologies of Infringement

The current conflict between technology and copyright is, in some ways, not very new. Because technology and copyright have always been inseparable, the struggle over new information recording and distribution technologies has always been the primary struggle animating copyright law. Copyright holders have vilified the capabilities of *all* new technologies, such as the radio, photocopying, and the VCR, as those technologies have emerged.[17] Twenty years ago, the cassette tape, not Napster, was the bugaboo of the Recording Industry Association of America.

The policy responses to new information-recording technologies have been varied. In some cases, such as broadcast radio, the technologies essentially escaped any severe regulation by copyright. In rare cases, copyright-related technologies have been treated more or less like machine guns, radar detectors,

and drug paraphernalia.[18] The typical modern outcome of heated technology battles, however, has been technology-specific regulations. To take just one example, legislative battles ultimately led to specific statutory provisions that regulate the use of photocopy machines in libraries.[19]

The Internet is, in some respects, just another new recording technology that the stakeholders of copyright law will attempt to tame. It is, in essence, simply a technological protocol enabling the transmission of packets of data between disparate computers that are part of a larger network—a new technology of copying.

But the crucial difference between the Internet and the photocopier is not merely the Internet's ubiquity or its digital nature. Instead, the crucial aspect of the Internet is that it is a unified, distributed *network*. The early engineers of the Internet created this distributed-network architecture because it was a much better and sturdier means of pooling and sharing information resources. When they crafted the Internet's structure, they ensured that the protocols for communication were very simple.

The Internet protocol does not recognize the legal distinction between facts and expressions, nor does it recognize concepts like "derivative works" or "joint authorship." Its speed and vitality come from its simplicity and its lack of central chokepoints where traffic might be monitored for copyright infringements (among many other things). In short, the Internet's logical architecture is a fabulous way to move any digital file from any computer to any other computer on a vast network—and to do so in a way that is difficult to monitor.

The copyright industries have laid out the copyright issue posed by the Internet in this way: How can the problem posed by the Internet as a copying machine be solved? How can we best retool the Internet so that Britney Spears mp3s are no longer traded on Kazaa? The industries' current answer, for the most part, seems to be a combination of press releases and educational campaigns about the costs of piracy, as well as sweeping litigation. But there are legislative efforts as well—such as attempts to create paracopyright laws like the anti-circumvention provisions of the Digital Millennium Copyright Act.[20] Such provisions bring copyright into conflict with digital technologies: copyright holders seek to prevent the dissemination of new digital technologies and to control the manner in which the public makes technological use of digital information.

However, posing the question in terms of "copyright" versus "technology" ignores the contributions of copyright amateurs. The Internet's prominence today owes very little to the source of the copyright industry's panic: the trade in Britney Spears mp3s. The utility of the World Wide Web is probably best reflected in Google and other search engines, which point users to an abundance of free (but nominally copyright-protected) works. From the standpoint of copyright, one might assume that Google or the creators of its content would be requiring payments. But Google does not charge per copy or per use, and neither do the websites, discussion lists, blogs, and other sources that Google indexes.[21] In other words, though billions of online works (webpages) fall within the ambit of copyright, they are being offered for copying gratis (in some cases, with advertising, in others, not) to hundreds of millions of people.

This bears repeating: the authors and owners of the information that has made the Internet valuable are, for the most part, doing nothing to limit public access to their information property; instead, they seem to glory in the popularity and social attention that flows from wide distribution of their expression.

John Perry Barlow's fundamental insight in a 1994 *Wired* magazine article[22]—that costless, perfect reproduction should change copyright as a social institution—was well-founded. The problem is that copyright law has yet to notice.

Amateur and decentralized production processes are today forming an alternative to the copyright model. The "big picture" in creative information practices is changing, and

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new technologies are playing a central role in the transformation. Decomposing the functions that make up the life cycle of content makes clear the impact of new digital and network technologies.[23] And that will lead to a better understanding of what we should do about copyright.

Content and Copyright

For the past 10 years, many people have argued that copyright is done for. Legal scholars began to build new theories of copyright around changes in digital technology. Scholars sought to theorize the implications of costless dissemination via peer-to-peer networks, and some of those scholars also recognized the influence that cheap reproduction had on copyright.[24] But the changed technologies of reproduction and dissemination are only part of the story. The same types of changes penetrate all other parts of the creative cycle.

These changes are not really about copying or copyright; they are about the entire process of content development, how expressive information makes the full journey from creators to users. The creative content cycle entails seven discrete functions: (1) creation, (2) selection, (3) production, (4) dissemination, (5) promotion, (6) purchase, and (7) use. Every one of the functions involved in this process is being decentralized and "amateurized." Until recently, content relied on centralized control of those functions, and they reinforced a centralized, commercialized process. However, with the development of digital technology, the Internet, and social software, distributed-information networks are pushing content control away from commercial exploitation and toward amateur-to-amateur models.

Creation

In the beginning was the word. Copyright began with the word, though today it can also begin with the mark, the sound, or, increasingly, with the motion of a mouse or the tap of a finger on a keyboard. In the instant before the word, some idea or concept exists, but we are concerned only with how content—the recorded information—moves from its origin to its social use. We therefore need concern ourselves only with the fixed record itself.

In textual works, such as this Policy Analysis, words are piled on words, forming sentences, which in turn form paragraphs, until eventually the process stops. The collection of words that results is called (somewhat arbitrarily to be sure) "the final work" that comprises the essay, the law review article, the book, the poem, or the newspaper story. This first stage, in which a creator writes, composes, draws, paints, or otherwise creates fixed expression, is "creation."

Creation has been in the hands of amateurs for a long time, but only for certain types of works. In areas like writing simple stories, where all one needs is a quill or pen and an idea, amateurs have been active all along. However, creation in many fields has required broad collaboration and large investment, which tends to preclude individual or amateur creation.[25] Historically, for example, aspiring filmmakers were unable to produce motion pictures without the help of financial backers and technical specialists. It is not surprising, then, that the film industry exists in a set of geographically centralized areas and relies on significant collaborative authorship to tie together the interests of those who invest in projects and those who perform, direct, film, and sound record the works.[26] Motion picture creation, as any credit sequence will reveal, involves the efforts of numerous scriptwriters, directors, actors, camera crews, best boys, special effect artists, and so on. And, of course, the dominant means of organizing all those people is the firm. Hence, motion picture production is an industry that comprises a small number of studios.

Other domains, like music and television, have used expensive authoring technologies and therefore have similar arrays of investors, performers, recording professionals, editors, and creative teams who create new works. In popular music, for instance, the creation of a hit song will often involve a number of dis-

parate groups of actors, including composers, lyricists, singers and musicians, and producers. In television production, one finds multiple collaborating scriptwriters, creative directors, actors, and crews. In animation, various teams supervise various aspects of the creative process; in entertainment software, a team of programmers will create and refine the code of a major project.

Advances in technology, however, are dramatically reducing the costs of formerly expensive creative genres. Digital technology has reduced creation cost largely by, as John Perry Barlow observed, detaching information from the physical plane.[27] The technologies of information capture, processing, and storage have shifted away from more cumbersome analog equipment to cheap, lightweight, digital equipment and software.

Individuals now have many of the creation tools that were formerly available only to professionals in the content industries. For instance, in the area of music, software tools today can replicate almost all the capabilities of the 1980s recording studio. Tools like Sonic Foundry's *ACID* range, Apple's *GarageBand*, and Digidesign's *ProTools* now provide amateurs with high-quality recording, looping, voice cleaning and audio effects for less than the price of a secondhand guitar. And some of the early results of those amateur-friendly technologies have competed successfully with the results of professional producers. In late 2003 Gary Jules and Michael Andrews's cover version of Tears for Fears' "Mad World" went to number-one on the English charts. It was produced in Andrews's basement for $50.[28]

The rise in the popularity and prominence of low-cost amateur production can be seen in virtually all other types of content as well. The costs of capital that once precluded amateur creation and required large-scale capital are rapidly vanishing. In the case of movies, cameras, film stock, editing suites, and mastering devices were prohibitively expensive for all but the most highly capitalized players. Today the costs of both information capture and editing have dropped dramatically, thanks to tools that are purely digital. Jonathan Caouette's first movie, *Tarnation*, was shown at the Sundance Festival. It was probably the first feature-length film edited entirely on *iMovie* and cost $218.32 in videotape and materials.[29]

The proliferation of cheap, software-enabled authoring tools has affected all copyright industries. The impact of digitization on amateur authorship first became obvious in the 1980s and 1990s with the advent of the home personal computer. The standard-issue desktop publishing programs on home personal computers enabled amateur writers to compose, edit, typeset, and print legible and attractive materials in ways that were previously within the technical capabilities of only the professional publishing industry.[30] Desktop publishing significantly transformed printed textual information practices in our society. Although the technical revolution spelled the impending demise of many small commercial printing shops, the book-publishing industry accepted the commercial benefits of the technological shift and was not threatened by it.

Distributing desktop-published paper texts was not possible on a grand scale for the average individual. Yet, as discussed in more detail below, personal computer networks in the 1980s did begin to shift distribution potentials to individuals during the early period of the personal computer. E-mail messages, USENET and BBS discussions, educational papers, and FAQs proliferated during the 1980s. Today, the Web is clearly the primary home of amateur creativity.

Most of the millions of Web logs today are decidedly amateur and personal works, recording the author's life experiences, random thoughts and observations, and romantic crises. If one doesn't know the blogger, this type of material may not be very interesting; yet almost every blogger has a friend or family member who will serve as an occasional reader. Some bloggers have even become the equivalent of small-town celebrities, attracting hundreds of thousands of readers per day.

As will be discussed further below, Web logs are increasingly offering one-stop information and entertainment shopping by delivering, in addition to hyperlinks and textual commentary, original digital photogra-

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phy, music and sound files, software programs, and multimedia presentations.

Selection

The next function in the traditional chain of copyright practices is selection. By "selection" we mean the exercise of some discriminatory judgment about which creative works warrant reproduction and distribution. Selection is the process whereby someone decides which works are worthy of the additional investment in conveyance to society. One might suggest that creation itself is a form of selection. Every process of creating "new" work actually involves the intentional or accidental "selection" of words, sounds, and images from a palette of options. Selection, however, may influence creation, as is often the case when an unfinished or planned work is selected for further development.

To understand how important the selection function is in established copyright practices, consider how the "spec screenplay" market functions. Tens of thousands of "speculative" screenplays are created each year by aspiring writers and mailed to agents, producers, publishers, and other agents of the commercial movie industry. Most such scripts go unread, a number are rejected, and a very tiny percentage is actually judged worthy of commercial development.

The decision that a script is worth considering for turning into a movie is the epitome of the selection function. But similar selection functions exist in every copyright industry. Aspiring musicians, singers, and songwriters send demo tapes to a jaded and besieged group of music industry executives. Visual artists compete for shows and the attention of gallery owners. Every March and August, law professors inundate law review editors with cord after cord of pulverized timber, in an effort to attract the attention of those who control access to "high-ranking" publications. Selection is absolutely necessary because investments should not be made in works that will not recoup investments in production and dissemination.

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The significance of selection agents' role can be seen in the premium placed on the mechanics of selection in high-risk industries like pop music and movies. Those industries are based on a venture capital model of risky production: No one knows what type of content is going to be successful, so many bets are placed on various alternative products.[31] That is necessary because, even with selection agents making their best bets, the majority of films, books, and songs are commercial flops. Yet one high-performing "hit" will more than cover the costs of a large number of failures.[32] Optimizing the flop/hit ratio is the job of the selection agent, and the high stress and high turnover of staff in those industries are symptoms of an environment where, as William Goldman says, "no-one knows anything" about what makes the content successful, but agents have to bet anyway.[33]

Of course, some industries are less affected by those kinds of decisions than others, and the ease of being selected in a given industry is generally inversely proportional to the expense and risk that the copyright intermediary will agree to bear in order to exploit the content commercially. Getting a movie made is so expensive and risky that selection in that industry is incredibly protracted, time-consuming, and cautious. Music and novel publishing is slightly expensive and risky, and selection involves choosing a small number of works that appear to provide appropriate probabilities of an appropriate return on investment.

At the other end of the spectrum, law review publishing is underwritten by a combination of individual law school contributions, income from Lexis and Westlaw, and law library subscriptions. In the absence of a bottom line (other than reputation), law review editors do not perform close calculations of risk and return for each article. Given the large number of law reviews in the United States, the number of articles is nearly equivalent to the number of slots for articles. Thus, most articles are essentially guaranteed publication somewhere. In most of the traditional copyright industries, publishing capital is scarce and a small percentage of the works that could be produced actually is pro-

duced. Someone, somewhere, must make decisions about whether a given work is worth exploiting.

The vast majority of copyright-protected works today never move past creation to the process of commercial selection. For instance, most authors of e-mail, diaries, snapshots, and children's birthday videotapes are not generally inclined to seek out commercial exploiters of their creations. An equally great number of artists, composers, and authors work diligently to develop their craft in their spare time but never actually submit their efforts to commercial exploiters. The number of amateur musicians who fail to get a recording contract is dwarfed by the number who never even try.

What takes place in selection is an investment decision. The agents who are performing the selection function—the screenplay readers and the movie executives with greenlight authority, the commissioning editors for trade books and magazines, the artist and repertoire agents for the pop music industry, and so on—are engaged in making *ex ante* decisions about the *ex post* value of the content under consideration.

That structure makes perfect sense in heavily centralized industries where valuable assets and resources have to be deployed in order to exploit the content. It is impossible in those industries to publish all content available because only a fraction of content would cover the cost of transferring that content to the individual consumer.

The need for *ex ante* selection diminishes as the resource constraints on production and dissemination are lowered. If one can economically produce and deliver all content, then there is far less need to be selective. Cheap digital storage and transmission through distributed networks are moving the physical resource constraints of the past toward zero. In an environment of near-zero-cost production and dissemination, it makes much less sense to have a selection agent making *ex ante* decisions about works that the general public might like to see. It makes more sense to empower the individual consumer to choose from among a larger array of works that can be made available at lower cost.

While digitization and the Internet lower physical resource constraints, there is another significant resource constraint alleviated by selection agents: the constraint of limited time. An infinite number of mixed-quality works is much more frustrating for the average person than a set of preselected works. The average individual will pay someone else to screen out the worst and point out the best. The use of trusted selection agents may generally increase selection efficiency, if the aesthetic judgments of the selection agent can be calibrated closely enough to the desires of the individual.

Today distributed selection is an emerging reality. In various ways, distributed selection is replacing the past functions of the entertainment industries by sifting through and prioritizing large numbers of works. Increasingly, "social software" allows for the profiling of personal preferences, cross-indexing of those preferences among individuals, and thereby predicting with relative reliability the preferences of consumers.

Perhaps the best known social software–reliant tool is Google, which ranks the relevance of any given website by determining the number of other sites that are linked to it. As computer scientist Edward Felten has explained, "Google is not a mysterious Oracle of Truth but a numerical scheme for aggregating the preferences expressed by web authors."[34] Google filters out the vast panoply of irrelevant material by collecting relevance assessments made by other users.

Capturing individual preferences and writing preference algorithms that rank information's relevance are generally known as collaborative filtering. Analog collaborative filtering has existed for a long time. For instance, the notion of good "word of mouth" to drive up sales of movie tickets, *Billboard*'s listing of top singles and albums, or the *New York Times*'s listings of "bestsellers" are processes by which, to some extent, the public casts votes that buoy the sales of information products. But well-written collaborative filtering software can offer much more personalized and nuanced varieties of recommendation.

The need for *ex ante* selection diminishes as the resource constraints on production and dissemination are lowered.

Distributed selection is increasingly a more reliable predictor of preferences than are the traditional industry selection agents—commissioning editors, movie executives, and so on.

The process of collaborative filtering by software is perhaps best described by the name of one of the first systems, *People Helping One Another Know Stuff*, or *PHOAKS*.[35] The idea is to match a person, you, for example, with people who are similar to you in meaningful ways and who have rated or reacted to content previously. If we can categorize you as belonging to a group, say a group that likes books with particular subjects and themes, then the book ratings or book purchases of other people in that group can be used to recommend things you will find appealing. Familiar commercial examples include TiVo's suggested broadcasts, Amazon's book recommendations, and Netflix's movie recommendations.[36]

Distributed selection is increasingly a more reliable predictor of preferences than are the traditional industry selection agents—commissioning editors, movie executives, and so on. Distributed selection is real-time, individually tailored, and resistant to the personal generalities, inconsistencies, and information deficits that plague traditional industry agents. The average selection agent makes a gut reaction decision about the interest level in a particular market or submarket. The algorithmic distributed selection agent makes individualized predictions based on the end user's interests.

Though Google, Amazon, TiVo, and Netflix might be the most familiar examples of this type of distributed selection agent, we are beginning to see a number of others in various content industries.[37] In the music field, for example, *AudioScrobbler* is a plug-in for various music-playing applications. In most mp3 playback applications, users can rate music they like and dislike on a five-star scale. You think Björk's "Pagan Poetry" is sheer poetry and rate it at five stars, but you think Britney Spears's "Toxic" is, well, toxic and give it one star. *AudioScrobbler* checks your ratings against the playlists of other users and finds those users whose rankings are most similar to yours. It then recommends songs that those users rate highly but are not on your playlist.

In the text arena, decentralized selection is even more obvious: Consider blogs. Web logs demonstrate distributed-selection characteristics because each blog usually has a "blogroll," or list of other similar blogs, and will usually link to and respond to the posts in other like-minded blogs. Thus, if you like, for instance, the libertarian commentary of "Instapundit,"[38] then its blogroll will direct you to the work of other, like-minded bloggers. There are various mechanisms that allow this process to be performed and updated automatically.

That is a form of collaborative filtering, albeit a fairly simple one.[39] There are a number of other, more sophisticated, examples. The technology news and commentary sites of *Kuro5hin* and *Slashdot* provide a distributed selection mechanism through their moderation process.[40] Any posting on those sites is rated by multiple users, and an average score is assigned to the posting. Other users can then set their threshold, to see only those postings that are rated above a certain level.

The approach can be generalized beyond blogs and technology-related websites. For example, Threadless.com adopts this approach in the fashion industry: Contributors submit T-shirt designs to Threadless, and users both vote and comment on the designs. Designs that are rated above a certain level are then made available for purchase by users. In the film industry a number of sites developed by well-known directors and actors allow the aspiring screenwriter to post her screenplay and have it assessed by other writers, industry players, and eventually, perhaps, Kevin Spacey and Francis Ford Coppola.[41] While broad participation in these types of opt-in voting and review mechanisms may seem surprising (particularly in light of increasing voter apathy in political elections), the *American Idol* show demonstrates that a broad base of people is actually interested in ranking and rating preferences as a form of entertainment.

That is not to say that distributed agents are necessarily better than a centralized agent. Distributed selection is certainly subject to abuse by volunteers as well as capture by marketers.[42] But it seems inevitable that the function of content selection in the future will be

more socially distributed. Central selection agents will lose their relative power in much the same way that the proliferation of cable television channels has led to the decline in prominence of the three major American broadcast networks. In situations in which we can actually compare centralized *ex ante* and decentralized *ex post* selection directly—for example, the *ex post* distributed Google search engine as contrasted with the *ex ante* centralized, human-selected Yahoo! directory—the distributed agent has garnered greater market share because it apparently works better. And for scope of material covered, the work of the volunteer, amateur, and socially distributed Open Directory Project[43] is more comprehensive than the Internet directory produced by Yahoo!

Distributed networks are transforming the selection function. The conclusion is simple: Traditional centralized *ex ante* selection is costly and decreases total available content. Now that distributed selection is possible, *ex post* selection among works by decentralized agents seems to be a better alternative.

Production

In the production function, someone invests in preparing a work for the market. In the area of original oil paintings, this might just mean finding a frame—the original copyrighted work is the relevant object of consumption. But outside of that niche market, production invariably entails the *re*-production of the work. Even in broadcasting, a work must be reproduced in order to be exploited commercially. So, in the case of film, a celluloid print is struck. In the case of packaged software and music, the gold master compact disc is produced and the consumer CDs are reproduced from it. In book and magazine publishing, the text and graphics are typeset and multiple copies are run off from that master version. Large-scale commercial reproduction in the past required substantial capital investments: the purchase of physical media that bore the copies of the original work—paper, film stock, and so on—and the purchase of expensive machinery capable of quickly and inexpensively reproducing the original work onto those media.

However, as is now well understood, the last 20 years have profoundly altered production and reproduction of content. This started with the introduction of consumer reproduction technology: Xerox reprography, audio cassettes, and VCRs. Those technologies were introduced at a time when distributed creation and selection of content were not possible, so we think of them as "reproduction" devices.[44] However, more and more, *reproduction* devices are content *production* devices.

Today, of course, the content production device known as the general-purpose computer is found in a huge number of homes and offices; it comes standard with disk drives sufficient to store untold amounts of information; it has a high-quality video device to display text, movies, and images; it can be outfitted with paper printers to print text, documents, and images; and it inevitably includes CD-ROM/CD-R drives that can play and copy music and data; and DVD/DVD-ROM/DVD-R drives that can play and copy movies. Increasingly, with lightweight laptops and more and more versatile PDAs like the Treo or even Apple's iPod, the general-purpose computer is becoming a mobile and personalized media-and-content device and a vital personal accessory much like the standard eyeglasses and wristwatches of the 20th century.

Consumers once needed intermediaries such as the recording industry for the production of music. The public needed the industry to invest in producing copies because, among other things, individual consumers could not press their own vinyl. Later, consumers could tape music, but that was time-consuming and there was some loss in the quality of the work. Today, with the advent of perfect digital copies, the public can take care of the production function on its own. The music industry, which in the past only had to pursue commercial operations with the means of mass production, has found itself struggling against the production capabilities of the average home-computer owner. The ubiquity of production devices, and the absence of need for

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The Internet revolutionized distribution at the same time it revolutionized production.

intermediaries, is a profound change that has perhaps, as Jessica Litman recently observed, assumed the status of a cliché.[45]

Not only is the computer a production device, but, as noted above, the Internet itself is a technology of production. Each time a website or a blog is accessed, packets of data are transported through the network to be reassembled on the requesting system.[46] People do not speak of "requesting the production of a copy" of a webpage, but that is exactly what takes place when they "visit" websites. Thanks to the production technology of the Internet and the creative potential of the personal computer, "self-publishing" now abounds.

But the genius of cheaper, decentralized production is, not just that people who otherwise would publish can do so more cheaply, but that those who never considered that they could publish are now free to do so, and they are making the most of this opportunity. The blogosphere, and the World Wide Web more generally, is simply the greatest advance in self-expression and self-publishing since the invention of the printing press. Based on the number of people involved, it may well be the most democratic advance in individual publishing *ever*.

The production function, like the creation and selection functions, has been radically decentralized and amateurized by the technology of distributed networks. The production of content, once a primary market function of the copyright industry, is a largely transparent feature of the Internet and distributed networks.

Dissemination

Dissemination has historically entailed the distribution of copies of works to outlets for purchase. Physical distribution beyond one's immediate sphere invariably requires the coordination of supply chains. Bookstores and newsstands are the most obvious examples of the text-publishing industry supply chain. All copyright industries in the era before the Internet required dissemination mechanisms. Film required shipment of celluloid stock, music was shipped on vinyl discs, and so on.

The Internet revolutionized distribution at the same time it revolutionized production. Ten years ago, when Barlow wrote his article in *Wired*, he talked about how the Internet in general would affect dissemination. Since that time, the model of dissemination has become even more decentralized with the development of peer-to-peer networks like Napster, Gnutella, FastTrack, FreeNet, and, most recently, BitTorrent. As others have pointed out, those technologies might be said to mirror the information network structure of the Internet generally, in that they move away from centralized nodes of information production toward distributed, variable-path models without any clear center.

The extraordinary increases in the ease of production and dissemination are well-known, so we need sketch only the most obviously relevant features of the change in dissemination. First, with the increase in the capacity of hard disks, with the greater availability of bandwidth, with distributed indices and servers, and with encrypted transmission, dissemination is increasingly decentralized and incapable of central control.

Applications that use distributed dissemination are proliferating all the time. At first, there was transfer of packets from one computer to another using TCP/IP, the Transmission Control Protocol/Internet Protocol. Then there was the sharing of files, and the major protocol was file transfer protocol or FTP. Not long after that, protocols for electronic mail and webpages were adopted. More recently, we have seen peer-to-peer file sharing and the distributed dissemination of information posted in blog pages. The protocol for this, RSS,[47] allows "newsfeeds" to be established for all blogs, thereby providing for decentralized dissemination of news and other current information.

Barlow predicted that decentralized dissemination of digital information would revolutionize our society. That prediction is coming true. Decentralized dissemination of content is incredibly important, and it will continue to grow in power and prominence in the future.

Of course, the dissemination function deals only with getting content out to con-

sumers. Consumers still have to be made aware of the content and be convinced that they need it. And that is the job of the promotion function.

Promotion

While the creation, selection, production, and dissemination of content are all necessary functions in the content cycle, they are not sufficient. It is one thing to produce and disseminate a work; it is quite another to lead the consumer to the work and convince her to purchase and use it. Arguably, the most important function in the copyright business has always been promotion. For a work to succeed, individual consumers must somehow be made aware of the work's existence and, more important, be convinced to purchase the work (or access to it).

In the past, the processes of selection and promotion were separate, both temporally and strategically. The work of a selection agent was to find the diamonds in the rough, but the promoter was a specialist in selling diamonds, cubic zirconia, or whatever was on hand. The genius of the entertainment industry is not in selecting Britney Spears over a million wannabes. Britney Spears is probably no better a singer or performer than her competitors on *Star Search* so many years ago. What is mostly responsible for Britney Spears's current place on the popular music charts is a well-oiled celebrity promotion apparatus. It is often sophisticated promotion, not the qualities of the artist or the work, that generates the revenues in commercial copyright markets.

The importance of the promotion function to copyright industries is hard to overstate, and it is ignored in almost all accounts of copyright. The greatest works of art, music, and writing are not significant while the public is unaware of them. Only promotion makes them socially important. Indeed, the marriage of marketing to copyright has fueled the explosion of value in many copyrights today: witness how Disney has wed a diversified copyright portfolio with synchronized marketing efforts, transforming works into brands that sell action figures, fast food, sleepwear, and vacations—all of which in turn repopularize the copyrighted work. "Brand licensing" is one of the success stories of the entertainment industries of the second half of the 20th century.

The promotion function is not simply about generating hype by flashing the product before eyeballs at every conceivable opportunity. There is certainly some of that, but the promotion function is more interesting than the story told by simple, left-leaning critiques of Madison Avenue and Hollywood. Promoters must overcome real limits on consumer time and interest. In order to do that, promoters must leverage reputational capital and cultural associations in complex ways. For instance, publishing companies maintain separate imprints for different varieties of content. Those imprints accrue brand recognition for the type and quality of the works they publish. The imprints "Prentice-Hall," "Financial Times," and "Penguin" are well-known imprimaturs of style and quality in, respectively, college textbooks, business news, and trade paperback books. Yet they are actually all brands of just one company, Pearson. Publication of any work within one of those imprints, or within any other imprint owned by another company, provides a promotion signal that the new work is of a nature that consumers of previous content in that imprint like.

Likewise, many types of serial works, such as magazines or journals, carry a strong promotional signal: if you liked the June issue of *Cat Fancy*, you will probably like the July issue of *Cat Fancy*. A similar mechanism is at work in small record labels, where particular labels—Def-Jam Records or Rhino Records—become associated with particular styles of music. As with text-publishing imprints, these are often brands of larger music labels. For instance, Vivendi's Universal Music Group owns MCA Records, Polygram, Island/Def Jam, Motown, Decca Records, Geffen/DGC Records, Universal Records, Interscope Records, and Rising Tide, whereas Bertelsmann owns Arista Records, BMG, RCA Records, Bad Boy Records, LaFace Records, Time Bomb Records, and Windham Hill Group. Obviously, Bad Boy Records and Windham Hill Group benefit from not being

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synonymous with Arista Records. They send divergent signals to their divergent consumers about the content that bears their respective imprints.

The various copyright industries engage in many other types of activities as part of their promotion function. In the popular music business, the singer, promoter, and music label promote the content with music videos, concert tours, live radio appearances, and magazine appearances. The promotion function is primarily about finding a mechanism to connect potential consumers with content they are interested in using. Promotion is probably the most important function making the difference between successful and unsuccessful exploitation of copyrighted content.

One might think that this would not change with the advent of the personal computer and the Internet. Firms like Penguin or Sony still rely on television, radio, and billboard advertising; direct mailings; and other types of expensive marketing to find customers. It would be reasonable to assume that amateur content could never compete with Britney Spears, because promotion is so key to the prominence and success of content, and amateurs simply can't afford to promote their content.

Increasingly, however, we are seeing the decentralization and consequent amateurization of the promotion function. In fact, the selection and promotion functions are merging. Consider the discussion above about how selection no longer must be performed by centralized agents but can occur through distributed recommendation techniques, using collaborative filtering and social software. The personalized recommendations produced also may take the place of advertising, specialized imprints, and even critics. The rating of a particular movie, book, or article by people who are just like you may be a much better mechanism of promotion than any of the mechanisms that centralized actors have had at their disposal. The review function in Amazon.com is one in which individuals are, essentially, promoting content in a decentralized manner.

Increasingly we are seeing the decentralization and consequent amateurization of the promotion function.

Other virtual communities are emerging to recommend content to their members. That started with Usenet and list servers, expanded through Yahoo! Clubs, and now finds its home in the blogosphere. Distributed recommendation systems like Epinions have been built to express opinions on all manner of things, people, and content. One can find interactive communities of specialists who are devoted to any topic and provide expert opinion on all manner of content. That may seem something less than a paradigm shift, but, comparing it with the centralized copyright promotion model, consider how we might feel having 50 people in each section of the bookstore/record shop/movie theater who do nothing but assess the content and offer advice to us. Consumers today can find the opinions of the experts and aficionados who share their interests almost exactly.

The promotion function is, and will be, significantly affected by distributed networks. A distributed amateur selection function can fulfill most of the same social role performed by the selection and promotion functions. Although that hardly means that works will no longer be promoted, it means that social software will increasingly become a promotional instrument that will be more diversified and less subject to control by centralized actors.

Purchase and Use

Purchase, in the traditional theory of copyright, creates the incentive for creation and also subsidizes the previous five processes. In exchange for cash, a consumer acquires the right to access a work—generally in the form of a physical item containing the content—a CD, DVD, or book. Purchase can be unrelated to the acquisition of physical media. In the case of movie theatres, museums, or concert halls, all the consumer is getting for her cash is a right to experience the content in air-conditioned comfort, perhaps while enjoying a bag of popcorn the size of her head.

With the proliferation of peer-to-peer systems, many commentators have weighed in on methods by which people within the

copyright industry might be paid. Those methods include levies on computer systems, online tip jars, electronic equivalents of busking, a return to the system of artistic patronage, or earning money through public performance while online content acts as promotional material.

Those approaches are innovative and interesting, and they show that a decentralized purchase function, if needed at all, does not have to look like a typical retail transaction. But a traditional purchase function is possible, and easy, for decentralized actors. Five years' experience with online payment demonstrates how simple it is for purchases to be made through the Internet. The practice of "micropayments," once shunned as technically unfeasible, is becoming increasingly common in the digital marketplace.

But it also must be observed that a direct financial return is not the foremost goal of many players in the content chain. The former goal of creating content associated with a particular business or artist in order to sell that content is giving way to individual authorship and selection designed to build an artist's brand and personal reputation or to establish a person's membership in an online social community. While such reputation enhancement and community recognition will generally lead to financial rewards of some sort, this may not occur through direct purchase. Just as likely, it will be through live performance, speaking engagements, co-branding, marketing of tangible products, and the like.

The final function in the content chain is use: the experience or manipulation of the content by the purchaser. It might appear strange to include this as a "function" of the creative cycle at all, because the commercial exploitation of a copyrighted product would seem to begin with its creation and end with its purchase. However, use is an integral aspect of the life cycle of creative content.

If one thinks of use under the traditional copyright model, use is merely passive reception of the content, and nothing has changed. However, if one sees use as adapting, retransmitting, modifying, or otherwise building upon the content, much has changed. In essence, whereas the "use" stage of the creative process in the past was when a creation reached the public, the "use" stage in the amateur-to-amateur model is merely the beginning of the next stage in the creative cycle. The amateur end user may become the amateur recreator or redistributor.[48]

That shift should not be lamented. What was once the largely passive reception of content by the public can now be the receipt of new matter to be recast in the workshop of public creativity and conversation. The most valuable creative works today are not placed on a pedestal and admired in repose. If a new work provides something that is engaging and valuable, the average citizen amateur can now modify and revise it, adding a new soundtrack, a new chapter, a different edit, or a derivative rendition. Each consumer is technologically (though perhaps not legally) free, given time and inclination, to create his or her own version of the work and place it within an ever-growing and faster-growing corpus of works.

When copyright industries look at those activities, they often decry amateur retooling of their properties as a form of theft. It is nothing of the sort. Copyright policy should celebrate the new powers of collaborative and amateur artistry that digital technologies have made possible and encourage their use. Instead of using Congress and the courts to prohibit this kind of creative flowering, we should look for new ways to legally accommodate and encourage the democratic and creative potentials we are seeing.

Centralization and Decentralization

Many functions are involved in the creation and commercial exploitation of content. As we have seen, those functions have traditionally been performed by large, centralized businesses. As it has democratized the steps in the creative cycle, technology has also decentralized those functions.

Copyright policy should celebrate the new powers of collaborative and amateur artistry that digital technologies have made possible.

Until recently, centralized commercial control was intrinsic to nearly all the functions of the creative cycle.

Centralization during Expansion

Until recently, centralized commercial control was intrinsic to nearly all the functions of the creative cycle discussed above. That was not a product of legal constraints but rather of the interplay between the marketplace and the relevant technologies. Like Rome at the height of its empire, during the period prior to digital technology, the copyright regime reinforced centralized control of almost every content function.

The lynchpins of the creative cycle requiring centralized commercial control were production and dissemination. They were both capital-intensive functions that benefited from vertical integration and economies of scale. It was impossible to produce any of the content without big, expensive machines and significant investment in labor. Offset printing presses, vinyl-record-mastering machines, television cameras the size of cars, and recording studios the size of warehouses all came with hefty price tags and involved a skilled and expensive workforce. Dissemination was equally expensive and subject to central control. The basic model for the distribution of copyrighted content was the same as the model for the distribution of widgets, or any other physical object. Content generally came embodied in some physical medium, and so an expensive supply chain was necessary.

The capital-intensive nature of production and dissemination created a bottleneck and guaranteed the influence of producers and distributors over all the other functions in the content cycle. The most obvious were the adjacent functions of selection and promotion. Effective selection was the main way to maximize purchases and recoup investments in production and dissemination. So the selection function relied on skilled agents who were in the employ of those players in the copyright industries that controlled production and distribution.

The promotion function was also firmly controlled by the industry. As with selection, this was because successful promotion was essential to recouping investments in production and dissemination. It was also due to economies of scale in the promotion function: Advertising is high cost and capital intensive. Thus, it is the domain of large professionalized firms.

To a somewhat lesser degree, creation, purchase, and use were also subject to the control of the agents of production and dissemination. As we suggested earlier, creation and selection are tightly intertwined processes. It might have been possible to write a book in a lonely garret, but that book could not reach the public if it remained in the garret. Therefore, selection was a function that made centralized commercial actors essential even in a creative cycle that began with a lone author. Indeed, the creation function was in some cases subsidized and controlled by the same entities that handled the other functions, again because that decreased risks. Where particular formulas are discovered—"boy bands" in music, "chick-lit" for books, animated movies based on fairytales, and so on—the same firms that act as promoters and distributors often control and supervise the creative process and essentially become the agents of authorship.

Still, to some degree, decentralization of content creation benefited content firms more than did fixed centralized control. Stables of artists are expensive to maintain, and their productivity, in some cases, is difficult to ensure; think of early Hollywood's "star system." Outside creators, not maintained in the employ of the centralized actors, can be relied on to fuel the industry with new ideas. In many industries, there is never a shortage of content being offered by eager outsiders. For instance, musical compositions and screenplays are often created in a decentralized fashion but are then purchased and used by industry entities as elements of sound recordings and films. Artistic genius, integrity, and rebel independence have long been part of a mythology attractive to creative artists. They have also made good grist for the mill of commercial business.

Finally, the function of purchase was also under large-scale centralized control. Access to retail channels was economically tied to the

dissemination and promotion functions. Few retailers of copyrighted content will stock material that is hard to obtain because of supply chain difficulties or that is going to linger on the shelves as a result of a lack of promotional budgets. With the exceptions of a few small do-it-yourselfers—such as the Grateful Dead, who sold content and merchandise at their concerts—the vast majority of content was sold and purchased through centralized channels.

The only function that was not clearly in the hands of central actors was use. Traditionally, use has not been a concern of the copyright industries, beyond attempts to prohibit lending, reproduction, and subsequent resale, because it has been regarded as passive absorption of the content rather than as further creation. But the use function can replicate the other creative-cycle functions of production, distribution, promotion, and even purchase through resale. Use can (and often does) extend the chain of commerce for any given work. The industry has been hostile to this kind of use (for obvious reasons).

Postpurchase activities are not always harmful to copyright owners, though. An amusing example of this is found in *Reefer Madness*, Eric Schlosser's history of the drug and pornography industries.[49] He tells the story of the dissemination of *Deep Throat*, one of the earliest successful pornographic movies. In an effort to "get a piece of the porno,"[50] various small-time hoodlums duplicated the movie, at a time when celluloid film was the only reproduction format available. They then distributed the unauthorized prints to various pornographic theaters on the assumption that the owners of the copyright would not sue for infringement because of the dubious legality of pornographic films at the time. However, representatives of the owners simply showed up at theaters showing the film and demanded a 50-50 cut of the take. According to Schlosser, few theater owners refused. In an unanticipated manner, unauthorized activities actually assisted the copyright owners in avoiding promotion, production, and distribution costs they would otherwise have had to bear.

The story of the copyright industry was—during the period prior to consumer reproduction technologies and the rise of the Internet—a familiar one for all who had read Adam Smith on specialization[51] or Ronald Coase on the nature of the firm.[52] For various reasons too arcane to investigate here, large firms are generally thought to be better than individuals at absorbing risk, planning strategy, and coordinating markets. It is unsurprising that copyright's domain during the period prior to 1970 was centralized and controlled by discrete copyright industries.

Decentralization and Revolution

As demonstrated above, the functions of the creative cycle that formerly supported centralization have migrated to the edges of the system, to the amateurs who create the content and the amateurs who use the content. Two issues emerge from this movement toward amateurization: (1) why some industries are disproportionately affected by the move toward the amateur-to-amateur environment and (2) whether the rise of the amateur-to-amateur model is inevitably a destructive force for those industries.

With all the attention paid to the exchange of copyrighted music on the Internet, it is too easy to forget that, in terms of net transfers of material protected by copyright, the peer-to-peer transfer of music files is really an exceedingly small fraction of Internet traffic today. By far the prevalent exchanges are copies being made of texts, images, and computer programs. The World Wide Web is constructed from those components, and each time a webpage loads, a transfer of material protected by copyright law has occurred. However, practically all webpages are provided by the copyright holder with the express intention that the material be copied by others on the network, which makes lawsuits over copying unlikely.

The problem, originally with Napster and now with other peer-to-peer services, is not that legions of downloaders have less respect for musical copyrights than for other copyrights. Rather, the centrifugal pressures

The functions of the creative cycle that formerly supported centralization have migrated to the edges of the system.

The music industry was the first content industry to suffer the shock waves of copyright decentralization, but it will not be the last.

described above disproportionately affect music because of the way it is disseminated and consumed.

Twenty years ago, one might have surmised that the part of the copyright industry most vulnerable to erosion by unauthorized networked digital distribution would be books, not music. Even in the 1980s, a 200-page popular paperback novel could easily have fit on one of the floppy diskettes that were widely available. It did not happen then, and even today peer-to-peer markets for Harry Potter books are almost nonexistent. In the 1980s the thought that popular music would be the vanguard content in digital copyright discussions would have seemed ludicrous—the personal computers of that time generally had sound systems reminiscent of R2D2's dialect in the *Star Wars* films. Yet today, the piracy of digital music is so widespread that some commentators suggest that the music industry is dead.

Why is the recording industry waging a public relations war over copyright while Harry Potter books fly off bookstore shelves in hardcover editions? Why is it that some content industries are so affected by decentralization and others are not?

There are some obvious differences between various content industries that lead to differences in the effects of the trend toward decentralization and amateurization. The major determining factor seems to be whether the content is available, and may be used, in a native digital format.

Contrast musical recordings and books. Even though the text of a work of fiction could have fit on a floppy disk in the 1980s, books have never been widely distributed in digital versions that a personal computer could interpret. The sale of music on compact discs (beginning in the mid-1980s), on the other hand, combined with the widespread inclusion of compact disc drives on computers (beginning in the mid-1990s) effectively sealed the fate of the music industry. Today's file-sharing programs like Kazaa and Morpheus are essentially just the back-formations of the choice of the compact disc as a distribution mechanism.

Although compression and file-sharing software certainly played their part in bringing digital music to the front lines of the copyright wars, they were really the last tiny links in a more important chain. The after-markets in MP3 files could never have existed if file sharing via MP3s had not been remarkably easy—especially given that the people fueling the market receive no remuneration and bear the risk of lawsuits. The answer to "Why music?" is that the technologies for the exploitation of music were already integrated into personal computers by the 1990s, and the format of music via computer provided the user with something roughly equivalent to the experience of music in the prior formats.

In general, technological advances will increase decentralized amateur activity like file sharing over the long term—the music industry was the first content industry to suffer the shock waves of copyright decentralization, but it will not be the last. Perhaps at some point the chore of creating a digital copy of a Harry Potter book will be substantially lessened by advances in scanning devices and optical character recognition. Perhaps habituation of the public to reading from tablet computers or the availability of screens that mimic the look and feel of paper will give users the experience of reading from a book. And perhaps new compression schemes, faster broadband connections, and decryption software will make the often-reported incidents of peer-to-peer movie sharing something more than a bogeyman that appears very often in the press but very rarely in the average home. Certainly the increasingly widespread use of more powerful digital cameras, scanners, and phone-cameras will increase unauthorized copyright after-markets for images.

It is likely that the movie industry will eventually face the same issues faced by the music industry. Movies are released today in digital format on DVDs. This means that users can get the same experience from a copy procured online as from an original DVD. Once network bandwidth and disk storage capacity catch up, the movie industry will follow the music industry into a spiral of

copyright infringement actions, finger-pointing, and recriminations. Which brings us to the question of whether this is a death spiral. Is decentralization necessarily a destructive force for the content industries?

The discussion above draws attention to two, seemingly inconsistent, notions. Decentralization seems to provide greater opportunities for creativity, yet an entire creative industry, the music industry, is supposedly faced with wholesale evisceration as a consequence of applying decentralized functions to music. At first these two positions don't seem to be reconcilable. How could creativity flourish but the creative industry founder?

Our suggestion is this: When, as is true today, valuable content can be created for decreasing costs, decentralization of the functions in the creative cycle will lead to a much greater proliferation of expressive content without great participation by copyright-holding firms. The erosion of the power of the centralized copyright firm heralds the rise of the power of the decentralized copyright amateur.

It is often said that everyone has a book in him: decentralized content functions mean that everyone can now write the book inside him, produce it, distribute it, and have it selected and used by that tiny subset of the population that would really love it. The majority of writers may well be better off under this model, and the majority of readers may well be better off in this model. Those who benefited from the centralized system envisioned by copyright may be worse off, but if society is better off, does the erosion of copyright's value matter so much?

Of course, there are some downsides. The story is somewhat more complicated when it comes to large-scale creative endeavor. With the average cost of a studio movie now in the tens of millions of dollars, and some reaching hundreds of millions, we might think that decentralization will spell the end of all moviemaking, since file sharing will destroy the movie industry's revenue model and prevent massive investments in blockbuster films. But perhaps that does not follow so smoothly. Though the industry as structured now may falter, large firms may no longer be needed to create extraordinarily detailed, complicated, rich, and formerly expensive works (like blockbuster films).

Open-source software—like Linux or MySQL—provides the model for distributed production of complex creative objects.[53] Microsoft spends hundreds of millions of dollars producing an operating system, yet open-source methods mean that a superior operating system can be built by amateurs collaborating around the world. There are, by now, a sufficient number of examples of this type of open-source creativity—in areas including software, newspapers, and commentary—to allow us to conclude that this type of organization can supplant the firm in the production of complex creative objects. That is not to say that the firm is necessarily dead; rather, a new form of social and community organization can produce content that once was the province solely of the centralized, heavily capitalized industries.

Indeed, the future may hold an "open-source blockbuster movie"—though, of course, we can't be sure that it will look anything like blockbusters as we currently know them. What we can say, though, is that decentralized and amateur collaborative processes may produce new, innovative artistic forms and works with social and economic value that is hard to predict or evaluate beforehand. What we urge is that such projects be allowed and encouraged to grow, not strangled in the crib because they conflict with the traditional role of copyright law in the creative process.

The firms and industries that rely on copyright are not ordained by God or fate. They exist because of historically contingent facts that required centralized control of the functions that move creative material from creator to user. William Gibson charts that historical contingency in discussing the rise and fall of musicians and the music industry:

Prior to the technology of audio recording, there was relatively little one could do to make serious money with music. Musicians could perform for money, and the printing press had given rise to an industry in sheet music, but

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great fame, and wealth, tended to be a matter of patronage. The medium of the commercial audio recording changed that and created an industry predicated on an inherent technological monopoly of the means of production. Ordinary citizens could neither make nor manufacture audio recordings. That monopoly has now ended. The window, then, in which one could become the Beatles and occupy that sort of market position, is seen to have been technologically determined.[54]

The content industries do not much matter in and of themselves (except, of course, to those who work in them). What matters is the social benefit of having creative content available to our society. Losing the copyright industries would be terrible if, and only if, they were the sole means of generating socially valuable creative content.

But the amateur-to-amateur trend now provides individuals with the opportunity to meet society's needs for creative expression as well as the previously unknown pleasures of being petty agents in the broader creative culture. Society benefits greatly from this expanded content generation and from the democratization of media and communications that it enables. The coming years promise individuals and collaborative groups even greater opportunities to create popular content. As a result, society as a whole is likely to be better off. We should allow and promote decentralization of all functions in the creative cycle.

Conclusion

"Rome did not fall. It was transformed."[55] Rome was once the center of the world. What we think of as the fall of an empire was, Peter Brown reminds us, just the transfer of Roman influence into a much different world. It is meaningless to ask whether the unitary might of imperial Rome was somehow inherently superior to the distributed, messy agglomeration of states that emerged after Rome fell. Some things were better, things were worse. On average, things were just different.

Just as the Roman Empire became modern-day Europe, copyright might be best transformed into something else.

It is not surprising that people within the copyright industries see the impending decline of their business models with some apprehension. Imperial Romans saw the disappearance of their empire as the end of civilization. They could not conceive that another, more interesting order might rise in its place. But instead of empire we saw empires. Instead of Rome we saw the emergence of many different cultures, peoples, and states. A similar process is happening in the creative content cycle. Instead of a unitary system called copyright governing our information practices, we are seeing the emergence of a distributed, messy agglomeration of opportunities in content creation, production, distribution, and so on.

It is important to see that the amateur-to-amateur model that new technologies have thrust upon us will not be thwarted by copyright law. With time, technology will inevitably dictate that copyright's empire—the central, all-encompassing structure for development of creative content—will decline and may well fall. New tribes of amateurs will emerge and become significant forces in cultural content, occupying various places on the old chain links of the creative cycle and displacing their predecessors.

This transformation does not signal the end of culture. In fact, it does not even signal the end of copyright. But it does suggest that, just as the Roman Empire became modern-day Europe, copyright might be best transformed into something else. It should, chiefly, come to be a more democratic system. It should reflect contemporary reality by becoming a law that protects limited rights in particular valuable forms of expression, not a law that acts as a censor.

Just as Europe reflects ancient Rome, copyright will undoubtedly continue to reflect its imperial heritage in many ways. But it will need to change in important ways as well. Copyright can no longer claim to be like Rome in the sphere of creative production: all-encompassing, all-powerful, all-important.

Notes

1. See Joseph P. Liu, "Copyright Law's Theory of the Consumer," *Boston College Law Review* 44

(2003): 402 (identifying this as the "couch potato" understanding of the copyright consumer).

2. Jane C. Ginsburg, "From Having Copies to Experiencing Works: The Development of an Access Right in U.S. Copyright Law," *Journal of the Copyright Society* 50 (2003): 113 (describing the diminishing importance of physical "copies" to copyright law).

3. Pew Internet & American Life Project, *Content Creation Online*, February 29, 2004.

4. For similar formulations describing the same general category of information producers and distributors, see Yochai Benkler, "Freedom in the Commons, Towards a Political Economy of Information," *Duke Law Journal* 52 (2003):1249 ("non-market"); James Boyle, "The Second Enclosure Movement and the Construction of the Public Domain," *Law and Contemporary Problems* 66 (2003): 45 ("volunteers"); F. Gregory Lastowka, "Free Access and the Future of Copyright," *Rutgers Computer and Technology Law Journal* 27 (2001): 293 ("altruists"); and Eben Moglen, "Anarchism Triumphant: Free Software and the Death of Copyright," *First Monday*, August 2, 1999, http://moglen.law.columbia.edu/publications/anarchism.html (describing "Anarchism as a Mode of Production").

5. See generally Ginsburg, "From Having Copies to Experiencing Works"; and Liu.

6. William Wordsworth, "Lines Composed a Few Miles above Tintern Abby," 1798.

7. See *Bleistein v. Donaldson Lithographing Company*, 188 U.S. 239 (1903); see generally Alfred C. Yen, "Copyright Opinions and Aesthetic Theory," *Southern California Law Review* 71 (1998): 247.

8. 499 U.S. 340 (1990).

9. Jessica Litman, "Copyright Noncompliance (Or Why We Can't Just Say 'Yes' to Licensing)," *New York University Journal of International Law and Politics* 29 (1996): 251.

10. Lyman Ray Patterson, *Copyright in Historical Perspective* (Nashville, TN: Vanderbilt University Press, 1968), pp. 28–32.

11. Ibid., p. 145.

12. 17 U.S.C. §102(a).

13. See generally Joseph Ledoux, *Synaptic Self: How Our Brains Become Who We Are* (New York: Viking Adult, 2003).

14. See generally David Nimmer, "Brains and Other Paraphernalia of the Digital Age," *Harvard Journal of Law & Technology* 10 (1996): 42–43.

15. See generally James Boyle, "Foucault in Cyberspace: Surveillance, Sovereignty, and Hard-wired Censors," *University of Cincinnati Law Review* 66 (1997): 177.

16. In 2003 a widespread Internet distribution occurred of a videotape of Paris Hilton's sexual encounter with one Rick Saloman. Saloman himself marketed the video and even filed a copyright registration for it. He sued a defendant in federal court for reproducing the video without his permission. The defendant claimed that Saloman's copyright registration was invalid because he had failed to list Hilton as a coauthor who participated in the authorship of the recording. See "Paris Hilton 'Directed' Sex Video," *CNN.com*, February 24, 2004, www.cnn.com/2004/SHOWBIZ/02/24/hilton.sextape.reut/.

17. Jane C. Ginsburg, "How Copyright Got a Bad Name for Itself," *Columbia Journal of Law and the Arts* 26 (2002): 67 (describing the general response of copyright holders to new technologies as "Pavlovian").

18. See Liu, p. 410 (describing technology-specific lawsuits concerning the Rio MP3 player and MP3.com).

19. Pursuant to 17 U.S.C. § 108 and 37 C.F.R. § 201.14, supervised library photocopiers require an elaborate copyright restriction notice.

20. 17 U.S.C. § 1201(a).

21. In fact, Google's search algorithm essentially discriminates against password-protected works because its search engine cannot "see" works for which payment is required, and thus cannot index those websites. Google also prioritizes works on the basis of perceived popularity, and inevitably free-access websites are more popular than websites that demand payment for access to content.

22. John Perry Barlow, "The Economy of Ideas," *Wired* 2, no. 3 (1994), http://www.wired.com/wired/archive/2.03/economy.ideas_pr.html. The essay is full of rhetorical excess and ranges over many arguments why the Net will destroy copyright. It includes observations that jurisdictional problems will be fatal, that information is a "verb not a noun," and that information is "a relationship not a thing." Much of this is amusing, though the core insight remains, and it was all the more interesting and surprising that it came from a member of the Grateful Dead: a person who would ordinarily be viewed as favoring strong copyright protection as the basis for commercial exploitation of his expression.

23. See ibid. Mark Nadel has a similar interest in

articulating and analyzing discrete "stages" of social activities relevant to the copyright process. See Mark S. Nadel, "The Consumer Product Selection Process in an Internet Age: Obstacles to Maximum Effectiveness & Policy Options," *Harvard Journal of Law and Technology* 14 (2001): 183.

24. Jessica Litman, *Digital Copyright* (New York: Prometheus Books, 2001); and Ray Ku, "The Creative Destruction of Copyright: Napster and the New Economics of Digital Technology," *University of Chicago Law Review* 69 (2002): 263.

25. See, e.g., James Boyle, *Shamans, Software, & Spleens: Law and the Construction of the Information Society* (Cambridge, MA: Harvard University Press, 1996), pp. 41, 51, 159–61 (discussing the history of the concept of authorship and the construction of self-interest and romantic authorship); Rosemary Coombe, *The Cultural Life of Intellectual Properties: Authorship, Appropriation, and the Law* (Durham, NC: Duke University Press, 1998), pp. 211–12, 219–20 (examining problems with conception of romantic authorship); and Mark Lemley, "Romantic Authorship and the Rhetoric of Property," *Texas Law Review* 75 (1997): 873 (same).

26. See F. Jay Dougherty, "Not a Spike Lee Joint? Issues in the Authorship of Motion Pictures under U.S. Copyright Law," *University of California at Los Angeles Law Review* 49 (2001): 225.

27. Barlow.

28. "Gary Jules Remains at Number One," *BBC News*, December 28, 2003, http://news.bbc.co.uk/go/pr/fr/-/1/hi/entertainment/music/335 2667.stm

29. Jason Silverman, "Here's the Price of Fame: $218.32," *Wired News*, January 20 2004, http://www.wired.com/news/digiwood/0,1412,61970,00.html?tw=wn_tophead_2.

30. See Steven Levy, *Insanely Great: The Life and Times of Macintosh, the Computer That Changed Everything* (New York: Viking, 2000), pp. 210–11; and Wikipedia, "Word Processor," http://en.wikipedia.org/wiki/Word_processor.

31. See, e.g., John Seabrook, "The Money Note," *New Yorker*, July 7, 2004, p. 42. (examining the business model of the music industry and the betting strategy on singers and music styles).

32. "I asked Flom [an A&R executive in the music industry] whether he thought hits might become less important to the record business. 'That ain't gonna happen,' he said. 'If anything, hits can be more important than ever, because you can make stars on a global scale now. . . . [T]he day we stop seeing hits is the day people stop buying records.'" Seabrook, pp. 42, 46.

33. William Goldman, *Adventures in the Screen Trade* (New York: Warner Books, 1989), p. 39.

34. Felten explained this on his weblog. See Edward W. Felten, "Googlocracy in Action," http://www.freedom-to-tinker.com/archives/000509.html.

35. See http://www.phoaks.com//index.html.

36. The systems are primarily automated, collaborative systems but have human overrides. See Lisa Guernsey, "Making Intelligence a Bit Less Artificial," *New York Times*, May 1, 2003.

37. See Clay Shirky, "The Music Business and the Big Flip," http://shirky.com/writings/music_flip.html (suggesting ways distributed selection might work in the music industry and its effect on A&R—industry lingo for artists and repertoire).

38. http://www.instapundit.com/.

39. Other examples within the blogosphere include Popdex, a website popularity index, http://www.popdex.com/; Blogdex, an index of the "most contagious" blogs and memes, http://www.blogdex.com/; and Daypop, a blog-based news and current events service, http://www.daypop.com/.

40. See Yochai Benkler, "Coase's Penguin, Or, Linux and the Nature of the Firm," *Yale Law Journal* 112 (2002): 394–95.

41. See Trigger Street Productions website, http://www.triggerstreet.com/gbase/Trigger/Homepage; and America Zoetrope and Virtual Studio, http://www.zoetrope.com/about.cgi.

42. See F. Gregory Lastowka, "Search Engines, HTML, and Trademarks: What's the Meta For?" *Virginia Law Review* 86 (2000): 835–84 (discussing strategic manipulation of search engine rankings).

43. http://www.dmoz.org/.

44. Of course, from the perspective of the centralized players in the copyright industries, these are "unauthorized reproduction" technologies.

45. Jessica Litman, "War Stories," *Cardozo Arts & Entertainment Law Journal* 20 (2002): 337.

46. Boyle, "The Second Enclosure Movement," p. 40.

47. The acronym RSS is said to stand for "Really Simple Syndication" or sometimes "RDF Site Summary." See http://blogs.law.harvard.edu/tech/rss or http://www.answerbag.com/q_view.php/772.

48. Liu, pp. 406–21 (discussing more active approaches to the theory of consumer "use").

49. Eric Schlosser, *Reefer Madness: Sex, Drugs, and Cheap Labor in the American Black Market* (New York: Houghton Mifflin, 2003).

50. Ibid., p. 137.

51. "[A] workman not educated to this business (which the division of labor has rendered a distinct trade), nor acquainted with the use of the machinery employed in it (to the invention of which the same division of labor has probably given occasion), could scarce . . . make one pin in a day, and certainly could not make twenty. . . . I have seen a small manufactory of this kind where 10 men only were employed. . . . But though they were very poor, and therefore but indifferently accommodated with the necessary machinery, they could . . . make upwards of 48,000 pins in a day." Adam Smith, *An Inquiry into the Nature and Causes of the Wealth of Nations*, 1776.

52. Ronald H. Coase, "The Nature of the Firm," *Economica* 4 (1937): 386.

53. See Benkler, "Coase's Penguin."

54. William Gibson, Address to Directors Guild of America "Digital Day", Los Angeles, May 17, 2003, http://www.williamgibsonbooks.com/archive/2003_05_01_archive.asp#200322370.

55. Peter Brown, *The Cult of the Saints: Its Rise and Function in Latin Christianity* (Chicago: University of Chicago Press, 1981), p. 36.

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