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## **Disciplining Markets in the Digital Age**

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**We are embarking on a new project—technological research. We aim to enlist the finest brains of the best in the high-technology field to develop technological measures and means to baffle piracy. At the same time we are continuing to work with the most inventive men and women in the IT and CE [consumer electronics] sectors. By embracing these innovative scientists, I believe we can extract from this research more than a few counter-measures to put together a technological framework where all our industries can thrive, to the benefit of consumers. We are hopeful, very hopeful. —Valenti (2003)**

Much of this volume explores how digital technologies support forms of creativity at the peripheries of commercial systems of cultural production in the position of the cultural value chain traditionally assigned to consumers. Mizuko Ito (Chapter 6), T.L. Taylor (Chapter 7), Jonah Peretti (Chapter 9), and Robert F. Nideffer (Chapter 12), especially, examine shifts in the technologies and norms that structure relationships between cultural producers and consumers and give rise to new cultural roles that blur distinctions between the two—the player-producer, the *otaku*, the contagious media agent, the hacker. The contribution of digital technologies to this process is felt primarily along two axes: growth in the scope of “authorship,” meaning the ability to create and transform cultural goods; and growth in the size of the publics within which individuals can efficiently operate, reflecting improved capacities to search for, collaborate on, and distribute expressive material across large networks. Decreasing computing costs and increasing computational power—the familiar effects of “Moore’s law”—have driven the first process. Developments in network technologies have underwritten the second, here tracking not Moore but rather Robert Metcalfe’s intuition that the value of networks scales exponentially with the number of participants (“Metcalfe’s law”).

As these nominal laws reinforce each other, individual expression can circulate and aggregate on a scale once reserved for corporations and other large institutions. This empowerment of the periphery is a recurrent feature of the recent history of digital technologies, reflected in practices as diverse as open source software production, music remixing, and peer-to-peer file sharing. It is a social dynamic anchored in and, in many respects, epitomized by two key technologies: the decentralized, “end-to-end” architecture of the Internet and the general-purpose computer, which together have provided wide latitude for user-centered innovation. In many respects, this openness is a fragile construct built on research cultures, design practices, public policy

choices, and market forces that have—at key moments—undercut the ability of industry leaders to control innovation. There is nothing permanent or necessary about it.

Since the emergence of mass markets for books, newspapers, and other media products in the 19th century, a very different dynamic has shaped the production of most cultural goods. This dynamic favored a relatively sharp division of roles between large-scale producers and distributors on one side and consumers on the other. Even where individuals remained closely identified with the production of cultural works—writing fiction, for example—culture markets were accessible only through larger intermediaries, such as publishers. Today, production and distribution are dominated by media conglomerates built to leverage not only economies of scale in the production of goods but also economies of scope as they repurpose content across different media platforms and world regions. These advantages depend on control of the commodity chain—the life of the cultural good—from production, to distribution, to increasingly complex and persistent relationships with consumers. Historically, this kind of control was achieved not through research projects like the one Valenti describes, but by long processes of accommodation between media industries, individual creators, consumers, and the material characteristics of the media themselves.

As cultural commodities are digitized, the characteristics that matter most are the generic features of computers and the Internet. At their simplest, computers are devices for storing, moving, copying, and transforming data. All higher functions build on these operations. The Internet's central innovation, in turn, was the ability to connect remote computers without the need for centralized intermediaries. In little more than a decade, these conjoined technologies radically democratized the production and distribution of media. In the process, they have challenged important aspects of the industrial organization of culture. Distribution, once subject to powerful economies of scale, has become cheap and easy, and difficult to monopolize. This proliferation of capacities has partially unraveled industry commodity chains, without (yet) creating a new culture sector that can assert its interests against the incumbents. From the perspective of the industries, these developments look more like the disintegration of culture—their culture—than like cultural democratization.

Concern for the future of emerging user-centered dynamics underlies our inquiry into the “structures of participation” of digital culture. One of the core political commitments of this volume is to an expanded view of cultural agency that embraces the new capacities for making and sharing creative work. In a broad sense, these capacities are basic to all cultural activity, reflecting the complex ways in which people create and share meaning. Digital technologies do not alter these fundamentals, but they do offer new ways of scaling up cultural agency from interpersonal and local relations toward the larger, dispersed forms of association characteristic of modern society. They create the conditions for a shift in the organization of culture, away from the exclusive reliance on culture industries to manage these transitions of scale. Digital technologies do not “disintermediate” the distance between individuals and larger publics, but they have enabled alternatives to some of the existing forms of mediation—especially those related to finding, collaborating in, and disseminating knowledge and cultural goods. For publishers, broadcasters, record companies, film studios, and other cultural intermediaries, this is often a threatening process. Digital technologies have done more than just encroach on the productive roles once reserved for large-scale enterprises; they have broken open the carefully disciplined networks of distribution and promotion that make cultural goods available and visible in crowded media environments. Many of the current struggles over the use and regulation of digital technologies reflect the efforts of cultural intermediaries to reassert and extend these traditional roles.

The convergence of digital technologies evokes broad and, in many respects, competing visions of the digital future. It raises a multitude of questions about the technologies and laws that structure how people participate in and share their digitally mediated culture. This chapter examines the structure of participation that links culture industries to consumers, focusing on industry efforts to discipline that relationship through the control of new technologies. In Chapter 16, “The Ecology of Control,” I look more explicitly at shifts in the technological infrastructure and competitive landscape that underlie culture industry visions of secure digital delivery, from filtering technologies to digital rights management (DRM) to the emerging general architecture of trusted computing (TC).

## **culture industries**

Although the technology sector often gets the most attention in accounts of recent economic and social change (Castells, 2000; Rifkin, 2001), the content or copyright sector has also experienced prodigious growth and consolidation over the past three decades.<sup>1</sup> In the United States the copyright industries have grown at more than double the rate of the general economy, adding—by industry accounts—roughly \$800 billion to the GDP in 2002, and approaching \$100 billion per year in foreign sales (Siwek, 2002, 2006). Corporate consolidation, driven by the globalization of culture markets and by promised economies of scale and scope, has produced a sector dominated by interconnected oligopolies. In the United States, four firms sell 90% of recorded music, six account for 90% of film revenues, two dominate radio, five (and shrinking) own the cable TV market, four dominate cell phone services, and so on (Garnham, 2000; McChesney, 2004). Many of these separate markets are dominated by the same vertically and horizontally integrated giants—especially Sony, Viacom, Bertelsmann, News Corp, and General Electric.

Until recently, copyright industry growth had little connection to the growth of the Internet and personal computing. With the notable exception of software, which gained copyright protection in 1975, the copyright and information technology (IT) sectors followed different and, in important respects, incompatible paths of innovation. The IT sector privileged relatively open technical architectures that, over time, facilitated the transformation of the architectures themselves. The personal computer, in particular, grew out of a tradition of general-purpose computing that viewed computers as universal machines, capable of emulating any process. As computers became commoditized in the 1980s, advances in core technologies—microprocessors, storage, and memory, especially—became the primary market differentiators.

The culture industries, in contrast, have traditionally profited from innovation within stable *content formats*, delivered through relatively secure technological channels. These channels include the distribution of goods in the usual sense, but more broadly refer to business models that structure the sale and circulation of commodities in ways that prevent widespread secondary distribution, which would undermine primary markets for the goods. Ticketed exhibition (movies), bricks-and-mortar retail for material goods (books, CDs), broadcast to home devices (radio and television), and subscription services (magazines, cable TV) are all commodity systems that

successfully meet the condition of controlling access to content. The substantial cost of these infrastructures is recouped by selling variation within the format—the continuous turnover of new books, movies, record albums, and programming. Demand, for its part, is driven not by differences in capabilities (this year’s bestselling paperback is no more capable than last year’s) but by differences in the content and style of the individual works and by the interplay of those qualities with marketing efforts, genre conventions, and audiences.

All such business models require “metered access”—the capacity to deliver content on restricted terms. This condition derives from the peculiar characteristics of cultural goods. Since the rise of industrial-scale cultural production, cultural goods have been characterized by high costs of first production (writing a book or making a movie is costly), but comparatively low costs for every subsequent copy produced—low *marginal cost of production*. Under these conditions, producers need widespread distribution systems that can recoup initial investments and control mechanisms that can ensure that goods remain “excludable”—capable of being denied to others—as they circulate (DeLong and Froomkin, 2000; Odlyzko, 2001).

Excludability has traditionally been defined by two factors: law, especially copyright law, which accords owners a temporary monopoly on distribution; and, at a more basic level, the material characteristics of the media themselves that make the copying, redistribution, or exhibition of content costly or inconvenient. Whereas the legal remedies afforded by copyright provided an effective tool for regulating industrial competition, the control of consumers depended heavily on the materiality of media, which made infringement cumbersome. Other forms of excludability followed from the natural scarcity of certain kinds of distribution channels, such as television and radio spectrum. These overlapping legal and material barriers allowed the copyright industries to maintain an approximation of excludability for goods that might otherwise circulate at low marginal cost.

Where copyright infringement occurred, it was likely to be on an industrial scale, analogous to the production of counterfeit goods. Even in the early 1990s, copy culture still followed the rules of industrial production, split between illicit mass producers with elaborate black-market distribution channels (operating freely in many countries but in only limited ways in the United States) and craft practices confined mostly to individuals and small groups. Individual music sharing, for example, was still predominantly

grounded in analog cassette recording, made one at a time and passed along a low-bandwidth, high-latency “sneaker net” (a reference to the transactions among teenagers that typified the network).<sup>2</sup> Videocassette recording, photocopying, and software piracy operated within similarly split-level economies. Scale and commercial impact were usually the factors that determined exposure to the law: Large-scale copiers were plausible competitors to existing copyright holders; small-scale copiers, such as teenagers copying audiotapes, were arguably more limited in their potential commercial impact, and certainly more costly to trace and discourage.<sup>3</sup>

De facto freedoms to use, share, and circulate cultural goods were thus shaped by the costs associated with their control. Individuals could do little to compete with industrial-scale reproduction and distribution; by the same token, copyright holders could do little to police use below certain levels of social organization. The resulting zone of uncontrolled, noncommercial use had obvious social utility and gradually developed justifying political rationales. Tolerance for these secondary forms of distribution and use, especially in educational contexts, found a home within traditions of republican political thought that viewed the circulation of information and ideas as a positive social good—indeed, as a prerequisite of democratic culture. These claims were eventually formalized in fair-use and fair-dealing doctrines within copyright law. They found a home, too, in the development strategies of poorer nations that, as net importers of copyrighted materials, had incentives to maximize the flow of cultural goods at minimum cost. This was the case, notably, of the United States in the 19th century, which built its domestic publishing industry on the rejection of foreign copyright (Ben-Atar, 2004; Vaidhyanathan, 2001).

Since the British Statute of Anne (1709) first accorded rights to publishers rather than authors, copyright has favored an industrial cultural model that privileged scale of production and the control of the sale. The arrangement worked in part because neither could be fully or efficiently achieved. It left room for diverse political goals and public rights to be mapped onto the technological and economic realities of the media economy. These limitations underlie what Lawrence Lessig (2001) and other legal scholars have described as the historic balance of American intellectual property law, with its constitutionally mandated concern for the public good.<sup>4</sup> This balance always involved delivery channels that “leaked” at the edges of their respective markets, creating zones of hard-to-regulate use. In the United States, this

leakiness was embraced and codified in the concepts of “fair use” exceptions to copyright, which favored contemporary cultural and political commentary, and limited terms, which supported a relatively unencumbered dialogue with the past—the first U.S. copyright term was only 14 years, renewable once (since then, the term has expanded to the life of the author plus 70 years, or 95 years for corporate works). Although the balance between public and private purposes gradually shifted over time, the durability of the paradigm allowed institutions to emerge within certain technological and social niches that served public purposes, such as U.S. public libraries with their open circulation policies. As Jürgen Habermas and other historians of the public sphere have observed, liberal polities were the products of these conditions of public dialogue—of the circulation and use within society of information *about* society, outside the control of either the state or powerful private actors.

### **piracy and control**

As file sharing systems began to efficiently connect the media libraries of personal computer users in the late 1990s, the copyright industries hit the panic button. Industry associations for music (Recording Industry Association of America; RIAA), film (Motion Picture Association; MPA), and software (Business Software Alliance; BSA), as well as larger umbrella organizations like the International Intellectual Property Alliance (IIPA), invested heavily in public relations and lobbying campaigns to shape the terms of the larger debate about digital culture. Far from exploring the social role of leakiness in an open society, this campaign focused almost exclusively on piracy and its impact on creative professionals, framed by extravagant accounts of the imminent cultural “dark age” or “Armageddon” (Valenti, 2000) if stronger content controls were not written into law.<sup>5</sup>

For the industry groups, the analogy to material goods was and remains crucial: unauthorized use is synonymous with theft, unauthorized distribution with piracy, and the whole with social evils ranging from murder to drug abuse to terrorism.<sup>6</sup> Although surveys of vulnerable groups such as musicians revealed strong ambivalence toward file sharing (Rainie & Madden, 2004), RIAA testimonials by aggrieved musicians helped establish a backdrop of personal injury claims to corporate antipiracy efforts.

The role of file sharing and piracy in undermining structures of compensation for artists is a real concern, but also one that obscures the nature

of industry demands for a secure delivery channel. The copyright industries, in general, do an astonishingly poor job of compensating creativity. For the vast majority of authors, musicians, and other creative professionals, the prospects of significant returns from industry contracts are remote. As the musician Courtney Love (2000) noted in her widely read piece on fair practices and the music industry: “The 273,000 working musicians in America make about \$30,000 a year. Only 15% of American Federation of Musicians members work steadily in music.” Even successful musicians recoup only a tiny portion—in both real and percentile terms—of the revenue flows generated by popular work (Albini, 2002). For writers, the situation is typically worse: A 1981 report estimated average annual income at around \$5,000. Although RIAA began to identify and sue file sharers in 2003, collecting on average \$3,750 from settlements (as of February 2006, from 18,000 lawsuits, with 1,700 settlements by 2005), none of this money has returned to musicians, the allegedly injured parties.

RIAA can neglect to compensate musicians from the file sharing settlements because the suits are less a defense of fairness to artists than of a business model built around a certain kind of product and structure of compensation. Increasingly, that business model depends upon the production of “hits.” The music, film, and publishing industries have all become hit-driven industries, with a correspondingly uneven distribution of profits, and corresponding risks when the hits fail to materialize. Of the 459 movies released in the United States in 2003, 4% generated 40% of industry revenues. Of the 175,000 books published in the United States in 2003, only a few hundred received the “big push” of advertising, book tours, and payouts for table and window space in stores; in the end, 5% of titles accounted for 80% of revenues. RIAA estimates that only 10% of major-label albums make money. For video games—an industry experiencing both rapid growth and consolidation—the figure is closer to 20% (Spector, 2005).

The hit system has become both a cause and an effect of industry gigantism. In a market of 175,000 new books per year, only large publishers can afford the costs associated with promoting a book to best-seller status. In a crowded commercial film space, only large studios can spend the average \$40 million (in 2002) to ensure the commercial visibility of a movie in the U.S. market, or the \$75 million spent to boost the blockbuster prospects of a film like *Spider-Man 2* (promotion for *Spider-Man 3* in 2007 is reported to be \$150 million, on top of production costs of \$350 million). Only large

companies can absorb the high rates of failure associated with such promotion, or deploy the integrated “media mixes” that extend and cross-promote products across different media and sites of consumption.<sup>7</sup> The proliferation of media sources such as on-demand movie services and the Internet has reinforced this pattern, making visibility and audience attention into expensive and unpredictable commodities.

This enormous investment in the visibility of media within a saturated media landscape is a symptom of industry uncertainty about the quality of its investments. Despite the growth of a costly science of marketing and audience tracking over the past three decades, there is no formula for success in the market for cultural goods. From the distributor’s perspective, the mass audience for any particular good is a hypothesis constructed from highly fallible marketing techniques. Most industry bets prove to be bad ones. Marketing and market research, genre formulas, star systems, and the growth of media mixes and content franchises (with inevitable sequels and spinoffs) are the default strategies for pushing back against this uncertainty. The universal practice of these strategies, however, means that they confer no clear advantage, and simply raise the industry floor for costs of marketing and distribution.

This fragile structure of investment raises incentives for market concentration and the vertical integration of production and distribution. Both forms of consolidation dilute risk within a larger pool of bets and make it possible to amortize losses through global networks and across different media. The deregulation of media and communications industries in the 1980s and 1990s abetted this process, allowing—inter alia—the reemergence of vertical monopolies between studios and theater chains in the 1980s, and between television networks and production studios in the 1990s. Although such deregulation was almost always justified in terms of alleged superior efficiencies of scale in meeting consumer needs, it also reflected industry concern that size was the only antidote to the irrationality of their markets—to their inability to predict consumer taste or, consequently, returns on investment.

As market concentration ran its course in the 1990s and early 2000s, leaving a handful of companies in control of most areas of media production, other strategies for protecting corporate investment grew in importance. Stronger and more pervasive intellectual property laws became a more explicit industry priority, leading not just to longer copyright terms but to new proposals covering data, broadcasts, web transmissions, encryption

tools, and other moments in the life of the cultural commodity. Technological mandates (the broadcast flag, spyware, “trusted computing” measures) have been another focus of industry activism, with the common purpose of eliminating points of leakage in the commodity chain and strengthening contractual agreements with consumers. Such mandates are attractive because they circumvent the high cost of enforcing intellectual property rights through the traditional remedy of legal action.<sup>8</sup>

These strategies extend the cultural commodity chain in two key respects: they promote the control of goods through to final consumption, especially via the shift from sales models to technologically enforced licenses that can circumscribe use indefinitely; and they commodify much smaller increments of use, as digital technologies permit the *debundling* of different uses and features (Szabo, 1997). Taken together, these measures outline a concept of copyright different from that associated with the compensation of artists or, in the European context, the “moral rights” of authorship. In Drahos and Braithewaite’s (2003) terms, this is the architecture of “financier’s copyright,” which “rests on the view that copyright must serve the financier of copyright works by guaranteeing rights of exploitation in whichever markets the financier chooses to operate” (p. 176).

### **alternative structures**

The file sharing debate looks different when viewed from the perspective of financier’s copyright and the hit structure of the industry. File sharing, in this context, is not a challenge to sales in general or to artists’ livelihoods in particular—in fact, the current evidence for such harm is weak (Geist, 2005; Pollack, 2005; Pedersen, 2006). But it does put pressure on the top-heavy, promotion-driven investment structure of the major record labels, which like other hit-based industries rely on tight control of the commodity chain during their brief window of cost recovery. File sharing, in this context, undermines the ability of the industry to recapture its investment in shaping and priming the marketplace. It makes hit-making a riskier and more costly business.

Several recent studies (Oberholzer-Gee and Strumpf, 2007; Pedersen, 2006) have begun to document this hit-centered dynamic on file sharing networks—from the very rapid online dissemination of hits to a (posited) relative shift of revenues from wealthier to poorer artists. The growth of small independent labels, characterized by lower promotion budgets and better compensation models for artists, provides some evidence of organizational

adaptation to this changing environment. Whether the growth of independents will translate into a larger cost structure, value-added model, and reinvigorated fan culture for music that can compete with “free” distribution is an important question for the next few years.

Peer-to-peer (P2P) enthusiasts often point to a different virtue of file sharing networks, rooted in their more efficient searching and sampling of the “long tail” of media history (Anderson, 2004). Chris Anderson’s “long tail” refers to the vast majority of cultural artifacts that fall outside the narrow promotional structure and short time horizons of industry hit making—film archives and music and publishing back catalogs. Much of this work is not just invisible in the commercial marketplace, but is also unavailable because of how promotion shapes distribution and stock. All but a few high-grossing and classic albums fall out of production within a year or two.

File sharing has been an unreliable but, to date, largely unmatched resource for connecting this record of cultural production to niche audiences. It has been effective both for older, out-of-production works and for areas of “amateur” production such as house music and techno, which have little or no formal distribution structure. As Jonah Peretti notes (Chapter 9, this volume), these informal and free channels of circulation have the capacity to magnify attention, leading to sudden, sometimes massive, freely distributed “hits” that industry channels do not efficiently capture. Apple’s iTunes list of most-downloaded songs—one of the few ways of comparing standard and rogue hits—regularly reflects the products of these viral publicity networks (Dean, 2004).

In spite of file sharing’s obvious potential for disrupting distribution channels, there is no clear evidence that it has diminished sales for music or other copyrighted goods. The past several years have been a period of volatile but sustained growth for most of the copyright industries: U.S. film industry revenues grew by 7% over the past six years (with a modest reversal in 2005); the often-lamented field of book publishing averaged 5% growth.

The music business is the major counterexample, having suffered declining CD sales since 2000 and a slow but steady erosion of the retail sector. The factors contributing to this decline are numerous and difficult to isolate, however. They include the 2001–2002 economic downturn (which also affected books and film); the growth of competitors for discretionary media spending, such as DVDs, video games, and cell phone services; the end of the elevated sales that accompanied the transition from vinyl to CD, as

consumers converted their collections; and the debundling of albums into digital singles, which has diminished the dominant unit of sale. In all likelihood, the poor management of talent by the majors must be included, as the hit structure distorted the feeder system for new artists.<sup>9</sup> The growth and relative health of the artist-friendly independent labels suggest that the latter should not be underestimated.

Market impact studies offer contrasting interpretations of how and why people use file sharing services. Some privilege the substitution effect with respect to CD purchases, in which file sharing represents lost sales; others emphasize its use in sampling music later purchased in stores. In six years since the initial round of studies surrounding the Napster case, this debate has not greatly advanced.<sup>10</sup>

It is safe to assume, however, that copy culture will thrive as long as it offers significant value over commercial markets—variously in terms of cost, ease, flexibility of use, or availability of material. In this calculation, the cost of file sharing to users is not zero: Managing downloads on P2P networks has traditionally been time consuming, unreliable, and occasionally dangerous (Steve Jobs of Apple once equated file sharing with working for the minimum wage). To date, however, there have been few industry attempts to compete on these terms. There has been little downward pressure on music prices (in distinction from DVDs, which are sold in a wider range of pricing tiers). Major label experiments with digital distribution models have been tentative and—until very recently—focused on creating tightly controlled subscription services that could circumvent Apple/iTunes. The most prominent example was the reformulated Napster, launched in 2003. It has had only modest uptake, with 500,000 subscribers in January 2006. Recently, the perception of crisis has generated interest in alternative approaches. Independent labels have gravitated around the more aggressive eMusic service, which both undercuts iTunes/majors pricing and dispenses with the DRM controls favored by the majors. In 2007, faltering major EMI agreed to distribute its catalog through iTunes without DRM encumbrances, signaling a possible wider retreat on the issue of control, if not on pricing.

These experiments are partial recognitions of the need to narrow the value gap between commercial and informal/illicit distribution, but they have not yet produced a stable business model. Without clear guideposts, the culture industries have made gestures in many directions—punishing file sharers in order to raise the perceived costs of copyright infringement; vacillating

on pricing arrangements for music download services; adding surveillance software to CDs; dropping DRM; developing new, more elaborate protection strategies; and in general working toward technical and legal mandates that can buttress their traditional business models. No coherent way forward has been articulated.

### **the new bargain**

Technologies that lower the cost of production of existing content formats or that extend variation within them are a source of renewal for the culture industries: they enable the recycling of old content in new forms. The music industry's orchestrated transition from the long-playing record to the compact disc is a notable example: It maintained continuity with the album format and the retail distribution channel while offering enough new features to justify, for many consumers, the replacement of existing LP collections. Although this transition produced a massive sales boom in the 1990s, the digitally formatted, unencrypted CD standard laid the foundation for the consumer-driven digitization of music in the late 1990s.

Technologies that transform channels of distribution are harder to anticipate and assimilate, and often become occasions of conflict between old and new cultural intermediaries. Marshall McLuhan's (2001) dictum that "the content of a new medium is an old medium" suggests the basis of this conflict. Although McLuhan was speaking broadly of ways in which old media frame thinking about the uses of the new, his statement also encompasses the literal issues of content ownership that often dominate the early days of new media. This pattern has been reproduced many times: Radio broadcasting in the 1920s routinely made unauthorized use of recorded music; cable television in the 1960s and 1970s similarly retransmitted broadcast television programming. In the 1980s it was satellite television's turn with content taken from broadcast and cable sources. In the 1990s webcasting followed the same path. In each case, new distributors "pirated" the content of existing distributors, often taking advantage of ambiguities in copyright law regarding new technologies. In each case, conflict between distributors resulted in statutory compromises that permitted new distributors to access the content of old distributors for a set fee, via compulsory licensing arrangements implemented in copyright law.<sup>11</sup>

As music and other digitized goods circulate widely on the Internet, a significant body of scholarship evokes these parallels in support of a new

political bargain between old and new distribution channels. Most of these proposals are designed to permit P2P networks and other forms of informal digital distribution to continue to develop, while recouping revenue for producers and artists through taxes or compulsory license models.<sup>12</sup> They are designed, in other words, to enable a political adjustment of costs instead of a technological fix, which might constrain future technical and cultural innovation.

But digital media are distinct from earlier new media in ways that make a political resolution difficult. Earlier political bargains over the use of content (e.g., between record companies and radio broadcasters) were facilitated by the fact that distribution channels were scarce and capital intensive: Profit-sharing deals and structures of accountability still involved relatively few corporate owners, whose actions could be regulated and policed. The deals themselves primarily affected distributors, who operated their own relatively secure channels for content delivery with little risk of subsequent redistribution or reuse of content.

Earlier new media were also often modally distinct in ways that permitted relatively narrow bargains between different distribution channels. Buying a record, for example, meant buying a physical artifact that permitted certain kinds of use—for example, on-demand performance in combination with a bulky, stationary record player. This differed significantly from the ephemeral experience of radio, which supported fewer expectations of ownership, repeatability, and personal collecting. Although the two channels competed at one level for music audiences, they offered different structures of participation for consumers, which in turn supported different markets and revenue models. For much of the 20th century, communications policy emphasized and reinforced these distinctions, dividing the range of communication networks into as many models of practice: telecommunications services, information services, broadcasting, mail, and so on.

Early policy thinking about the “information superhighway” often advanced a broad agenda that included not just the digital delivery of movies, but also improved education, expanded political participation, greater international cooperation, and a host of other social goods.<sup>13</sup> However, it tended to view commercial investment as a prerequisite of those other uses and to assume that those uses were compatible with or at least separable from the commercial infrastructure—much as public broadcasting operated in parallel to commercial broadcasting. Taking this view, regulatory and tech-

nological solutions should first satisfy the wishes of commercial actors, notably through stronger legal protection for digitized content. Beyond the goal of universal access to broadband services, however, the requirements of a rich digital public culture remained underspecified and tended to draw heavily on the examples of existing public media and educational institutions. These analogies supported the notion of segregated functions for the media in public life with correspondingly separate infrastructures for content production and distribution. These assumptions were congenial to the industry view that the digital transition was primarily an opportunity to scale up business as usual—multiplying cable channels and creating frictionless markets for media services. Under a segregated services model, the other purposes of the public sphere were not their responsibility.

In practice, the combined action of the personal computer and the Internet undercut the separation of distribution channels. It did so not just for different forms of cultural expression—music, video, text, and so on—but also for the modal differences that shaped how and where such goods were consumed. The growth of individual capacities for large-scale distribution meant that new social bargains were no longer a game between industry rivals or a negotiated division of labor between established sectors (e.g., commercial and educational). Any new social bargain over use must be made with consumers.

This requirement makes the eventual scope of a new social bargain broader and more complicated, as it necessarily encompasses many more varied forms of expression and use. It is unclear where the borders of such an agreement would lie, either with respect to the forms of cultural production it contained or the implications it would have for the broader functions of freedom of expression and public life. A solution to the problem of one industry can have repercussions across the public sphere, affecting not only the circulation of music or movies, but also broader questions of access to knowledge, and of related capacities to speak, share, use, and innovate (Lessig, 2004; Benkler, 2007; Cohen, 2007).

As with earlier media revolutions, the constraints associated with the “old media” are falling away without the articulation of a stable new model. Despite enormous investments in DRM software, micropayment strategies, trusted computing architectures, and other long-sought components of a commercial network infrastructure, the Internet-based distribution of old media remains embryonic. From the perspective of content owners, there are

far too many ways in which content can proliferate—through the Internet, within computer systems, across home networks, on the increasing number of media-capable devices, and so on. Digital signals can be captured at many points within the existing network architecture. Analog signals can be digitized at the point of delivery (the so-called “analog hole” in discussions of digital television). Any weakness in the digital distribution channel can quickly scale across the Internet, turning one copy into millions. For these reasons, the content industries have been extremely wary of new social bargains around digital use. Instead of a political solution that extends the new capacities for individual production and distribution, the content industries have preferred to reengineer the technologies themselves to ensure a future of secure channels for digital culture.

In the end, building a secure channel requires that general-purpose computing give way to a much more carefully circumscribed system and network architecture designed to enforce copyrights and contractual agreements. Because this shift implicates related layers of technology and social practice, it requires changes to the hardware, software, laws, and ultimately social norms and expectations associated with a wide range of cultural practices. Because digital technologies so thoroughly disembed the rights and expectations we associate with existing media technologies, this shift invites a thorough reconceptualization of the objects of culture—of how we own and use texts, for example, once ownership and use is no longer circumscribed by the physical characteristics of the book, or of how we relate to recorded music, when the ownership of CDs gives way to contractual agreements governing the use of digital music services.

How this reconceptualization occurs depends heavily on who is empowered to innovate with digital content. As more capable digital infrastructures are built, the balance of power between cultural producers, intermediaries, and consumers is shifting, with broad consequences for cultural participation, freedom of expression, and capacities for cultural and technological innovation.

Different cultural artifacts and media have supported (and usually required) a diverse collection of cultural practices and institutions. In many respects, this allowed different media to fulfill distinct social functions and for those functions to acquire the recognition and protection of law. The rights accorded books as a durable record of culture were different from those accorded broadcast television, which until recently was an

ephemeral good from the consumer's perspective, limited to single viewings. The digital transition is erasing these social textures of different media. E-books can be packaged with restrictions that close off their public utility as unpredictable vectors of dissemination and knowledge—no resale, no marginal notes, no cutting and pasting without authorization. Now the video record no longer needs to be as ephemeral, or as difficult to categorize and search.<sup>14</sup> The enabling technologies for new forms of expression, dissemination, and cultural memory continue to drop rapidly in cost. A vast quantity of creative work is produced and distributed for free—video, animation, journalism, software. The sustainability and scalability of much of this work remains an open question, but one that has remained open now for over a decade, subsisting and growing on a wide range of commercial and noncommercial incentives. This proliferation suggests a basic fallacy at work in the equation of cultural creativity with the health of the content industries or with quantitative measures of cultural goods produced or sold. Expressive forms and their modes of circulation change, as do the institutions that mediate them. Few mourn the passing of the piano player or measure the health of American culture by its number of original operas. The fragile economics of blockbuster films and hit albums suggest a similar fallacy, and should not drive debates about creativity or dictate choices about the basic technological infrastructures that support it.

In the early 1960s, when Jürgen Habermas (1988) wrote about the “refeudalization” of the contemporary public sphere, he was warning about the breakdown of the complex social, economic, and technological arrangements that underwrote practices of public dialogue. Among his most concrete worries were the concentration of ownership of the channels of mass communication and the rise of a model of passive consumption for media content. He saw public discourse increasingly dominated by the consumption of packaged views, administered by a shrinking number of powerful corporate intermediaries. Although the right to free speech remained politically sacrosanct in the societies he described, it was an increasingly atomized right, divorced from the conduits of speech that mattered most in contributing to public discourse. Although there was no conspiracy to undermine dissent or diversity of views, there was a gradual alignment of media interests with the state, as media entities grew and began to influence the state and as the mass media became the chief stage for the display and legitimation of authority (the root of Habermas’s analogy with feudalism). Over time,

Habermas argued, this process eroded the discursive habits and independent capacities for judgment that gave substance to democracy's formal exercise in elections.

When James Boyle (2003) and other contemporary legal scholars warn that the expansion of intellectual property rights represents a "second enclosure movement," analogous to the privatization of English common land, they are describing the capture of legal and regulatory processes by the content industries (and also by patent-based industries in the life sciences and information technology). When I explore, in Chapter 16, the mix of technologies and laws that underwrites visions of a secure distribution channel for media, I am describing efforts to change the *conditions of possibility* of culture, giving content owners new power to make far-reaching decisions about what can and cannot be done with cultural materials. One need not subscribe to Habermas's political psychology or to Frankfurt School accounts of mass culture to understand the power of these efforts to shape social expectations and norms—and of technical infrastructures, in particular, to naturalize sets of prescribed uses. What matters from this perspective—and manifestly also from the culture industry's perspective—is not the interpretive freedom that people exercise in their capacities as cultural consumers, or the endlessly inventive margins where cultural roles are disputed and new practices emerge (which in any event are now mined as new sources of industry content), but rather the capacity to safeguard the industrial model of cultural production against obsolescence and to extend its relatively strict division of roles. Content industries maintain a "structure of participation" whose ideal form runs one way from closely knit production and distribution networks to carefully primed consumers. The point here is not that some technologies underwrite more engaging forms of experience than others—as McLuhan argued for television and Sven Birkerts (1994) for books, for example—but rather that the nature of that engagement is carefully controlled in both instances. What relates television and the book, for our purposes, is not that the book enables a more demanding or reflective engagement with ideas than the television, but that—in the current environment—neither permits creative appropriation by or substantive dialogue with the creator's contemporaries in ways that do not also pass through the culture industry intermediaries. As Gregory Crane notes (Chapter 3, this volume), Plato's complaint that writing is mute to our inquiries bears deeper consideration in our era. In blogs, remix culture, and other distributed aspects of digital

culture, we see the growth of a more participatory, less regimented, real-time cultural dialogue.

The trends that Habermas and Boyle describe follow accelerating curves through the modern era—Habermas’s tracking the rise of the mass media; Boyle’s mapping the spread and intensification of intellectual property rights regimes. Both align with broader stories about the growth of industrial society and the transition to a network society, an information society, a knowledge society, or its many other cognates. These linked processes have been incremental enough and slow enough to permit backward glances toward moments of balance, in which the margin of unregulated use was broader—to pre-1976 copyright law, which required the explicit registration of copyrighted materials, or to a culture of print, radio, and TV production dominated by small owners (the 1980s suffice for all three). Looking forward we have much less assurance. Not because certain claims won’t be predictably advanced—such as the need for a further Copyright Extension Act, or for other views of intellectual property that increasingly resemble natural rights—but because we are caught in an old-fashioned contradiction that we cannot yet see through: the triumph of the culture oligopolies at a moment when their necessity is coming to an end.

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## notes

- 1 The terms are often used interchangeably: content industries, in reference to the production and distribution of cultural goods, and copyright industries, in reference to the legal instrument that defines rights of ownership and control over their products. The major actors in this category are the motion picture and television industries, the recording industry, the publishing industry, and the commercial software industry (which benefits from copyright protection). I prefer the term "culture industry," with its heritage in critical accounts of cultural agency.
- 2 The "sneaker net" and the search and latency issues associated with it was analyzed by Microsoft software engineers Biddle, England, Peinado, and Willman (2002).
- 3 As in Basic Books's successful 1991 suit against Kinko's copy shops for copyright infringement in the mass production of course packets. In the wake of the decision, the reproduction of course packets fell back on the less efficient but probably no less prevalent sneaker net.
- 4 See especially Section 8 of the Constitution: "The Congress shall have power . . . to promote the progress of science and useful arts, by securing for limited times to authors and inventors the exclusive right to their respective writings and discoveries."

- 5 Such rhetoric is not new. Similar language was applied in the past to other technologies that threatened market incumbents: the player piano, radio, television, and (by Valenti himself) the VCR.
- 6 The terrorism charge—drawn in this case from Interpol, which like other national and international police agencies has been enlisted in this fight—is reported here: [http://www.hollywoodreporter.com/thr/article\\_display.jsp?vnu\\_content\\_id=1000528473](http://www.hollywoodreporter.com/thr/article_display.jsp?vnu_content_id=1000528473)
- 7 For an account of this commercial structure in the United States and globally, see Miller et al. (2001) and Litman (1998). For a breakdown of the production costs of *Spider-Man 2*, see Thomas (2004). On marketing in the book industry, see Mandell (1995). On the media mix, see Ito (Chapter 6, this volume).
- 8 Efforts by RIAA to scale up legal enforcement has led to a variety of legal shortcuts such as the practice of sending “pre-lawsuit” settlement letters to suspected infringers and the (so far failed) effort to bundle individual infringement cases in the courts.
- 9 See, for example, *Frontline’s* report on the impact of corporatization and consolidation of the music industry on the cultivation of new talent: <http://www.pbs.org/wgbh/pages/frontline/shows/music/perfect/corp.html>
- 10 Nearly all studies have found a mix of such uses, including Lenhart and Fox (2000), Rainie and Madden (2005), and Oberholzer-Gee and Strumpf (2007). The range of early Napster-related reports is parsed by Liebowitz (2002); see also Pollack (2005) for a survey of recent work.
- 11 Timothy Wu (2004) calls this pattern the basis of the “classic communications regime,” which regulated not authors but industrial competitors. Modern copyright law deals preponderantly with these industrial relationships. See also Litman (2001).
- 12 For example, the Electronic Frontier Foundation’s advocacy of a “voluntary collective license” for a blanket right to share music (EFF, 2004), or William Fisher’s case for a compulsory license supported by a tax on Internet access and/or blank media (Fisher, 2004).
- 13 See, for example, the U.S. Patent and Trademark Office report on “Intellectual Property and the National Information Infrastructure” (Lehman, 1995), or Al Gore’s speech to the “Superhighway Summit” (Gore, 1994). Also Goldstein (1994).
- 14 For both the e-book example and an account of Brewster Kahle’s television archive, see Lessig (2004).