

## Preface to the Paperback Edition

Just three weeks after I handed over the copyedited proofs of *Wired Shut* to MIT Press back in 2007, took a deep breath, and leaned back in my chair, Apple's CEO Steve Jobs issued his "Thoughts on Music"<sup>1</sup>—a keenly crafted, methodical repudiation of the "digital rights management" (DRM) strategy of his music industry partners. Jobs proposed that it was time for them to drop copy protection entirely. "Imagine a world where every online store sells DRM-free music encoded in open licensable formats. In such a world, any player can play music purchased from any store, and any store can sell music which is playable on all players. This is clearly the best alternative for consumers, and Apple would embrace it in a heartbeat." He noted that DRM had failed to slow the peer-to-peer file-trading of music, had irritated customers by hobbling the transition to viable digital services, was and always would be vulnerable to hackers, and was meaningless when most popular music could still be purchased on CD with no copy protection whatsoever. Of course, Jobs was condemning precisely the kind of copy protection that he had helped enforce and make commonplace via the Apple iTunes store—though if we are to believe him, it was an obligation imposed by the labels. Should the labels allow Apple and others to sell music in unprotected formats like MP3, he surmised, they would profit from the flood of distribution opportunities that would emerge.

Though Jobs' statement did not by itself transform the music industry's tactics, it can stand as a symbolic marker of the sea change that followed. In April 2007, Apple announced a deal with EMI to sell much of its music catalog without technical restrictions, at a 30 percent markup. (This deal was certainly already in the works when Jobs shared with us his "thoughts.") Apple subsequently grew from market leader in digital music sales to market leader in music sales of any sort, helped perhaps by the EMI deal, but much more by the dearth of real competition online or from brick-and-mortar music chains, the descent of which was only hastened by a

collapsing economy in 2008. The other three major labels did respond to Jobs' call – though, at first, not exactly in the way he might have hoped. In early 2008, all four major labels granted Amazon license to sell their music in the unprotected MP3 format; Apple's market dominance had given it enough clout to refuse the record companies' demands for variable pricing, so they backed another horse. Though Amazon has not managed to take a sizeable bite out of Apple's numbers, the mere presence of Amazon may have convinced Apple to change its tune; in January 2009 Apple announced that its entire catalog would be free of DRM also, but at a three-tiered pricing structure determined by the labels.

So was DRM dead? And, would I have a book on the cultural and political implications of DRM hitting the bookshelves just as DRM itself was being shelved? The changes in the music industry certainly seemed to point in that direction. Once established vendors like Apple and Amazon could offer music without technical constraints, consumers were no longer forced to choose between buying legitimate but locked music or taking their chances on the peer-to-peer networks. An array of artists, some newly freed from their major label contracts, began experimenting with alternative models of distribution: Radiohead's 2007 experiment, in which the band allowed buyers to set their own price for *In Rainbows*, was only the most visible. MySpace, now owned by News Corp., added the ability to purchase the songs that musicians great and small were streaming for free over the social network. Universal Music partnered with Nokia on "Comes with Music," a year of unlimited downloads free with a Nokia phone, with Universal recouping a portion of the sale of the phones. Though the Nokia downloads do come with DRM restrictions, it was just another sign that the music industry was loosening their tense grip on a business model that depended on tight control of the musical commodity.

During this same period, DRM had soured in the eyes of music and technology enthusiasts, and even with the broader public. In 2005, Sony BMG experimented with a more aggressive scheme to prevent duplication by secretly installing a copy protection application on the user's computer that functioned at the root level of the operating system. Critics discovered that this "rootkit" made users' computers potentially vulnerable to malicious spyware and viruses, forcing Sony to recall the discs. (There was enough outrage that, at a Federal Trade Commission hearing on DRM in 2009, even proponents of copy protection agreed that buyers should be made aware of such measures.) In 2007, in an echo of the DeCSS case discussed in the book, the AAC3 encryption protecting Blu-Ray discs was compromised, and the "09 F9" decryption code was widely circulated

online. When users of the Digg bookmarking system began linking to the offending code, Digg found itself threatened with a Digital Millennium Copyright Act (DMCA) lawsuit. But in a twist, though Digg initially complied by removing the links, users campaigned to keep the links posted, and Digg reversed its position and reinstated the links, defying the cease-and-desist request. A lawsuit against them was not pursued.

This distaste for DRM came alongside an increasing support for more flexible models of copyright. Creative Commons licenses have become an established and recognized alternative to the presumed default of copyright restriction. As just one sign of its now widespread legitimacy, in December 2008, then president-elect Obama opted to make the entire contents of his Change.gov website available under a Creative Commons license—and announced it as a positive feature.<sup>2</sup> The network-based peer production model championed by Yochai Benkler in *The Wealth of Networks*, with its more pliable notions of information ownership, has found widespread purchase not just in the tech community but also in mainstream business circles. Wikipedia, now the most popular reference source on the Internet, has long depended on a GFDL license for the content its users help produce: a “copyleft” license that permits any and all reuse, so long as the reusers extend the same courtesy with their work. In 2009 the Mediawiki organization that oversees Wikipedia voted to pair this with a Creative Commons license with similar permissions. “Open access,” an emerging call for publicly funded research (and, more broadly, scholarship) to be made more readily available online, has pressured academic publishers to loosen their copyright policies so that authors may retain more distribution rights for themselves.

The music industry left DRM behind not because it failed to curb peer-to-peer downloading, but because it’s costly—not just financially, which it is, but also in the eyes of the public. Consumers of music and entertainment have shifted how they expect to get content online. Artists and, increasingly, distributors are rethinking their business models. Users are frustrated by the difficulties DRM imposes and the ways in which it can be misused. In the terms I use later in the book, the effort to establish a technical intervention like DRM requires both political mobilization and cultural legitimation. The attempt to culturally justify DRM, as the salve to the widespread Internet piracy that would otherwise decimate the business of culture, has faltered.

Still, DRM is far from gone. If anything, it is more established than ever, through the persistence of the political and economic mobilization that brought it into being. Despite the new deals with Amazon and Apple, DRM

remains a lingering hope for the music industry. The dream of perfect control has given way to a more modest desire to “nudge”<sup>3</sup> consumers towards lawful and, more importantly, profitable behavior. As they experiment with new business models—subscription, advertising-supported, hardware-subsidized, surcharges attached to Internet service—these technical ways to regulate or track the circulation of content appear necessary. Or as the senior vice president of technology for the Record Industry Association of America (RIAA) put it in 2008, “(Recently) I made a list of the 22 ways to sell music, and 20 of them still require DRM.”<sup>4</sup>

If we look beyond the music industry, and especially if we expand our definition of DRM to include a broader category of “technical protection measures,”<sup>5</sup> the picture is bleaker still. In online and platform gaming, video games are fitted with a variety of DRM systems that not only prevent copying, but also bind the game to proprietary hardware or to the terms of the end-user agreement. Ebook readers, including the Sony Reader and the Amazon Kindle, use locked files and proprietary technical protections; other ebooks obey the use rules that can be added in the Adobe PDF format. Video streaming technologies, from Adobe’s Flash to Microsoft’s Silverlight to Apple’s Quicktime, continue to incorporate technical protection measures, often in concert with the operating system.

Perhaps most important, the array of smartphones now available nearly all depend (with the exception of those using Google’s Android system) on a locked platform business model. Beneath the massive popularity of the iPhone is an ongoing battle between Apple and those who “jailbreak” their iPhones so they can use service providers other than AT&T or load tools not certified as part of Apple’s App Store. We probably should bring a dose of skepticism, then, to Steve Jobs’ “Thoughts on Music” back in 2007, in light of the business model his iPhone depends on today.

DRM as a system exerts control over use by controlling what devices can be used. In practice, it has proven more effective at the second than at the first. Apple is now the biggest music retailer in the world and the maker of the most popular music device in the world. Certainly this was in part the result of their quality design and savvy marketing. But did the iPod succeed *despite* the burden of DRM imposed by the record labels, or did DRM in fact *help* vault Apple into this position, using the popularity of the iPod to beat back competitors to the iTunes Music Store?<sup>6</sup>

New firms attempting to carve out a space for themselves in this contemporary market, even if they hope to pursue an alternative model of information delivery and copyright control, often find themselves bound up in this lattice of alliances and shared paradigms. As an example, in

January 2007 Netflix introduced a feature for subscribers to their DVD delivery service to stream certain films directly to their computers. This “Watch Instantly” function came to the PC first, then to the television screen via an LG set-top box; but it was nearly two years before Mac users could also enjoy the service. The reason was that Netflix had to accommodate both the studio demand for DRM and the hardware business models that take strategic advantage of it. On the PC, Netflix could wrap films in Microsoft’s PlayReady DRM. The LG player could be built according to specs similar to DVD players. But Apple would not license its FairPlay DRM to third-party companies. Netflix had to wait until Microsoft developed Silverlight, a video compression plug-in with DRM built in, designed for web browsers that work on both PC and Mac systems. Apple’s business model of linking content to platform initially kept Netflix away, until Microsoft’s business model of designing DRM into everything trumped it. *Q.E.DRM.*

The effort to discursively posit DRM as the solution to piracy may have failed. This does not mean that its deeper aspiration, to link control and commerce through technical means, goes away. There will always be those who hope to manage the circulation of information, whether for politics or profit; we have invented, and largely accepted, a new road map for that information choreography, and the political, institutional, and discursive terrain has been reconfigured to allow, and promote, these kinds of restrictions.<sup>7</sup>

If we think about DRM not as a technology but as a logic, then the concerns expressed in this book remain vital for understanding how information is governed in the context of digital, networked, and mobile technologies. Jonathan Zittrain points to one element of this logic, the “tethered applanization”<sup>8</sup> of consumer information technologies: our devices are increasingly locked to networks and platforms, updated remotely by their makers, and inhospitable to user modification. The shift in online video from downloading to streaming depends on codecs and plugins that, while nearly invisible to the user, both frustrate copying and lock the content to the ads embedded in it. Music formats that proudly forego DRM restrictions, but retain the ability to attach metadata information that identifies the user and the price point, make it possible to track where the content goes, and allow a price to be assigned to that movement. In many ways we’ve already embraced the underlying logic DRM depends on—technologies that we use but are not our own, content we lease rather than buy, interfaces that closely manage our commercial and experiential engagement with information.

These forms of tethering, watermarking, and fingerprinting seem to be more palatable to users when they arrive as an organic part of a new technology, rather than being imposed on a technology already in existence. This mirrors the discussion in chapter 6 of the book on why copy protection on DVDs caused less of a public outcry than attempts to impose copy protection on CDs. A new device like the iPhone or the Kindle, or better yet, a wholly new technological form, can be introduced with an emphasis on its features; its limits often get taken for granted as mere facts, simply “how it works.” And, as Kieran Healy put it, “the success of new technologies tends to obscure the choices made about them.”<sup>9</sup> As we begin to acclimate ourselves to a world of media “platforms,”<sup>10</sup> that not only stream content to us but also promise to always have it ready and waiting, we forego storing content we care about on our own devices because we believe we can always play it on demand from the source. We are opening ourselves to the possibility of even more intricate and invasive rules and regulations about what content we can access, how it comes to us, what we can do with it—and how today’s access rules may not be tomorrow’s. And, not only is copy protection inexorably becoming a matter-of-fact part of the delivery of information, the part it plays is obscured from the view of consumers and critics, simply by becoming pedestrian.

This vanishing of DRM is important. Whether it’s being submerged in code and circuitry, removed in particular contexts and business models, declared dead in the blogosphere, splintered into a confusing array of lesser technical interventions, or built quietly into new technologies and smoothed into everyday practice—technological regulation is slipping off the table as political question. The DRM debates of the mid-2000s, while revealing of the particular concerns around the emergence of media culture online, also made momentarily visible the paradigms that always exert pressure on the flow of public discourse. They point to a vital set of questions that, in time, will get harder and harder to ask. As a digital culture emerges, what new roles for culture providers are being imagined, established, and affirmed? What kinds of economic and legal rights and obligations are being instituted? What norms and assumptions are they being fitted with? And how do the designs of particular information technologies instantiate or distort these ideas and ideals?

I believe we are witnessing not only an increasing turn toward regulation enacted in a technological form, but also a corresponding convergence of the content and technology industries that together provide the information landscape in which our public culture must thrive. To the extent that those who distribute information and culture powerfully shape

who gets to speak, how they are heard, how their contributions are valued, and what is protected or censored, the technologies they design matter immensely for cultural participation, expression, and innovation. And with that convergence, copyright law and the ideas behind it are being subtly redefined.

The debates about digital copyright have too often been narrowly focused on the cases and controversies, the pros and cons of particular laws and judgments, the implications of particular cultural practices. This issue needs to be seen as organically part of long-standing questions about media, culture, democracy, and public discourse. Historically, those who have thought about the way public discourse is shaped have paid too little attention to the technological, more interested in the (admittedly important) ramifications of the law and the market. Technology appeared either as cause or circumstance, usually only when it was new, but almost always as a thing apart from history, social context, or cultural meaning. Only now are some scholars beginning to combine a materialist examination of technology with a sociological inquiry into contemporary changes in cultural production and information access.<sup>11</sup>

Today, questions about media and public discourse must take the technological to be part of the terrain upon which expression occurs, and must make it a part of the analysis in every inquiry: how the design of information technologies shapes media access and the flow of culture,<sup>12</sup> how debates about technical infrastructure are very much debates about the contours of public life,<sup>13</sup> how the design of software now plays a part in the mechanisms of gatekeeping,<sup>14</sup> how democratic participation<sup>15</sup> and semiotic agency<sup>16</sup> are partially structured by the technologies through which citizens take part—in other words, “the ways in which citizenship norms, rights, obligations and practices are *encoded* in the design and structure of our increasingly digital surroundings.”<sup>17</sup>

Only now are we thinking not only about how top-down rules structure cultural practice, but how groups of people who congregate online, “recursive publics” in Chris Kelty’s terms, manage the “the radical technological modifiability of their own terms of existence.”<sup>18</sup> Just as Kelty’s free software geeks bring themselves into being as a self-governing public through the construction of codes, contracts, and constitutions, a parallel process is happening on a broader scale as we code and re-code the legal and technical frameworks for public discourse in a networked environment.

The debates about digital copyright and DRM draw attention to the way that sociotechnical arrangements are forged, over time, as political and economic allies come into being and agree on a shared paradigm, as legal

categories are coordinated with or foisted upon prevailing practices, and as cultural possibilities emerge and are rehearsed into familiar norms. It may be that, with even more hindsight, the push for DRM will appear an aberration, a reactionary blip in the reconfiguration of culture around digital distribution. But this will be only to the extent that another configuration, with its own political, economic, legal, and cultural foundations, can successfully emerge—not just free information flowing along frictionless networks, but Google Books and a formalized settlement with authors, Creative Commons licenses tested in regular courts, Wikipedia with increasing cultural legitimacy as a viable resource, open access publishing backed by legal mandates, artists cooperatives embracing a deeper engagement with amateur fan remixers, and political bloggers joined in stable institutional partnerships with codes of best practice in hand.

In fact, we err even in treating these as polar opposites: owned or free, centralized or distributed. As Eva Wirtén has argued, “a more constructive way to approach these pairs is to envision them not as static opposites, but as constituents of a field in constant flux . . . the circulation between ‘owned’ and ‘un-owned,’ between free and governed, between legal restrictions such as copyrights or patents, and the expropriation made possible by the lapse or lack of protection, represents the continuous to and fro movement that in fact defines the relationship between the public and the private.”<sup>19</sup>

Whether the particular “regime of alignment” I describe in the book, the one the content industries were hoping to forge with hardware manufacturers, DRM vendors, Congress, the FCC, and the courts, succeeds or fails does not undercut the underlying premise. Regulation of public discourse depends not just on a forceful legal regime, or a guiding business model, or a moral principle, but on all of the above, brought into precarious alliance.<sup>20</sup> Those invested in the future of copyright, on whichever side of the current arguments, have utilized all of these tactics. Further, each piece helps obscure the others, diffusing responsibility for the quite vigorous changes in the contours of public discourse they’re attempting to generate. This jigsaw puzzle of governance obscures itself through its own fluidity, making it hard to pull all of its details into focus. These tactics are hardly exclusive to DRM, or digital copyright, or the Internet. The question is: how do such regimes of alignment take shape, how do they work through the technical and the legal and the sociocultural to exert influence over people and their information practices, and what implications can they have for the contours of public culture? I hope that this book has helped spur, and can continue to take part in, this important inquiry.

## Notes

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3. Richard Thaler and Cass Sunstein, *Nudge: Improving Decisions about Health, Wealth, and Happiness* (New Haven, CT: Yale University Press, 2008).
4. David Hughes, quoted in Greg Sandoval, "RIAA: DRM Not Dead and Likely Will Make Comeback," *CNet* (May 8, 2008).
5. Joe Karaganis, "The Ecology of Control: Filters, Digital Rights Management, and Trusted Computing," in Joe Karaganis, ed., *Structures of Participation in Digital Culture* (New York: Social Science Research Council/Columbia University Press, 2007), 256–277.
6. Nicola Sharpe and Olufunmilayo Arewa, "Navigating the iPod Fairplay DRM Controversy," *Northwestern Journal of Technology and Intellectual Property* 5.2 (2007), 331–349.
7. Ronald Bettig, "Critical Perspectives on the History and Philosophy of Copyright," *Critical Studies in Mass Communication* 9.2 (1992): 131–155.
8. Jonathan Zittrain, *The Future of the Internet, and How to Stop It* (New Haven, CT: Yale University Press, 2008), 103.
9. Kieran Healy, "Digital Technology and Cultural Goods," *The Journal of Political Philosophy* 10.4 (2002): 498.
10. Tarleton Gillespie, "The Politics of 'Platforms,'" *New Media & Society* (forthcoming).
11. Pablo Boczkowski and Leah Lievrouw, "Bridging STS and Communication Studies: Scholarship on Media and Information Technologies," in Olga Amsterdamksa, Edward Hackett, Michael Lynch, and Judy Wajcman, eds., *The Handbook of Science and Technology Studies* (Cambridge, MA: MIT Press, 2007), 949–977; Eric Klinenberg and Claudio Benzecry, "Introduction: Cultural Production in a Digital Age," *The Annals of the American Academy of Political and Social Science* 597.1 (2005): 6–18; Siva Vaidhyanathan, "Afterword: Critical Information Studies: A Bibliographic Manifesto," *Cultural Studies* 20.2–3 (2006): 292–315.
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14. Pablo Boczkowski, "Technology, Monitoring, and Imitation in Contemporary News Work," *Communication, Culture & Critique* 2.2 (2009): 39–58; Josh Braun, "Toward a Distributed Model of Gatekeeping," *Wide Aperture* (April 30, 2009), <http://wideaperture.net/?p=574>.

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16. Jack Balkin, "Digital Speech and Democratic Culture: A Theory of Freedom of Expression for the Information Society," *New York University Law Review* 1.2 (2004): 2–58; Lawrence Lessig, *Remix: Making Art and Commerce Thrive in the Hybrid Economy* (New York: Penguin Press, 2008); José van Dijck, "Users Like You? Theorizing Agency in User-Generated Content," *Media, Culture, & Society* 31.1 (2009): 41–58.

17. Graham Longford, "Pedagogies of Digital Citizenship and the Politics of Code," *Techné: Journal of the Society for Philosophy and Technology* 9.1 (2005): 68.

18. Christopher Kelty, *Two Bits: The Cultural Significance of Free Software* (Durham, NC: Duke University Press, 2008).

19. Eva Hemmungs Wirtén, "Out of Sight and Out of Mind: On the Cultural Hegemony of Intellectual Property (Critique)," *Cultural Studies* 20.2 (2006): 290.

20. Still one of the sharpest examinations of this is Julie Cohen, "Pervasively Distributed Copyright Enforcement," *Georgetown Law Journal* 95.1 (2006): 1–48.

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