Journal of e-Media Studies
Volume 3, Issue 1, 2013
Dartmouth College

Storage Wars: Clouds, Cyberlockers, and Media Piracy in the Digital Economy

Nick Marx

This article examines the role of online media piracy in the shift away from acquisition- and ownership-based models of consumption in favor of access-based models. In this media industry climate, cloud technologies have played an increasingly important role in providing audiences with content on their own terms. Piracy has long served a similar function, but it is taking on aspects of cloud services as well. I investigate how cloud technologies are changing media piracy activities by examining cyberlockers, web-based services that afford consumers ubiquitous access and ownership of media content. Cyberlocker use for the illegal trade of copyrighted content, I argue, complicates conventional technological, legal, and cultural discourses about media piracy.

Reconsidering Media and Cultural Flows in the Digital Economy

The metaphor of the cloud is undoubtedly powerful, one that portends the next big thing in personal computing and information technology. But although the idea of storing electronic data externally and/or online to be accessed anywhere is not necessarily new, recent advances in network speeds, storage capabilities, and cost efficiencies have increasingly catalyzed talk of the cloud beyond the computing industry. By the middle of

2011, for instance, twenty-five different agencies of the US government had listed applications to make their operations cloud-based.[1] In the private sector, companies such as Google have long been in the business of cloud computing without really identifying it as such, allowing users to store several gigabytes of personal files and access them from any web-capable device. Windows' recent "To the cloud!" advertising campaigns champion the operating system's capability to share media across desktop computers, laptops, and mobile devices, a service echoed months later by Apple's introduction of its iCloud in the summer of 2011. Indeed, one key in the clamor for cloud computing is its growing associations not just with quotidian workflows, but also with the personal, private consumption and sharing of entertainment media. Even the IT giant Cisco opines that the cloud is "less about changing technology than it is about transforming culture."[2]

There is already robust debate about the interrelationships between technological and cultural changes in the creative industries that produce much of the popular content stored, shared, and transported in the cloud. Scholars characterize the contemporary television industry as being in a *post-network* era, one in which the oligopolistic power of the major broadcast networks has given way to viewer-controlled consumption facilitated by digital distribution platforms.[3] At the same time, though, ample evidence points to the continued importance of television network infrastructures and, in many cases, their absorption of evolving digital practices into established business models.[4] The respective sale and licensing troubles of streaming content providers such as Hulu and Netflix, for instance, indicate that much contention remains about how best to consolidate power among entertainment media conglomerates in the digital economy. In the motion picture

industry, studios are struggling to reconcile declines in home video revenue with increases in streaming from cloud-based services. One of their primary strategies to mitigate this uncertainty has been to redouble efforts to extract additional revenue from the theater-going experience with 3-D, rising ticket prices, and big-budget franchise films.[5]

The entertainment industry where the mixture of excitement and anxiety over cloud computing seems most acute, though, is music. When compressed into digital files, songs and albums are exponentially smaller compared to television episodes and feature-length films, making music files eminently more spreadable among digital networks than their screen media brethren. Music has, of course, already had a tumultuous history in its short life in the cloud. On the one hand, record labels have made a concerted push away from music as a tangible commodity to a service that the industry and its cooperative compatriots in screen media provide and control. From e-commerce platforms such as iTunes to streaming services such as Spotify and Pandora, the avenues through which consumers access and acquire music are increasingly constructed with the technologies of customer relations and digital rights management. Patrick Burkhart and Tom McCourt worry that this *celestial jukebox* model constrains the viability of music as a cultural practice and rearticulates it as merely another arm of data collection.[6]

On the other hand, many platforms have sprung up among the music industry's attempts to control these new consumption patterns of music. Perhaps the most notorious of these are the peer-to-peer (P2P) file-sharing services such as Napster, and the myriad programs

and protocols that followed in its wake across the 2000s. With few exceptions, the recording industry has gone to great lengths to portray distribution mechanisms beyond its purview as piracy, and has prosecuted their users as criminals. Record labels' push for the celestial jukebox, then, has just as much to do with the transmedial targeting of consumers as it does with making music "something we access rather than acquire."[7]

The same advances in network speeds and storage capabilities that have spurred the growth of legal, cloud-based streaming have also enabled the illegal trade of large media files on P2P networks in the past decade. Although Napster mostly accommodated small music files, subsequent generations of P2P software, such as Gnutella, Kazaa, and BitTorrent, can efficiently transfer entire seasons of television or high-definition movies in a fraction of the time. Just about all of these P2P communities have, at the behest of interested parties in and affiliated with the commercial media industries, been the targets of criminal prosecution. The latest of these efforts comes from a "grassroots" organization called Creative America, backed by a coalition of media conglomerates and labor groups including NBCUniversal; CBS; Viacom; Sony Pictures; Warner Bros.; the International Alliance of Theatrical Stage Employees, Moving Picture Technicians, Artists and Allied Crafts of the United States (IATSE); the American Federation of Television and Radio Artists; and the Screen Actors Guild. The organization is among the leading voices backing the Protect IP Act (PIPA) and Stop Online Piracy Act (SOPA), congressional antipiracy legislation designed to grant enforcing agents wide-ranging authority to prosecute people and websites engaging in media piracy.[8] A public service announcement made by Creative America satirically literalizes the end product of

illegally downloading a movie, first by showing it for sale as a DVD on the sidewalk, then by having the would-be salesperson claim that a boom-mic operator loses her job because of it:

PSA, image from video http://www.youtube.com/watch?v=jBVIz2s_gVM]

The PSA connects two different forms of piracy for comedic effect: a movie downloaded from the internet ends up as a DVD for sale on the street. This might not be the most common route for pirated media, but it points to the industry's focus in developing antipiracy strategies and messages—stopping the illegal *acquisition* of content by pirates and consumers. Whether tape, disc, or electronic file, media pirates are still mostly imagined to be engaged in the illegal trade of objects. In this light, removing the actual media objects from the hands of consumers or pirates and locking them behind user-specific account information in cloud services is another method for discouraging piracy, albeit indirect. If content is affordable and available widely enough, this thinking goes,

the desire for access may trump the desire for acquisition.

Indeed, sales figures are declining for traditional, acquisition- and ownership-based models of media consumption. Wholesale DVD revenue dropped by 44 percent from almost $8 billion in 2009 to $4.47 billion in 2010.[9] In the same period, growth in purchases of digital music tracks slowed from a gain of 277 million units to 95 million units, while CD sales fell off by 47 million units.[10] In trade reports, streaming options are nearly always named as the primary culprits behind shifting behaviors from "old" models of physical media acquisition to "new" ones of cloud-based services. Yet drawing a clear distinction between these impulses is not so simple, particularly as entertainment media industries embrace more choice and flexibility in how they make content available. Moreover, as industries have monetized these new consumption options,[11] consumers have circumvented them in similarly complex ways that blur the boundary between legal and illegal. If, as Lawrence Lessig argues, every media industry is born of some form of piracy, then describing pirate practices with more nuance can provide a clearer picture of how institutionalized media powers are confronting the many challenges of the digital economy. Characterizing media piracy as partly constitutive of, rather than directly oppositional to, established industry routines allows us to see the former with the same complexity commonly afforded the latter. It also avoids reinforcing binaristic conceptions—old versus new or licit versus illicit—of how media circulate and participate in the construction of cultural discourses.

As industry interest groups like Creative America work publicly to shape, control, and

ultimately prosecute undesirable consumer behavior, so too do pirate practices adapt. Key tensions for this negotiation currently lie in the legal, cultural, and technological discourses surrounding online media piracy on websites known as cyberlockers.[12] In contrast to P2P communities that connect users with one another, cyberlockers are "web services that allow a user to upload and store files on dedicated, always-on servers, and then share those files with other users through a URL."[13] Although cyberlockers and websites with similar functionalities (like P2P file-sharing communities) have been and continue to be used for a variety of legal purposes, they have also become a haven for pirate activity. On one level, cyberlockers provide a very similar function to what P2P file-sharing communities offer. Users upload files on one end and download them on the other. On another level, cyberlockers are, technologically and industrially, an *extension* of current cloud-based services endorsed by the entertainment industry. The only prerequisite for usage of the sites is an internet connection, aligning cyberlockers with the same kind of abstractly ubiquitous access popularly used to describe legal cloud services. Moreover, the overlap of cyberlocker services with those already provided by myriad web platforms—from Google to Amazon—makes it difficult to affix pirate labels to the sites in the same way we do to P2P file-sharing communities. Nonetheless, mounting evidence suggests that cyberlocker websites such as RapidShare, Megaupload, and MediaFire are, more than anything, home to the illegal exchange of copyrighted media. But as commercial media institutions and media pirates alike increasingly rely on cloud-based transactions, their respective positions as legitimate and illegal become more and more nebulous, interacting in complex, sometimes complementary ways.

Peer-to-Peer, Cyberlocker, and Pirate Architectures

For as long as the major players in the motion picture, television, and music industries have relied on distribution bottlenecks to maintain oligopolistic control, pirate networks have existed as well, trading stolen, bootlegged, and illegally reproduced media beyond the purview of these licit channels. But the proliferation of digital technologies has made possible an acceleration and amplification of pirate activities to the point that, as Lessig notes, the mechanisms for talking about and regulating piracy no longer correlate with the actual practices of exchange. Although in previous eras, media piracy might have been able to be more clearly defined as unlawful, the range of contemporary pirate methods complicates any clear-cut notion of right and wrong. P2P file-sharing networks, which have been the dominant method for illegally exchanging copyrighted material in the past decade, have also proven to be "useful and productive, to produce either new content or new ways of doing business."[14] Lessig concedes that P2P file sharing as a substitute for purchasing or to sample before purchasing, for instance, is illegal, but he notes that file sharing to obtain content that is no longer available for purchase or is not copyrighted arguably works in the service of media artists and cultural exchange. Cyberlockers, by extension, remove the direct P2P element from file sharing and reinsert a distribution intermediary between industry and consumer, doing so in a manner that makes the charge of outright piracy much more muddled than it is for existing file-sharing models.

Still, studies show that both P2P and cyberlocker sites thrive on the illegal exchange of copyrighted material, by far the biggest contributors to the 23.76 percent of all global

internet traffic estimated to be infringing.[15] For instance, almost two-thirds of the traffic using the popular P2P file-sharing protocol BitTorrent, one that accounts for nearly 18 percent of all global internet traffic, is composed of copyrighted films, television episodes, and music.[16] Cyberlocker traffic from sites such as RapidShare and Megaupload accounts for 7 percent of all global internet traffic, three-quarters of which is estimated to be illegally traded content.[17] Though P2P use surged over the course of the 2000s, responsible for up to 60 percent of total internet traffic in some regions of the world, it has seen a steady drop-off lately.[18] From 2007 to 2009, P2P file-sharing usage declined at a faster rate than that of any other web application.[19] Americans using P2P to share music—a practice initially made infamous by Napster—declined from 28 million users in 2007 to 16 million in late 2010, when the P2P file-sharing service LimeWire shuttered.[20]

Cloud-based streaming services are replacing P2P acquisition practices, with analytics supporting this "dramatic shift in consumer behavior towards real-time 'experience now' applications and away from bulk download 'experience later' behavior."[21] Video streaming continues to be the fastest-growing sector of internet usage, yet only 4.7 percent of this traffic is estimated to be infringing.[22] This conspicuous lack of pirate activity in streaming suggests that although the desire for both legal and illegal media acquisition might be waning, it has not gone away completely. Instead, it is increasingly taking on the more detached-storage and ubiquitous-access traits of cloud-based services in the form of cyberlockers. One study positing a direct correlation between the decline of P2P and the rise of cyberlockers suggests that "the apparent decline of p2p file sharing

points to a paradigm shift in how users share content."[23] Just as consumers are trusting services external to their computers, televisions, and homes to store and provide media on demand, so too are media pirates removing illegally acquired media objects from their hard drives and moving them to third-party storage sites. Although file-sharing communities using the BitTorrent protocol remain predominant, cyberlockers are steadily cutting into their share of pirated media traffic. A 2011 report found that the top three websites in the world classified as "digital piracy" were the cyberlockers RapidShare, Megaupload, and that site's streaming companion, Megavideo. Together, the three sites generate in excess of 21 billion visits per year,[24] producing a share of web traffic that "in some cases exceeds the traffic generated by YouTube."[25]

At the user end, cyberlocker sites still function according to the logic of acquisition (though some do offer companion streaming sites). But several crucial differences from P2P protocols—quick and anonymous downloading; less likelihood of viruses and outside interference; more content available for longer periods of time—mitigate this impulse to acquire and store in bulk. Instead, users can download, consume, and delete media files knowing that if they ever wish to revisit them, the files will probably be available quickly, no matter the time or location. Unlike P2P protocols, which require a separate application, only a web browser is needed for cyberlocker users to upload a file of their choice to the cyberlocker server. The cyberlocker then provides the uploading user with a URL that connects anyone clicking on it directly to the cyberlocker server. The uploader can choose to share this URL with anyone else, for private or public display. Non-paying users have restrictions placed on the size, frequency, and speeds

with which they can upload or download, but users paying for premium memberships (averaging $13 per month) are granted instant and high-speed downloads to any content stored by the site.[26]

In addition to these basic features that inch cyberlocker transactions closer to the realm of cloud-based services, the sites depart from P2P protocols in a handful of specific ways. First, content hosted on cyberlocker sites is always available, as long as the content is not identified as infringing. P2P communities, by contrast, are subject to the whim of users' *seeding* capabilities, that is, making the file available only when the user wants to spare the bandwidth. Second, P2P users must disclose their IP addresses to the peer community and hosting site when they participate in the sharing (either uploading or downloading) of a file. P2P users are thus susceptible to being identified by third parties monitoring the sites for potentially illegal activity. The IP addresses of cyberlocker users, by contrast, are kept anonymous from one another, known only to the cyberlocker site itself. Without the cooperation of the cyberlocker service (as I will explore), enforcement agencies are unable to identify, track, or prosecute individual users of the site for illegal transactions.

Finally, cyberlockers have higher performance rates than BitTorrent services do, because cyberlockers facilitate more successful file transactions and also because they provide a longer tail of harder-to-locate content. One 2010 study tracked the dissemination of a top-rated television crime procedural, comparing its speed and frequency of download rate between BitTorrent communities and the four largest cyberlocker sites at the time (RapidShare, Megaupload, Hotfile, and MediaFire). The study found that not only was

the file available for download much sooner on cyberlocker sites, but it was also posted much more frequently and widely than on the P2P BitTorrent communities sampled; this shows that cyberlockers "are generally being used to host very large content and the active files are being hosted for a long period of time."[27]

Somewhat paradoxically, the physical computer architecture of cyberlockers works differently from that of many common e-commerce, social networking, and cloud-based entertainment sites. Web giants such as Amazon, Facebook, and Netflix all rely on content distribution networks, third-party technology companies that maintain mirror servers close to several worldwide geographic locations for their clients. The goal of these networks is to minimize transaction times of a page's content between its producer (the website) and consumer (the web user). In other words, the more quickly and efficiently a content delivery network delivers a breaking news story or status update to users clicking it, the better. In contrast, cyberlockers maintain servers in a centralized geographic location or two, focusing on transfers of large files at slower speeds compared to content delivery networks, making them less sensitive to delay. Whereas the content delivery networks crucial to so many web-browsing activities are primarily concerned with performance, cyberlockers are concerned with content availability. This gives cyberlocker sites the advantage of being less delay-sensitive than streaming services that are subject to the ebb and flow of real-time demand for content.

This architecture allows cyberlockers to keep costs low and to demand subscription rates from users seeking rapid or frequent service; and it forces free users, if they are willing to

wait, to be exposed to advertisements. The cyberlocker Megaupload, for instance, has featured ads from such global consumer products as McDonald's and Coca-Cola alongside a forty-five-second countdown before exposing a CAPTCHA-protected download link to free users.[28] After antipiracy efforts eliminated downloading incentives for paying users of many cyberlocker sites (a move I will explore in the next section in the case of RapidShare), these ad-fueled wait times have become the norm for most users. But as web entrepreneur Martin Varsavksy notes, "If anything they show that while people are not willing to pay for video content in iTunes or in cash, they seem to have no problem in paying for it in sweat."[29] The issue of labor—on the part of both legitimate and illegitimate users of cyberlockers—is heavily influenced by the power relations established between P2P file sharers and media institutions of the very recent past.

Piracy, Prosecution, and Power

Perhaps the best-known case of alleged internet piracy of copyrighted media since Napster a decade ago is the Swedish BitTorrent website the Pirate Bay. The site, and scores of others like it, allows users to search indirectly for digital media by providing access to a database of BitTorrent files. These small bundles of electronic information, usually named after the media text one wishes to download, do not connect the downloader to a centralized server in the same way that other P2P sites such as LimeWire and Kazaa did. Instead, the downloader is connected to any number of other Pirate Bay users who have a copy of the media object, and downloading of that object more or less ensues collectively and piecemeal as fast or as slowly as users of the site allow. Though

not all of the content traded among its users is infringing, Pirate Bay undoubtedly provides access to and facilitates the sharing of copyrighted movies, images, television programs, music, games, and software.

After lobbying from powerful trade organizations such as the Motion Picture Association of America, Swedish authorities confiscated the servers of Pirate Bay and temporarily shut down the website in May 2006. In the ensuing several years of court battles, the site and its founders would repeatedly articulate an explicit oppositionality to what they viewed as outdated copyright law that served the interests of commercial media institutions colluding with national and international legislating bodies. Swedish IT entrepreneur and activist Rickard Falkvinge seized on the notoriety brought to the site by the 2006 incident in order to bolster membership in his political party, Piratpartiet (Pirate Party), whose platform is built around copyright reform. Pursuing these changes with equal measures of earnestness (Piratpartiet won over 7 percent of Swedish votes in the 2009 European Parliament elections, earning it two seats there) and playfulness (Pirate Bay would taunt all new plaintiffs by posting their legal threats online with humorous commentary), the BitTorrent protocol used by the site became synonymous with illegal media exchange in the public eye.

As P2P communities, like Pirate Bay, that share files with the BitTorrent protocol see their usage plateau and, in some cases, fall off sharply, media piracy has increasingly taken on the guise of legal file sharing in the form of cyberlockers. From personal data backup and storage to Fortune 500 companies that send large files to their employees in

far-flung corners of the world, branding cyberlocker usage as piracy as was done with Pirate Bay becomes more difficult. Complicating matters is the fact that many established internet giants, such as Google and its Google Drive, already provide a similar service—users can upload content, download it at their convenience, and share with anyone they choose. Nonetheless, the increasing share of internet traffic being driven to cyberlockers has already set off alarms around Hollywood, just as it did in the mid-2000s with Pirate Bay. In 2009, Viacom Executive Vice President Michael Fricklas publicly decried the revenue being generated by the cyberlocker RapidShare, speculating (perhaps generously) that its annual revenue was "anywhere from $14 million to $175 million a year." And last year, Paramount Pictures COO Frederick Huntsberry asserted that "cyberlockers now represent the preferred method by which consumers are enjoying pirated content."[30]

The Swiss company RapidShare, founded in 2006, provides a useful example for examining the brief history of how cyberlockers have negotiated pirate practices with licit uses. At its peak in 2009 and early 2010, the site averaged hundreds of millions of hits per month and ranked among the top fifty most-used sites on the internet, a remarkable feat when one considers that sites such as Apple's home page, BBC Online, and Flickr also occupied spots near the low end of the top-fifty range. RapidShare offers a user-friendly interface and good storage capacity even for free accounts, but users can pay more if they want more storage capacity or quicker access to other content on the site. Crucially, though, RapidShare and many cyberlockers do not allow the content of their sites to be searched in the same way that torrent portals do. That is, there is no way to

visit the RapidShare site and enter *Breaking Bad* or *Avatar* with the hope that download links to these media will appear. Instead, myriad third-party indexing websites such as FilesTube.com have sprung up that search for and collate download links from the innumerable bulletin boards, chat rooms, and web forums where users gather to talk about and share media. Among the many semi-successful measures taken to slow the growth of cyberlockers was Google's January 2011 decision to filter piracy-related search terms from its Google Instant service, so that one cannot begin typing "Rapid" and expect to see "RapidShare" as a suggested search term. Indeed, this could be an indicator of antipiracy measures to come, as pending legislation before both houses of Congress would greatly expand the US government's ability to censor these particular kinds of web searches.

Among the more actionable offenses for which RapidShare has been prosecuted is the alleged sharing of copyrighted music and movies in Germany. In 2007, GEMA (the country's trade body representing the recording industry) gained a temporary injunction against the RapidShare site, shortly followed by another lawsuit filed by the film and DVD rental company Capelight. German judges ordered RapidShare to proactively monitor the content being uploaded by users instead of reacting to complaints reported on a case-by-case basis per the country's digital intellectual property laws. Both suits were later overturned by appeals courts, citing the inability of RapidShare to censor each and every bit of content uploaded by its users.

The ensuing years would see similar suits brought against RapidShare from an adult

entertainment company in the United States (Perfect 10), the French video game company Atari, and an international coalition of book publishers including McGraw-Hill. In nearly every case, RapidShare escaped with an inconsequential fine or was made to shut down the accounts of users identified as having infringed. Nonetheless, the company was fighting a losing battle against its negative public image among the content industries. A turning point for the company, and one that complicates other cyberlockers' status as pirate havens, was RapidShare's effort to air out any whiff of piracy from its operations over the course of 2010. First, it ended its rewards program, which had implicitly incentivized piracy by paying its most prolific uploaders. Then, the site's general manager, Bobby Chang, reached out to Hollywood production outfits such as Warner Bros., offering to enter into exclusive online distribution agreements for the company's extensive back catalog of film and television. Finally, RapidShare hired Google's lobbying firm, Dutko, in an effort to gain the ear of influential Washington policymakers. Chang initiated a series of exchanges with lawmakers and potential partners in the entertainment industry, which he summarized as follows:

> *RapidShare is seeking the partnership of the content industry to generate new models that make piracy obsolete. One of these models is to redirect users to legal content on our own website, which is provided by content owners. This redirect has been in place since [the] beginning of 2010 and well perceived by users so far. We experience that many users seek the content in the first place and are very often not aware—and cannot find out—if any content is pirated or not. That is why they prefer to consume it from a reliable and safe source, instead of risking*

> *to be involved in piracy. RapidShare has initiated a dialogue between the content industry and the internet industry to go forward and create new models of cooperation that eliminate the need for piracy, thus the need for pursuing users and thus protect data privacy on the internet. We believe that if users can instantly find what they are looking for at a fair price, piracy will become a problem of the past.*[31]

Although the site had long spoken out of both sides of its mouth regarding piracy, these measures aimed to eliminate the practice from its servers altogether. As RapidShare rolled out increased self-censoring and redirection efforts over the course of 2010, traffic to the site fell precipitously. Several weeks after reaching out to the Hollywood mainstream, RapidShare dismissed Chang, the executive who had spearheaded the effort. The site has since fallen out of Alexa's ranking of the top 100 websites in the world, and it has been surpassed by several other cyberlocker sites, with the cyberlocker MediaFire ranked 66 in the world as of fall 2011. Toward the end of 2011, Megaupload, the cyberlocker site just behind MediaFire and ranked 70 in the world, would become embroiled in several legal issues that caused it to cease operations, move, or create ghost servers of its Hong Kong–based operations across Southeast Asia. Similar efforts to those of RapidShare at legitimizing Megaupload in the public eye (such as a rap song featuring Hollywood stars Kim Kardashian and Kanye West) did little to mask the site's infringing behavior, particularly as reports abounded about alleged founder Kim Schmitz freely spending the site's profits on multimillion-dollar homes and yachts across the Pacific.

Whether through the explicit pronouncements or the implicit behaviors of company leadership, cyberlocker sites seem to be increasingly aligned with the same discourses of media piracy as are P2P torrenting communities. The prosecution of cyberlockers by coalitions of national governmental bodies and media industry trade organizations, moreover, implicates their users as pirates, too. In defying these institutional forces, Leon Tan suggests that media piracy can constitute countervailing power, a form of political economic claims-making on the part of consumers. P2P file-sharing communities, he asserts, provide a necessary oppositional force in capitalist societies where the state has endorsed oligopolistic control of media industries: "Whereas isolated individuals rarely possess the market power to influence terms of exchange relations with large firms and oligopolies, the cumulative action of swarms of individuals expressing claims collectively online" constitute an important voice in networked media cultures that cannot simply be marginalized as deviant behavior.[32] But the crucial difference for cyberlocker users comes in the extra step of directing this impulse into an abstracted vessel first—the cloud of storage—before it finds another individual. By inserting this intermediary into the exchange of pirated media, cyberlockers diffuse the collective claims to countervailing power made possible by P2P communities, and isolate users' media consumption according to the commercially driven industry mandates of individual choice and control.

On the one hand, then, cyberlockers might be seen as the latest, web-based market force learning from the pirate sharing practices of P2P communities and appropriating them. The sites use always-available, cloud-based technological infrastructures to facilitate

tacitly the illegal exchange of copyrighted media, and they profit from it via advertising and subscriber revenues. But on the other hand, these transactions are driven by the effort and willingness of consumers at both ends, who are intentionally seeking to avoid legal channels of paying for content. Undoubtedly, the cultural labor of cyberlocker users defies dominant, industry-sanctioned protocols for media distribution. Yet this labor is much more intimately bound up in those protocols than many popular portrayals of cyberlocker users seem to suggest. In contrast to P2P communities, cyberlocker piracy reproduces a subtler form of power that more accurately invokes Tiziana Terranova's notion of an online outernet of immaterial labor, one "voluntarily channeled and controversially structured within capitalist business practices."[33]

Here it is helpful to consider cyberlocker piracy not just in the moment of transaction itself—from the user to the site to the other user—but also in terms of the structuring discourses of online commerce and their cultural contexts. RapidShare's overtures to Hollywood production studios, and the celebrity endorsements of Megaupload, for instance, highlight the extent to which cyberlockers collapse the differences between established industry forces and pirates operating against them. The construction of this collapse beyond the realm of cyberlocker users' everyday lived experiences—in the cloud—further removes from their minds the possibility of media piracy being a constitutive, even necessary part of emergent business models in the digital economy. When the cloud casts a shadow over not only technological innovation, but also cultural power, it becomes less and less the metaphor we imagine it to be.

About the Author

Nick Marx is a visiting assistant professor of critical media and cultural studies at Rollins College, and beginning in fall 2013 will be an assistant professor in the Department of Communication Studies at Colorado State University. He is coeditor of *Saturday Night Live and American TV* (2013), and his research on television comedy and digital media culture has appeared in *Velvet Light Trap* and *Journal of Film and Video* and in the anthologies *Deconstructing South Park: Critical Examinations of Animated Transgression* (2011) and *How to Watch Television* (2013).

Endnotes

1. Flock and Tsukayama, "iCloud."

2. Cooke, *The Shift to Cloud Computing*, 3.

3. See Lotz's (*The Television*) and Curtin's ("Matrix Media") respective descriptions of how digitization has forced the television industry to account for and integrate computer technologies into new, flexible distribution strategies.

4. See Mittell, "A Post."

5. See Perren, "Business as Unusual."

6. Burkhart and McCourt, *Digital Music Wars*.

7. Morris, "Understanding," 272.

8. Verrier, "Hollywood Unions." As of fall 2012, PIPA and SOPA are in limbo after vociferous online protests in the winter of 2011–12: myriad technology companies, web

entrepreneurs, and artists expressed deep concern about how the legislation would infringe on First Amendment rights and create a morass of frivolous lawsuits.

9. Fritz, "DVD Revenue Plummets."

10. Peoples, "Growth in Sales."

11. The most recent of these efforts is the digital rights authentication and licensing system UltraViolet, which, like Creative America, enjoys a broad coalition of support from the Hollywood studios. However, the service is conspicuously without the backing of major distribution and content firms such as Apple and Disney; the latter is developing its own competing video service called Keychest. Scholars have suggested that this lack of digital service standardization among the major content providers is one of the forces driving media piracy, and that Hollywood could look to pirate practices as "pioneering new modes of audience engagement" (DeKosnik, "Piracy Is the Future").

12. These sites are also known as *file-hosting services* or *one-click hosting services*.

13. Antoniades et al., "One-Click," 224.

14. Lessig, *Free Culture*, 66.

15. Envisional, *Technical Report*, 2–3.

16. Ibid.

17. Ibid.

18. Mahanti, "Measurement and Analysis."

19. Labovitz et al., "Internet Inter-domain Traffic."

20. Graham, "With Limewire Shuttered."

21. Sandvine, *2009 Global Broadband Phenomena*, 1.

22. Envisional, 6.

23. Mahanti, “Measurement and Analysis,” 373.

24. MarkMonitor, *Traffic Report*, 4.

25. Antoniades et al., 233. Although few websites can approach YouTube’s overall traffic (estimated as high as 3 million daily hits), the study is meant to place relatively obscure cyberlocker sites in comparison with more popular ones. Depending on time of day, the study shows that the overall share of cyberlocker web traffic can and does exceed that of YouTube.

26. Envisional, 15.

27. Mahanti, “Characterizing,” 2.

28. Roettgers, “Piracy beyond P2P.”

29. Varsavsky, “My Investments.”

30. Mullin, “How ‘Cyberlockers’ Became.”

31. TorrentFreak, “Rapidshare Aims.”

32. Tan, “The Pirate Bay.”

33. Terranova, “Free Labor,” 39.

Bibliography

Antoniades, Demetris, Evangelos P. Markatos, and Constantine Dovrolis. “One-Click Hosting Services: A File-Sharing Hideout.” Proceedings of the 9th ACM SIGCOMM Conference on Internet Measurement. *IMC ’09*, 2009: 223–34. doi:10.1145/1644893.1644920.

Burkart, Patrick, and Tom McCourt. *Digital Music Wars: Ownership and Control of the*

Celestial Jukebox. Lanham, MD: Rowman and Littlefield, 2006.

Cooke, Jim. *The Shift to Cloud Computing: Forget the Technology, It's about Economics*. San Jose, CA: Cisco Internet Business Solutions Group, Dec. 2010. http://www.ciscosystems.com/web/about/ac79/docs/pov/Shift_to_Cloud_Computing_POV_IBSG.pdf.

Curtin, Michael. "Matrix Media." In *Television Studies after TV: Understanding Television in the Post-Broadcast Era*, edited by Graeme Turner and Jinna Tay, 9–19. London: Routledge, 2009.

De Kosnik, Abigail. "Piracy Is the Future of Television." Convergence Culture Consortium. Berkeley, CA: University of California, Mar. 17, 2010. http://boletines.prisadigital.com/piracy_future_television-full.pdf.

Envisional. *Technical Report: An Estimate of Infringing Use of the Internet*. Cambridge, UK: Envisional, Jan. 2011. http://documents.envisional.com/docs/Envisional-Internet_Usage-Jan2011.pdf.

Flock, Elizabeth, and Hayley Tsukayama. "iCloud, Cloud Computing Services Promise to Change the Way We Use Computers." *Washington Post*. June 6, 2011. Accessed Nov. 1, 2011. http://articles.washingtonpost.com/2011-06-06/business/35234112_1_personal-computer-cloud-data-icloud.

Fritz, Ben. "DVD Revenue Plummets 44% in 2010, SNL Kagan Study Says." *Los Angeles Times* (blog). May 12, 2011. Accessed Nov. 1, 2011. http://latimesblogs.latimes.com/entertainmentnewsbuzz/2011/05/dvd-revenue-plummets-44-in-2010-study-says.html.

Graham, Lee. "With Limewire Shuttered, Peer-to-Peer Music File Sharing Declines

Precipitously." *NPD Group* (blog). March 23, 2011. Accessed Nov. 1, 2011. https://www.npd.com/press/releases/press_110323.html.

Labovitz, Craig, Scott Iekel-Johnson, Danny McPherson, Jon Oberheid, and Farnam Jahanian. "Internet Inter-domain Traffic." Proceedings of the ACM SIGCOMM 2010 Conference. *SIGCOMM '10*, 2010: 75–86. doi:10.1145/1851182.1851194.

Lessig, Lawrence. *Free Culture: The Nature and Future of Creativity*. New York: Penguin Press, 2004.

Lotz, Amanda D. *The Television Will Be Revolutionized*. New York: New York University Press, 2007.

Mahanti, Aniket. "Measurement and Analysis of Cyberlocker Services." Proceedings of the 20th International Conference Companion on World Wide Web. *World Wide Web Conference Committee*, 2011: 373–78. doi:10.1145/1963192.1963346.

Mahanti, Aniket, Niklas Carlsson, and Carey Williamson. "Characterizing the File Hosting Service Ecosystem." Proceedings of the ACM CoNEXT Student Workshop, Philadelphia. *CoNEXT Student Workshop*, 2010. doi:10.1145/1921206.1921210.

MarkMonitor. *Traffic Report: Online Piracy and Counterfeiting*. MarkMonitor: Jan. 2011. https://www.markmonitor.com/download/report/MarkMonitor_-_Traffic_Report_110111.pdf.

Mittell, Jason. "A Post against 'post-.'" *Antenna* (blog). Feb. 7, 2010. Accessed Nov. 1, 2011. http://blog.commarts.wisc.edu/2010/02/07/post-post/.

Morris, Jeremy. "Understanding the Digital Music Commodity." Unpublished dissertation. McGill University, 2010.

http://www.jeremywademorris.com/Publications_files/Dissertation%20Final%20Archive.pdf.

Mullin, Joe. "How 'Cyberlockers' Became the Biggest Problem in Piracy." *PaidContent.org*. Jan. 20, 2011. Accessed Nov. 1, 2011. http://paidcontent.org/2011/01/20/419-how-cyberlockers-became-the-biggest-problem-in-piracy/.

Peoples, Glenn. "Growth in Sales of Digital Downloads Slows to a Trickle." *Reuters.* Dec. 10, 2010. Accessed Nov. 1, 2011. http://www.reuters.com/article/2010/12/11/us-downloads-idUSTRE6BA09620101211.

Perren, Alisa. "Business as Unusual: Conglomerate-Sized Challenges for Film and Television in the Digital Arena." *Journal of Popular Film and Television* 38, no. 2 (Summer 2010): 72–78. doi:10.1080/01956051.2010.483349.

Roettgers, Janko. "Piracy beyond P2P: One-Click Hosters." *Gigaom*. June 17, 2007. Accessed Nov. 1, 2011. http://gigaom.com/video/one-click-hosters/.

Sandvine Intelligent Broadband Networks. *2009 Global Broadband Phenomena*. Waterloo, ON: Sandvine, Jan. 13, 2010. http://www.sandvine.com/downloads/documents/2009%20Global%20Broadband%20Phenomena%20-%20Executive%20Summary.pdf.

Tan, Leon. "The Pirate Bay: Countervailing Power and the Problem of State Organized Crime." *Theory beyond the Codes*, edited by Arthur and Marilouise Kroker. Nov. 25, 2010. http://www.ctheory.net/articles.aspx?id=672.

Terranova, Tiziana. "Free Labor: Producing Culture for the Digital Economy." *Social*

Text 18 (2 63). Duke University Press: Summer 2000. doi:10.1215/01642472-18-2_63-33.

TorrentFreak. "Rapidshare Aims to Convert Pirates into Customers." *TorrentFreak* (blog). Mar. 26, 2010. Accessed Nov. 1, 2011. http://torrentfreak.com/rapidshare-aims-to-convert-pirates-into-customers-100326/.

Varsavsky, Martin. "My Investments in the Video Online Space and My Take on the Whole Sector." *Huffington Post* (blog). May 27, 2007. Accessed Nov. 1, 2011. http://www.huffingtonpost.com/martin-varsavsky/my-investments-in-the-vid_b_49608.html.

Verrier, Richard. "Hollywood Unions, Networks and Studios Mount Anti-piracy Offensive." *Los Angeles Times* (blog). Oct. 18, 2011. Accessed Nov. 1, 2011. http://latimesblogs.latimes.com/entertainmentnewsbuzz/2011/10/hollywood-unions-networks-and-studios-mount-anti-piracy-offensive-.html.

Published by the Dartmouth College Library.

http://journals.dartmouth.edu/joems/

Article DOI: 10.1349/PS1.1938-6060.A.426