
NOTE

GOING LIVE: THE ROLE OF AUTOMATION IN THE EXPEDITIOUS REMOVAL OF ONLINE CONTENT

*James Rickard**

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* J.D. candidate, Boston University School of Law, 2017; B.A. Philosophy, Comparative Humanities, Bucknell University, 2008. My sincerest thanks to Professor Stacey Dogan for her invaluable comments and advice, and to the editors and staff of the Boston University Law Review for their hard work editing this Note.

INTRODUCTION

On December 16, 2009, the House Committee on the Judiciary met to consider the issue of “Piracy of Live Sports Broadcasting over the Internet” and the challenges that the current copyright framework pose to rights holders attempting to protect their rights to works that are streamed live on the Internet.¹ The hearing focused on the Digital Millennium Copyright Act (“DMCA”), which was enacted in 1998 to create a framework for copyright protection and enforcement in “the digital age.”² One of the requirements of the DMCA is that, upon receiving a “takedown request,”³ a website hosting allegedly infringing user-uploaded content must remove it “expeditiously.”⁴ As was noted in the hearing, however, live broadcasters—especially of sports—consider the removal of infringing online content to be a particularly time-sensitive matter; the harm caused by a twenty-four-hour delay in removing a two-hour live sporting event is far different from any harm caused by such a delay in removing an already-aired television drama or a song.⁵ In other words, how expeditious a response is depends on the stakeholders involved with the particular action in question.

During this hearing, Representative Bob Goodlatte seemed to acknowledge this concern, stating that “the meaning of the word ‘expeditiously’ has got to change or the DMCA has got to change.”⁶ Seven years later, however, the definition of “expeditious” remains unchanged, with the legislature, the judiciary, and academia paying little attention to this particular requirement.⁷

¹ *Piracy of Live Sports Broadcasting over the Internet: Hearing Before the H. Comm. on the Judiciary*, 111th Cong. 1 (2009) [hereinafter *Piracy of Live Sports Broadcasting over the Internet*] (statement of Rep. John Conyers, Jr., Chairman, H. Comm. on the Judiciary).

² *Viacom Int’l, Inc. v. YouTube, Inc.*, 676 F.3d 19, 26-27 (2d Cir. 2012).

³ The DMCA’s framework for providing notice to service providers of allegedly infringing material and requesting removal of that material is referred to as “notice and takedown”; such notices are typically called “takedown notices” or “takedown requests.” See *Piracy of Live Sports Broadcasting over the Internet*, *supra* note 1 *passim*.

⁴ 17 U.S.C. § 512(c)(1)(C) (2012) (“[U]pon notification of claimed infringement . . . [the service provider must] respond[] expeditiously to remove, or disable access to, the material that is claimed to be infringing or to be the subject of infringing activity.”). There is not, however, a clearly defined timeframe for what qualifies as an expeditious removal. See *infra* Part II.

⁵ Lorenzo Fertitta, the CEO of the Ultimate Fighting Championship, explicitly raised this issue in the hearing. *Piracy of Live Sports Broadcasting over the Internet*, *supra* note 1, at 52 (testimony of Lornezo J. Fertitta, Chief Executive Officer, Ultimate Fighting Championship) (“Certainly with [sic] somebody puts up a song that is created . . . the amount of damage if [a takedown] is within 24 or 48 hours is significantly different than it is to one of our events which is a live Pay Per View, and the value of our product goes down significantly. It is very perishable every minute that goes by.”).

⁶ *Id.* at 55 (statement of Rep. Bob Goodlatte, Member, H. Comm. on the Judiciary).

⁷ While there have been relatively few discussions of the ambiguity of this expeditious removal requirement, some commentators have given the topic thoughtful consideration. See

Although other issues, such as the DMCA's § 512(c) knowledge requirement, have garnered more attention from both commentators and courts,⁸ the increasing speed with which the media industry is changing is likely to make the meaning of "expeditious" more significant. This Note will examine the gap between what a reasonably expeditious response means to a copyright owner and what it means to a service provider, and will propose several private and legislative avenues that can help bridge this gap. Part I discusses the problems that the traditional television industry faces in the digital age and provides an overview of the DMCA provisions that are most often invoked to address these problems. Part II explains the unique position of live content in the DMCA's removal regime and the difficulties that both copyright owners and online service providers face when it comes to defining what constitutes an expeditious takedown of infringing content. Finally, Part III proposes methods by which content may be removed more "expeditiously" without imposing untenable burdens on copyright owners or online service providers, and discusses potential objections to these approaches.

I. BACKGROUND

A. *The Traditional Broadcasting Business Model and the Digital Age*

One of the latest developments in the doom-and-gloom predictions for traditional media⁹ began in early August 2015, when many of the largest media

Darin M. Klemchuk & Ryan Jones, *How Quickly Do Internet Companies Need to Take Content Down Following a DMCA Notice?*, J. INTERNET L., Apr. 2015, at 35-38 (recognizing the uncertainty and lack of case law around the term "expeditious" and giving recommendations to online service providers for compliance); Keith Black, Note, *Technical Knockout: How Mixed Martial Arts Will Change Copyright Enforcement on the Web*, 21 FORDHAM INTELL. PROP. MEDIA & ENT. L.J. 739, 772-73 (2011) (describing the term "expeditiously" as "ambiguous" and detailing the urgency of rapid takedowns for live pay-per-view broadcasters). See generally Debra Weinstein, Note, *Defining Expeditious: Uncharted Territory of the DMCA Safe Harbor Provision*, 26 CARDOZO ARTS & ENT. L.J. 589 (2008) (detailing the DMCA takedown procedure, the ambiguity of the meaning of "expeditious," and recommending a three-pronged reasonableness test for courts to apply).

⁸ In general, these disputes involve copyright owners claiming that providers of online services infringed their copyrights by providing access to copyrighted material originally circulated by users of those services. See, e.g., *UMG Recordings, Inc. v. Shelter Capital Partners LLC*, 718 F.3d 1006, 1011-14 (9th Cir. 2013); *Viacom Int'l, Inc. v. YouTube, Inc.*, 676 F.3d 19, 28-30 (2d Cir. 2012). To date, much of the litigation involving the DMCA has focused on what level of awareness a service provider must have regarding infringements before protection under the DMCA is forfeited. See, e.g., *Viacom*, 676 F.3d at 30-35 (discussing the knowledge provisions of § 512(c)(1)(A)). In contrast, the expeditious removal component of the safe harbor has been considered only summarily. See *infra* notes 72-77 and accompanying text.

⁹ "Traditional media" generally refers to print or broadcast mediums that pre-date the Internet. Cf. Note, *The Single Publication Rule and Online Copyright: Tensions Between*

companies saw their market values significantly decline over concerns of their ever-decreasing cable subscriber base.¹⁰ The slide in share prices reflected a persistent concern over the increasing trend of “cord-cutting,” the term given to subscribers cancelling their television subscriptions; the sell-off began shortly after the Walt Disney Company discussed a drop in the subscriber numbers of ESPN,¹¹ a channel which is seen as a staple of the subscription-based model.¹² Around the same time as these sell-offs, data came in showing that subscribers’ cancellations of their paid-television services in the second quarter of 2015 had increased by seventy-six percent from that same period in 2014.¹³

The increase in “cord-cutting” has occurred alongside the now-ubiquitous presence of residential broadband Internet connections, and not surprisingly the drop in pay-television subscriptions has been attributed to internet-based methods of viewing media.¹⁴ As “over-the-top”¹⁵ services such as Amazon Prime, Netflix, and HBO NOW proliferate, viewers are increasingly able to drop their television packages for cheaper services that offer viewing experiences

Broadcast, Licensing, and Defamation Law, 123 HARV. L. REV. 1315, 1317-19 (2010) (distinguishing between “traditional” mediums—such as television platforms and newspapers—and Internet mediums in the context of defamation law).

¹⁰ See Emily Steel & Brooks Barnes, *TV Stocks Fall Sharply on Worries over Future*, N.Y. TIMES, Aug. 6, 2015, at B1 (“Along with Disney’s decline were sharp drops in the stocks of other large media companies. . . . [Some] said that the industrywide sell-off illuminated long-term fears about the fate of traditional media companies in a new digital world, where viewers are canceling their cable and satellite subscriptions . . .”).

¹¹ Jon Lafayette, *Media Stocks Hit with a Bundle of Trouble*, BROADCASTING & CABLE (Aug. 6, 2015, 2:33 AM), <http://www.broadcastingcable.com/news/currency/media-stocks-hit-bundle-trouble/143127> [<https://perma.cc/24JT-94MQ>] (“The wave started with the Walt Disney Co. on Tuesday when CEO Bob Iger tried to address concerns that falling subscriber numbers were forcing ESPN to cut costs . . .”).

¹² See Emily Steel, *Investors Await, Warily, Latest Results from Media*, N.Y. TIMES, Nov. 3, 2015, at B4 (describing how Disney’s cost cutting at ESPN “scared investors, who worried that the rest of the industry was in peril if even ESPN, with its valuable sports programming, was not immune to the threat of cord-cutting”).

¹³ Mike Farrell, *Cord-Cutters Drive Pay TV Q2 Sub Losses*, MULTICHANNEL NEWS (Aug. 9, 2015, 4:30 PM), <http://www.multichannel.com/news/cable-operators/cord-cutters-drive-pay-tv-sub-q2-losses/392850> [<https://perma.cc/U939-R7E3>].

¹⁴ E.g., Mike Farrell, *Subscriber Losses Point to Cord Cutting*, MULTICHANNEL NEWS (May 18, 2015, 8:00 AM), <http://www.multichannel.com/news/distribution/subscriber-losses-point-cord-cutting/390691> [<https://perma.cc/NG36-CBFB>] (describing an industry analyst’s assertions that the growth of over-the-top services is accelerating the rate of cord-cutting).

¹⁵ “Over-the-top” platforms refer to video services that are delivered over the Internet, independent—or, over-the-top—of traditional broadcast television. E.g., Gannon Hall, *Why 2011 Is Being Called the Year of the “Cable Cut,”* BUS. INSIDER (Dec. 30, 2010, 2:49 PM), <http://www.businessinsider.com/what-will-it-take-to-make-over-the-top-video-successful-2010-12> [<https://perma.cc/3TE3-5ZFR>].

more closely tailored to their own media preferences.¹⁶ Traditional subscription television providers have come to rely most on live content—particularly sports—to retain customers. Channels showing popular live sports have been relatively safe from this trend away from subscription television—sports content is generally considered “appointment television,” which consumers insist on watching as it happens.¹⁷ Media mogul Rupert Murdoch’s comment in 1996 that sports content would be used as “a ‘battering ram’ and a lead offering in all our pay television operations” demonstrates this importance of live sports to traditional television.¹⁸ The value of broadcast rights to popular competitions reflects the importance of sports content; ESPN currently pays \$1.9 billion per year just for rights to the National Football League’s Monday Night Football games,¹⁹ while last year NBC signed a deal with the English Premier League worth \$1 billion over six years.²⁰

Outside the traditional subscription television model, live sports are also part of a significant pay-per-view market—for example, the Ultimate Fighting Championship (“UFC”), the popular mixed martial arts competition, is estimated to bring in hundreds of millions of dollars in annual revenue, much of that from pay-per-view sales.²¹ Likewise, pay-per-view boxing matches can attract significant consumer interest, with some events bringing in estimates of

¹⁶ See, e.g., Tom Risen, *Comcast, Netflix and the Death of Cable*, U.S. NEWS & WORLD REP. (Jul. 16, 2015, 3:50 PM), <http://www.usnews.com/news/articles/2015/07/16/comcast-netflix-and-the-death-of-cable> [https://perma.cc/T83C-638V] (“Budget-conscious customers are avoiding expensive cable-TV bundles and instead opting for less-expensive a la carte access offered by Web-based services like Hulu and Netflix.”).

¹⁷ Zachary Zagger, *Sports Media Attys Must Adapt as Consumers Cut the Cord*, LAW360 (Aug. 4, 2015, 5:56 PM), <http://www.law360.com/articles/686110/sports-media-attys-must-adapt-as-consumers-cut-the-cord> [https://perma.cc/8FWK-8DHR].

¹⁸ Bobby McMahon, *English Soccer Teams Enjoy World’s Richest TV Bounty by a Mile*, FORBES (May 7, 2014, 9:30 AM), <http://www.forbes.com/sites/bobbymcmahon/2014/05/07/english-soccer-teams-enjoy-worlds-richest-tv-bounty-by-a-mile/> [https://perma.cc/U5LP-9UN9].

¹⁹ *NFL Renews Television Deals*, ESPN.COM (Dec. 14, 2011), http://www.espn.com/nfl/story/_/id/7353238/nfl-re-ups-tv-pacts-expand-thursday-schedule [https://perma.cc/AQ9J-V7GX] (describing the television rights deals for CBS, Fox, NBC, and ESPN).

²⁰ Richard Sandomir, *In NBC Deal, English Soccer Proves a Force in America*, N.Y. TIMES, Aug. 11, 2015, at B8 (detailing both ESPN’s deal with the NFL and NBC’s deal with the English Premier League).

²¹ See, e.g., Black, *supra* note 7, at 743 (estimating 2010 pay-per-view buys as totaling nearly \$360 million); John S. Nash, *What Investors Are Being Told About UFC Revenues*, BLOODY ELBOW (Oct. 20, 2015, 7:30 AM), <http://www.bloodyelbow.com/2015/10/20/9547333/what-deutsche-bank-moodys-and-standard-poors-tell-us-about-the-ufc> [https://perma.cc/8UK5-SXE2] (estimating UFC’s share of annual pay-per-view revenues to range from \$82 million to \$219 million between 2006 and 2014).

\$400 million in pay-per-view revenue for the broadcasters and promoters.²² Many major sports leagues are adopting, in part, similar pay-per-view or a la carte models, offering fans internet-based options for viewing select games.²³

Alongside this growth of over-the-top services has been an explosion in online piracy of television content.²⁴ As fewer people subscribe to traditional cable or satellite television services, the volume of copyright-infringing web traffic has increased dramatically.²⁵ Websites that allow users to stream video and host their own content have become hotbeds of copyright infringement, engendering disputes that pit rights holders against web services and tech companies.²⁶ Such sites function by allowing users to create their own pages on which they can upload and display video content²⁷—the most popular example of such a site is YouTube.²⁸ These online services use various methods to allow other users to view content streamed through the first user's page.²⁹ The unauthorized streams hosted on such websites are often aggregated by

²² Richard Sandomir, *Mayweather-Pacquiao Bout Shatters Pay-Per-View Records*, N.Y. TIMES, May 13, 2015, at B14.

²³ See, e.g., *Subscribe*, NHL.TV, https://subscribe.nhl.com/?affiliateId=nhl_VideoEnhancedNavLink [<https://perma.cc/BN3H-XDLM>] (last visited Oct. 16, 2016) (offering season or single team subscriptions for out-of-market games); *Which NBA LEAGUE PASS Product Is Right for Me?*, NBA, http://nba.custhelp.com/app/answers/detail/a_id/11/session/L3RpbWUvMTQ3MzYyMDI4OS9zaWQvUjJsaEduLW0%3D [<https://perma.cc/D278-NNEM>] (last visited Sept. 11, 2016) (offering season, team, or single game subscriptions for out-of-market games).

²⁴ See, e.g., John Eggerton, *Online Piracy Report: Problem Is Big, Growing*, MULTICHANNEL NEWS (May 17, 2013, 2:02 PM), <http://www.multichannel.com/news/tv-everywhere/online-piracy-report-problem-big-growing/306997> [<https://perma.cc/3YEE-WB2S>] (describing how the volume of pirated video streaming increased 471.9% from 2010 to 2013).

²⁵ See *id.* (citing a study finding that “432 million unique users sought infringing content in January 2013 alone” and that infringing use accounted for “approximately 23.8% of the total bandwidth [used] by all residential and business users in [North America, Europe, and the Asia-Pacific]”).

²⁶ See, e.g., *Viacom Int'l, Inc. v. YouTube, Inc.*, 676 F.3d 19, 32-33 (2d Cir. 2012) (stating that, in suit by various media companies against YouTube, studies showed that over half of the streaming content on YouTube was infringing material).

²⁷ See NETRESULT, UPDATE ON DIGITAL PIRACY OF SPORTING EVENTS 2011, at 19-20 (2011), http://www.wipo.int/export/sites/www/ip-sport/en/pdf/piracy_report_2011.pdf [<https://perma.cc/96LS-J9G2>] (describing how User Generated Content (“UGC”) sites function).

²⁸ See Lara O'Reilly, *YOUTUBE ADRIFT: The World's Biggest Video Platform Risks Losing Its Dominance*, BUS. INSIDER (Mar. 2, 2015, 8:44 AM), <http://www.businessinsider.com/youtubes-dominance-is-under-threat-2015-2> [<https://perma.cc/4MB7-XKH8>] (describing YouTube as “the dominant video platform on the web”).

²⁹ See NETRESULT, *supra* note 27, at 19 (describing how such a service can use either a centralized or decentralized peer-to-peer system to distribute content).

“indexing” websites, which allow easy access for Internet users searching for such content.³⁰ Peer-to-peer streaming services also provide access to unauthorized live streams via a decentralized network in which users provide content and share bandwidth costs without significant use of any centralized service.³¹ Many of these peer-to-peer streaming services have been found to host significant volumes of copyright-infringing content.³² For many of those “cutting the cord,” viewing illegal content online is one way to fill in the gaps of content—often live content—not offered by over-the-top services.³³

Not surprisingly, then, online piracy of live and close-to-live content has become a focus of the media industry. Major American sports leagues have claimed that “millions of dollars have been lost to piracy,”³⁴ and the UFC has claimed that it is “potentially losing tens of millions of dollars a year from piracy.”³⁵ Sports leagues, Hollywood studios, and broadcasters have enlisted the aid of companies that patrol these online arenas and enforce copyrights on behalf of rights holders.³⁶ The DMCA and its § 512(c) “safe harbor” requirements are the primary method by which rights holders in the United States protect against internet-based copyright infringement.³⁷

³⁰ See Stephanie N. Horner, Comment, *DMCA: Professional Sports Leagues’ Answer to Protecting Their Broadcasting Rights Against Illegal Streaming*, 24 MARQ. SPORTS L. REV. 435, 438-39 (2014) (describing the operation of indexing websites in the context of illegal streaming of sports). An example of such a site is Rojadirecta, which aggregates links to video streams of various sports matches. ROJADIRECTA, <http://rojadirecta.me> [<https://perma.cc/3NP8-DZEL>] (last visited Sept. 12, 2016) (displaying a list of links to video streams of various live sports matches).

³¹ See NETRESULT, *supra* note 27, at 20-22.

³² See *id.* (listing several peer-to-peer video streaming services and describing infringements discovered).

³³ See Zach Epstein, *Now You Can Really Cut the Cord: Pirate TV Service Now Has 500 Free TV Channels*, BGR (June 22, 2015, 8:55 AM), <http://bgr.com/2015/06/22/free-streaming-tv-500-channels-movies-shows/> [<https://perma.cc/4HGP-ZKEA>] (“The biggest barrier for cord cutters today remains the same as it was a month ago and a year ago: live TV. . . . Now, however, there’s a pirate TV service that aims to change that . . .”).

³⁴ Josh Peter, *Leagues Wrestle with Digital Piracy*, USA TODAY, Oct. 8, 2014, at 1C.

³⁵ *Piracy of Live Sports Broadcasting over the Internet*, *supra* note 1, at 12 (testimony of Lorenzo J. Fertitta, Chief Executive Officer, Ultimate Fighting Championship).

³⁶ One of the major operators in the online rights-enforcement industry is Irdeto, a company that “helps top sports broadcasters and operators . . . protect their most valued content and live events.” *Content Owners & Rights Holders*, IRDETO, <http://irdeto.com/solutions/content-owners-rights-holders.html> [<https://perma.cc/7XUH-EK2F>] (last visited Sept. 13, 2016) (describing services provided to “studios, sports rights holders and broadcasters”). Irdeto’s clients include “one of the major professional sports leagues in North America” and the English Premier League. *Id.*

³⁷ See 17 U.S.C. § 512(c)(1) (2012).

B. *The DMCA's OCILLA Provisions and the § 512(c) Safe Harbor*

Title II of the DMCA—known as the “Online Copyright Infringement Liability Limitation Act”³⁸ (“OCILLA”)—was enacted to “provide certainty for copyright owners and Internet service providers with respect to copyright infringement liability online.”³⁹ When adopting OCILLA, Congress left the traditional copyright doctrines of contributory and vicarious liability undisturbed, deciding instead to enact a system of “safe harbor” exceptions “for certain common activities of service providers.”⁴⁰ These safe harbor provisions form the core of the DMCA’s OCILLA framework and cover four broad categories of activity: (1) “[t]ransitory digital network communications,” (2) “[s]ystem caching,” (3) “[i]nformation residing on systems or networks at direction of users,” and (4) “[i]nformation location tools.”⁴¹ If a domestic service provider⁴² qualifies for one of these safe harbors by satisfying the requirements outlined in 17 U.S.C. § 512, it is immunized from copyright infringement liability.⁴³ “Service provider,” in the context of the safe harbor provisions, is given a rather expansive definition, encompassing “entit[ies] offering the transmission, routing, or providing of connections for [unmodified] digital online communications” and—more relevant to this Note’s purposes—entities providing “online services or network access.”⁴⁴ This latter definition has been found to include websites that facilitate distribution and streaming of user-uploaded materials, such as YouTube.⁴⁵ In this Note, websites and related

³⁸ Digital Millennium Copyright Act, Pub. L. No. 105-304, § 201, 112 Stat. 2860, 2877 (1998) (giving short title for Title II of DMCA).

³⁹ S. REP. NO. 105-190, at 2 (1998).

⁴⁰ *Id.* at 19.

⁴¹ 17 U.S.C. § 512(a)-(d).

⁴² The Copyright Act extends protection over conduct within the United States, and the DMCA should be understood as applying only to the category of service providers who operate domestically. *See id.* § 502(b) (establishing a remedy of injunctive relief that “may be served anywhere in the United States on the person enjoined,” and that is “operative throughout the United States.”); 2 VED P. NANDA & DAVID K. PANSIUS, LITIGATION OF INTERNATIONAL DISPUTES IN U.S. COURTS § 8:44 (2d ed. 2014) (“Most generally stated, U.S. copyright law may be based only on United States conduct.”). This Note limits discussion to service providers subject to the DMCA, and thus does not touch upon the many difficulties in protecting copyrighted work disseminated by service providers outside the jurisdiction of the United States.

⁴³ 17 U.S.C. § 512(a)-(d).

⁴⁴ *Id.* § 512(k)(1)(A)-(B).

⁴⁵ *See, e.g.,* UMG Recordings, Inc. v. Shelter Capital Partners LLC, 718 F.3d 1006, 1020 (9th Cir. 2013) (holding that a website allowing users to stream video, which features an “automated process” for making files accessible, “is a service that falls within § 512(c); Viacom Int’l, Inc. v. YouTube, Inc., 676 F.3d 19, 38-40 (2d Cir. 2012) (holding that the “playback of videos on ‘watch’ pages,” transcoding of user-uploaded video, and the function of linking to “related videos” all falls within the ambit of “service provider” as defined by § 512(k)(1)(B)).

services that fit within the latter definition of “service provider” are referred to as Online Service Providers (“OSPs”).⁴⁶

The § 512(c) safe harbor, which covers “storage at the direction of a user of material that resides on a system or network controlled or operated by or for” the OSP,⁴⁷ is the provision upon which online copyright protection often hinges.⁴⁸ In order to qualify for immunity from liability under § 512(c), an OSP must satisfy the following criteria: (1) it must have no actual or constructive (“red flag”)⁴⁹ knowledge of infringing content, or upon gaining such knowledge it must “expeditiously” act to remove such content; (2) it must not “receive a financial benefit directly attributable to the infringing activity” where the OSP “has the right and ability to control” the infringing activity; and (3) the OSP must, “upon notification of claimed infringement . . . , respond[] expeditiously to remove, or disable access to, the material that is claimed to be infringing.”⁵⁰ This last clause, known as the “notice and take-down” procedure,⁵¹ sets out a process by which copyright holders or their agents may notify OSPs of allegedly infringing content, and by which OSPs must then remove “expeditiously.” The notice-and-takedown system started as voluntary, private arrangements between copyright holders and OSPs,⁵² and it is the primary tool by which rights holders pursue copyright protection online.⁵³

⁴⁶ I use this term to separate providers of online services from the other entities often included in the definition of “service provider,” such as internet service providers and data-routing services.

⁴⁷ 17 U.S.C. § 512(c)(1).

⁴⁸ It should be noted that it is unclear whether § 512(c) applies to peer-to-peer services. Given their generally decentralized nature, they are arguably outside the section’s realm of “storage at the direction of a user.” See Annemarie Bridy, *Is Online Copyright Enforcement Scalable?*, 13 VAND. J. ENT. & TECH. L. 695, 716-19 (2011) (“Inasmuch as P2P file sharing shifts the locus of infringing activity from the storage function to the transmission function, it places such activity beyond the knowledge and control of the ISP and thus beyond the reach of the [notice-and-takedown] scheme created by § 512(c).”). As Professor Annemarie Bridy has observed, the DMCA’s design is well suited for more centralized services (e.g., YouTube), but it is a poor match for decentralized systems, such as peer-to-peer services. *Id.* at 712-25. This Note focuses on hosted content and does not delve into the DMCA’s ability, or lack thereof, to reach peer-to-peer services.

⁴⁹ See *Viacom*, 676 F.3d at 31 (describing § 512(c)(1)(A)(ii)’s constructive knowledge provision as the “so-called ‘red flag’ knowledge provision”).

⁵⁰ 17 U.S.C. § 512(c)(1)(A)-(C) (emphasis added).

⁵¹ S. REP. NO. 105-190, at 45 (1998).

⁵² *Id.* (describing § 512(c)(1)(C) as formalizing “a cooperative process that has been employed to deal efficiently with network-based copyright infringement”).

⁵³ See *Piracy of Live Sports Broadcasting over the Internet*, *supra* note 1, at 54 (testimony of Christopher S. Yoo, Professor of Law and Communication, University of Pennsylvania Law School) (describing the DMCA as “envision[ing] content owners sending a web site address to a web site and forcing them to take it down”); NETRESULT, *supra* note 27, at 4 (“[L]ive takedown tools are the most commonly used means of expeditious removal of content

For this Note's inquiry, the first and third requirements for the § 512(c) safe harbor are the most significant.⁵⁴ Both an OSP's knowledge of infringing content under § 512(c)(1)(A) and its receipt of proper notice under § 512(c)(1)(C) trigger a duty to remove infringing or allegedly infringing content expeditiously.⁵⁵ Courts have held that to trigger this duty of removal under the § 512(c)(1)(A) knowledge requirements, the OSP must have actual or constructive knowledge of specific instances of copyright infringement.⁵⁶ As such, an OSP's generalized awareness of infringing activity, absent awareness of "specific and identifiable instances of infringement," does not disqualify the OSP from safe harbor under § 512(c).⁵⁷ In other words, if an OSP does not know of particular material on specific pages that infringes a copyright, it does not have a duty under § 512(c)(1)(A)(iii) to remove the material expeditiously. This limited construction of the knowledge requirements reflects OCILLA's underlying policy of allocating to copyright holders the burden of searching for and investigating potential infringement.⁵⁸

The third § 512(c) safe harbor requirement, the notice-and-takedown provision, dovetails with the knowledge requirements in § 512(c)(1)(A); upon receiving a proper notification of infringement, an OSP must expeditiously

for rights holders."); Bridy, *supra* note 48, at 712 (describing the DMCA as "most well-known" for the § 512(c) "notice-and-takedown framework"); Peter, *supra* note 34, at 1C (detailing the UFC's use of takedown notices on an event night); Joe Kloc, *World Cup Fans Flock to Pirated Streaming Sites*, NEWSWEEK (July 2, 2014, 2:12 PM), <http://www.newsweek.com/world-cup-fans-flock-pirated-streaming-sites-257043> [<https://perma.cc/HTY2-3DQG>] (stating that one content protection agency "sent 2,000 takedown notices to streaming sites" during the first few weeks of the 2014 World Cup).

⁵⁴ The second § 512(c) safe harbor requirement, dubbed the "Control and Benefit" requirement, *Viacom*, 676 F.3d at 36, is tangential to this Note's discussion of expeditious notice-and-takedown and thus is not addressed.

⁵⁵ See 17 U.S.C. § 512(c)(1)(A)(iii) (requiring expeditious removal of material after an OSP obtains actual or constructive knowledge of infringing material); *id.* § 512(c)(1)(C) (requiring expeditious removal of material after an OSP receives proper notification of infringement).

⁵⁶ See *UMG Recordings, Inc. v. Shelter Capital Partners LLC*, 718 F.3d 1006, 1021-22 (9th Cir. 2013) (holding that § 512(c)(1)(A)(i)-(ii) refers to knowledge of specific instances of infringement); *Viacom*, 676 F.3d at 30-31 (same).

⁵⁷ *Viacom*, 676 F.3d at 32.

⁵⁸ See 17 U.S.C. § 512(m)(1) (stating that the safe harbor provisions are not conditioned upon "a service provider monitoring its service or affirmatively seeking facts indicating infringing activity, except to the extent consistent with a standard technical measure"); *UMG Recordings*, 718 F.3d at 1029-30 ("[Section] 512(c) 'impose[s] no such investigative duties on service providers,' and 'place[s] the burden of policing copyright infringement . . . squarely on the owners of the copyright.'" (alterations in original) (quoting *Perfect 10, Inc. v. CCBill LLC*, 488 F.3d 1102, 1113-14 (9th Cir. 2007))); *Viacom*, 676 F.3d at 35 ("DMCA safe harbor protection cannot be conditioned on affirmative monitoring by a service provider."); Bridy, *supra* note 48, at 714-15 ("[T]he DMCA is quite clear that active monitoring for infringing content is not a burden that Congress saw fit to allocate to service providers . . .").

remove access to “take down” the allegedly infringing material.⁵⁹ Before claiming protection of a safe harbor, an OSP must designate an agent to receive such takedown notices.⁶⁰ Additionally, the OSP must list on its website, “in a location accessible to the public, . . . the name, address, phone number, and electronic mail address of the agent.”⁶¹ For a notice to be effective under § 512(c), the copyright owner or agent must submit it in compliance with the elements specified in § 512(c)(3)(A); one requirement is that the notification must identify the work being infringed and “information reasonably sufficient to permit the [OSP] to locate the material.”⁶² A user whose content is removed pursuant to a proper notice may submit a “counter notification” to the OSP, which will reinstate the content within ten to fourteen business days unless the copyright owner or agent notifies the OSP that it has filed suit to enjoin the allegedly infringing activity.⁶³ For a counternotice, a user must provide personal details, including his or her address.⁶⁴ Such counternotices are rare, likely due to the fear of legal action, the ease of reposting content elsewhere, and/or unawareness of legal rights such as fair use.⁶⁵

Congress’s decision to “leave current [copyright] law in its evolving state” and instead limit service provider liability via these safe harbors⁶⁶ means that central legal rights such as fair use remain undisturbed. There can be significant tension with accommodating fair uses of copyrighted material within the DMCA’s current framework.⁶⁷ Copyright law recognizes that “some opportunity for fair use of copyrighted materials has been thought necessary to fulfill copyright’s very purpose, ‘[t]o promote the Progress of Science and useful

⁵⁹ 17 U.S.C. § 512(c)(1)(C).

⁶⁰ *Id.* § 512(c)(2) (“The limitations on liability established in this subsection apply to a service provider only if the service provider has designated an agent to receive notifications of claimed infringement . . .”).

⁶¹ *Id.* § 512(c)(2)-(2)(A).

⁶² *Id.* § 512(c)(3)(A)(i)-(iii).

⁶³ *Id.* § 512(g)(2)(A)-(C) (detailing actions OSPs must take to avoid liability to users for removing users’ allegedly infringing content).

⁶⁴ *Id.* § 512(g)(3)-(3)(D).

⁶⁵ See Jennifer M. Urban & Laura Quilter, *Efficient Process or “Chilling Effects”?* *Takedown Notices Under Section 512 of the Digital Millennium Copyright Act*, 22 SANTA CLARA COMPUTER & HIGH TECH. L.J. 621, 644-45, 679 (2006) (finding only seven counternotices filed in response to 876 takedown notices in survey, which included notices for § 512(c) and § 512(d), as well as some notices not clearly within either safe harbor); David E. Ashley, Note, *The Public as Creator and Infringer: Copyright Law Applied to the Creators of User-Generated Video Content*, 20 FORDHAM INTELL. PROP. MEDIA & ENT. L.J. 563, 588, 592 (2010) (describing the counter notification process as “complicated, time-consuming, and potentially costly for Users unfamiliar with their legal rights,” and that a user is “unlikely to risk being brought into court to fight for his or her fair use rights”).

⁶⁶ S. REP. NO. 105-190, at 19 (1998).

⁶⁷ See *infra* notes 158-184 and accompanying text (discussing the difficulties with content removal practices under the DMCA considering fair use).

Arts.’’⁶⁸ The Copyright Act expressly provides for a fair use defense, which involves a multifactor consideration of how the copyrighted work was used in the allegedly infringing material.⁶⁹ Use of a copyrighted work for commentary or criticism, such as in a parody, often qualifies as fair use.⁷⁰ The degree to which the new work “transforms” the old one is a key consideration.⁷¹

*Viacom International, Inc. v. YouTube, Inc.*⁷² and *UMG Recordings, Inc. v. Shelter Capital Partners LLC*,⁷³ the two most influential recent cases involving § 512(c), focused on the § 512(c)(1)(A) knowledge requirement and the § 512(c)(1)(B) “control and benefit” provision, and did not significantly touch upon § 512(c)(1)(C).⁷⁴ The case law behind the notice-and-takedown procedure is less developed, with much of it involving whether plaintiffs submitted notices that were DMCA-compliant under § 512(c)(3).⁷⁵ A significant development arose recently in the Court of Appeals for the Ninth Circuit in *Lenz v. Universal Music Corp.*,⁷⁶ which held that “a copyright holder must consider the existence of fair use before sending a takedown notification.”⁷⁷ However, no decisions to date have given significant treatment to a central questions related to the OSP’s duty to remove content under both § 512(c)(1)(A)(iii) and § 512(c)(1)(C): What are the temporal parameters for an *expeditious* removal of material?

⁶⁸ *Campbell v. Acuff-Rose Music, Inc.*, 510 U.S. 569, 575 (1994) (quoting U.S. CONST. art. I, § 8, cl. 8).

⁶⁹ 17 U.S.C. § 107(1)-(3).

⁷⁰ *Acuff-Rose*, 510 U.S. at 579 (“We thus line up with the courts that have held that parody, like other comment or criticism, may claim fair use under § 107.”).

⁷¹ *See, e.g., id.* (“Suffice it to say now that parody has an obvious claim to transformative value . . .”).

⁷² 676 F.3d 19 (2d Cir. 2012).

⁷³ 718 F.3d 1006 (9th Cir. 2013).

⁷⁴ *Id.* at 1015 n.5 (“We do not address . . . whether, upon notification, [the OSP] expeditiously removed or disabled access to infringing material under § 512(c)(1)(C).”); *Viacom*, 676 F.3d at 30-38 (discussing § 512(c)(1)(A)(i)-(iii) and § 512(c)(1)(B) at length).

⁷⁵ *See, e.g., UMG Recordings*, 718 F.3d at 1025-26 (holding informal emails from copyright holders deficient under § 512(c)(3)); *Perfect 10, Inc. v. CCBill LLC*, 488 F.3d 1102, 1112-1113 (9th Cir. 2007) (“Since Perfect 10 did not provide effective notice [pursuant to § 512(c)(3)], knowledge of infringement may not be imputed to [the OSP] based on Perfect 10’s communications.”); *Wolk v. Kodak Imaging Network, Inc.*, 840 F. Supp. 2d 724, 746-47 (S.D.N.Y. 2012) (describing a compliant notice under § 512(c)(3) and the finding that eleven of plaintiff’s notices did not satisfy these requirements).

⁷⁶ 815 F.3d 1145 (9th Cir. 2016), *petition for cert. filed*, 85 U.S.L.W. 3069 (U.S. Aug. 16, 2016) (No. 16-217).

⁷⁷ *Id.* at 1153. This holding and its potential repercussions are discussed *infra* at notes 167-184 and accompanying text.

II. EXPEDITIOUS REMOVAL AND THE UNIQUE POSITION OF LIVE CONTENT

One aspect of “expeditious” is clear: whether an OSP responded expeditiously is a question of fact not susceptible to a one-size-fits-all answer. As noted in the DMCA’s legislative history, “[b]ecause the factual circumstances and technical parameters may vary from case to case, it is not possible to identify a uniform time limit for expeditious action.”⁷⁸ While no appellate courts have weighed in on this issue,⁷⁹ district courts have given substantial leeway to OSPs when deciding what qualifies as expeditious.⁸⁰ Importantly, no court has yet decided this issue in the specific context of a suit involving copyrights for live-broadcasted content.⁸¹

Expeditious removal can be anything but rapid. In *Capitol Records, LLC v. Vimeo, LLC*,⁸² the district court found that, in response to a takedown notice identifying 170 infringing videos, “given the number of infringing videos at issue, *the three and one-half week period it took Vimeo to comply with [the] notice constitutes expeditious removal.*”⁸³ The district court also held that a “one-day response time” to remove between one to six videos referenced in a notice was expeditious.⁸⁴ Other courts have similarly held that removal of infringing content within one to several days of receiving notice constituted expeditious removal.⁸⁵ There seems to be only one instance of a court holding

⁷⁸ S. REP. NO. 105-190, at 44 (1998).; *see also* Perfect 10, Inc. v. Google, Inc., No. CV 04-9484, 2010 WL 9479059, at *9-10 (C.D. Cal. July 26, 2010) (“[L]egislative history suggests . . . that whether a service provider’s removal or disabling of access to infringing material was expeditious ordinarily would be a factual rather than a legal inquiry, unless the delay is unusually lengthy and not justifiable.”).

⁷⁹ Klemchuk & Jones, *supra* note 7, at 36 (“Surprisingly, very little case law directly addresses what qualifies as an expeditious response following proper notice or how that definition changes depending on the context of the infringement.”); *see also supra* note 74 and accompanying text (describing how the two lead cases on 17 U.S.C. § 512(c) from the Second and Ninth Circuits do not significantly address the expeditious requirement).

⁸⁰ *See* Black, *supra* note 7, at 770-72 (criticizing “the current trend of deference to website owners for any delay in providing appropriate remedies [that] has been pervasive among courts across the country”).

⁸¹ *See* Klemchuk & Jones, *supra* note 7, at 36-38 (describing the lack of case law discussing the expeditious requirement and stating that “one Delaware district court is preparing to address the issue head on”). The Delaware case that Professors Darren Klemchuk and Ryan Jones reference, however, was dismissed after mediation and never determined the question of expeditiousness. *See infra* note 102 and accompanying text.

⁸² 972 F. Supp. 2d 500 (S.D.N.Y. 2013), *aff’d in part, vacated in part*, 826 F.3d 78 (2d Cir. 2016).

⁸³ *Id.* at 536 (emphasis added).

⁸⁴ *Id.*

⁸⁵ *See, e.g.,* Io Group, Inc. v. Veoh Networks, Inc., 586 F. Supp. 2d 1132, 1150 (N.D. Cal. 2008) (holding that removal of material “on the same day the notice is received (or within a few days thereafter)” constituted expeditious action); Black, *supra* note 7, at 770-71 (“[N]o court has yet held a service provider liable for failure to take down content expeditiously. In

that a removal failed this requirement—in *Rosen v. Global Net Access, LLC*,⁸⁶ the court found that a two-month gap between an OSP's receipt of a DMCA-compliant infringement notice and its removal of the content was, unsurprisingly, not expeditious.⁸⁷

Importantly, however, none of these cases involved content shown contemporaneously with an original live broadcast by an authorized rights holder.⁸⁸ Only one case seems to address the topic of expeditiousness in the context of removing copyright-infringing live content.⁸⁹ This case, *Square Ring, Inc. v. Doe-1*,⁹⁰ featured a boxing promoter who held the copyright to a boxing match broadcasted live via pay-per-view.⁹¹ The OSP defendant, Ustream.tv (“Ustream”), operated a website where users could stream live video content through their own personalized pages.⁹² The boxing promoter, Square Ring, made numerous requests in advance of its March 21, 2009 fight for either access to a “tool to simultaneously manage infringing content on [Ustream’s] site” or a Ustream contact dedicated to quickly removing infringing content the night of the fight.⁹³ Ustream supplied no such a tool, nor a dedicated employee.⁹⁴ In response to general requests by Square Ring to remove all infringing material,

fact, the *Viacom* court seemed satisfied that *almost all* of the takedown notices were acted upon by the next business day.” (footnote omitted); *cf.* *Perfect 10, Inc. v. Google, Inc.*, No. CV 04-9484, 2010 WL 9479059, at *9-10 (C.D. Cal. July 26, 2010) (holding that, under § 512(d)’s expeditious requirement, which parallels § 512(c), a genuine issue of material fact existed as to whether Google had expeditiously removed infringing links within the period they alleged of one to two weeks from the notice).

⁸⁶ No. CV 10-2721-DMG (E), 2014 WL 2803752 (C.D. Cal. June 20, 2014).

⁸⁷ *Id.* at *5 (“By removing the infringing material some two months later, [Global Net Access] failed to act expeditiously.”).

⁸⁸ *Capitol Records* involved uploaded videos containing plaintiffs’ copyrighted music recordings. *Capitol Records*, 972 F. Supp. 2d at 506-07. In *Io Group*, the content in question involved copyrighted clips of adult films. *Io Group*, 586 F. Supp. 2d at 1136-37. *Google* involved takedown requests targeting Google’s links to sites that infringed plaintiff’s copyrighted pictures. *Google*, 2010 WL 9479059, at *1. Finally, the content in *Rosen* consisted of pictures copyrighted by the plaintiff photographer. *Rosen*, 2014 WL 2803752, at *1.

⁸⁹ *See* Klemchuk & Jones, *supra* note 7, at 36-38.

⁹⁰ No. 09-563, 2015 WL 307840 (D. Del. Jan. 23, 2015).

⁹¹ *Id.* at *1-3.

⁹² *Id.* at *1 (“Ustream . . . describes itself as ‘a user-generated content website, allowing millions throughout the world to freely view and share a wide variety of content ranging from news, politics, music, entertainment, education, and personal events through its site and services.’”). Since the *Square Ring* case, Ustream has increasingly focused instead on “cloud-based, end-to-end video solutions for media and enterprises.” *About Ustream*, USTREAM.TV, <https://www.ustream.tv/our-company/about> [<https://perma.cc/NZ2C-67U2>] (last visited Sept. 29, 2016).

⁹³ *Square Ring*, 2015 WL 307840, at *2.

⁹⁴ *Id.* at *2-3.

Ustream “ran targeted keyword searches across” its service and removed infringing material found within a few days of the fight.⁹⁵ On the evening of the fight, Square Ring delivered DMCA-compliant notices to Ustream’s designated agent, which identified three specific addresses on Ustream’s service that were streaming the fight without authorization; Ustream removed the material two days later, on the evening of March 23.⁹⁶

During the action, Ustream moved for summary judgment, claiming protection under the § 512(c) safe harbor.⁹⁷ Square Ring opposed the motion by arguing that “a reasonable juror could conclude that Ustream did not, under the circumstances, act expeditiously . . . but was instead ‘willfully blind’ to the ‘red flag knowledge’ provided by” the prior notices.⁹⁸ The court, after recognizing the lack “of any relevant Third Circuit precedent addressing” the DMCA safe harbors,⁹⁹ then recognized “the complete lack of legal precedent for this factual situation” involving the timeliness of removing a stream of a live event.¹⁰⁰ Accordingly, the court held that “material issues of fact” precluded granting Ustream’s summary judgment motion because “[a] number of questions of fact exist as to what precisely was done during the time period . . . [between] the March 17, 2009 notices and the ultimate takedown on March 23, 2009, a full forty-eight hours after the DMCA-compliant notices were received.”¹⁰¹ This factual issue remains unresolved, as the case was dismissed after the parties underwent mediation.¹⁰²

If this question is open to debate by a reasonable jury, then a forty-eight hour timespan between notice and takedown for a broadcast of a live event *could* be expeditious—according to the court in *Square Ring*, the crucial issue was what Ustream did after receiving these three notices. Presumably, circumstances could merit such a delay—Ustream staff handling a large volume of takedown requests, for example, might make the forty-eight hour response window reasonable. Likewise, a jury might also consider the particular damage incurred by the broadcaster of a live event during such a timeframe and find that, considering the harm done, a faster response would have been reasonable.¹⁰³ To

⁹⁵ *Id.*

⁹⁶ *Id.* at *3.

⁹⁷ *Id.* at *4 (“UStream asserts that it should be awarded summary judgment . . . because there is no genuine issue of material fact that UStream meets the threshold eligibility and specific requirements for Safe Harbor protection under the DMCA.”).

⁹⁸ *Id.*

⁹⁹ *Id.*

¹⁰⁰ *Id.* at *7.

¹⁰¹ *Id.*

¹⁰² Order Granting Stipulation of Dismissal Filed by Ustream.tv, Square Ring Inc. v. Doe-1 et al., No. 09-563-GMS (D. Del. June 24, 2015), ECF No. 142 (dismissing with prejudice Square Ring’s claim against UStream).

¹⁰³ See Klemchuk & Jones, *supra* note 7, at 37 (explaining how a jury might consider the degree of harm suffered by the plaintiff when determining whether a forty-eight hour removal

understand the potentially intractable divide between what an OSP and an owner of rights to live content consider reasonably expeditious, we must consider the business interests and copyright-enforcement burdens of each party.

A. *Expeditious Removal from the Copyright Owner's Perspective*

Takedown requests by live broadcasters are particularly time-sensitive. Unlike other copyrightable material, a live broadcast (especially one that is pay-per-view) accumulates much, if not most, of its value during its live airing. Often—especially in the context of sports—such content is consumed once by consumers.¹⁰⁴ Thus, a removal of the material that occurs after the live airing has little chance of pushing viewers towards legal viewing methods that generate revenue for rights holders; the event is over, and those viewers who consumed the content via the infringing material already concluded their “appointment.”¹⁰⁵ Likewise, a channel showing such infringing material is unlikely to be showing that same content hours later (not to mention forty-eight hours later), thus making it likely that the content removed is something other than the copyrighted work listed in the takedown notice.¹⁰⁶ An owner of a copyright for such live content therefore has a particularly acute interest in a nearly immediate takedown by the OSP as compared to a normal copyright enforcement scenario.

For such rights holders, then, there is a very limited window for an expeditious takedown. As described above, the copyright owner has the burden of identifying infringing content and notifying the OSP;¹⁰⁷ so, before the OSP's duty of expeditious removal is even triggered, a rights holder must search for and identify infringing material, then draft and submit a compliant takedown notice to the OSP's designated agent.¹⁰⁸ Such a process can take time, of course,

timeframe was expeditious).

¹⁰⁴ Cf. Black, *supra* note 7, at 771 (“[E]very minute that passes makes it less likely that someone will pay full price for a smaller and smaller fraction of [a live] event.”).

¹⁰⁵ It is important to note that not all those who watch an infringing live stream of a broadcast are necessarily “consumers”—many might not pay for that content if illegal methods were unavailable. Undoubtedly, for any given set of viewers tuned into an illegal feed with a large volume of viewers, at least some are not potential customers of that content's broadcaster (and thus, either directly or indirectly, the copyright owner). See Floris Kreiken & David Koepsell, *Coase and Copyright*, 2013 U. ILL. J.L. TECH. & POL'Y 1, 14.

¹⁰⁶ There is some literature on the particular concern that a live broadcaster has with expeditious removal and the specific business harms incurred in these circumstances. See, e.g., Black, *supra* note 7, at 771-72 (“Every second that a stream is live and being watched is of absolutely critical importance. . . . [T]o successfully recover even some of [the rights holder's] profits, it must draft and send a compliant takedown notice, and the recipient of the notice must actually take down the content, all within the three-hour window [of the live event].”).

¹⁰⁷ See *supra* note 58 and accompanying text.

¹⁰⁸ Copyright owners or their agents may not always have to draft formal notices and submit them via, for example, email; as discussed *infra* at notes 142-166 and accompanying text, some OSPs have provided copyright owners with tools that automate this process.

and only after the copyright holder submits that notice does the OSP's duty to expeditiously remove the content arise. From the perspective of an owner of rights to live content, the time required for these processes further cuts into the already narrow timeframe required for a takedown to be expeditious in any meaningful sense.

B. *Expeditious Removal from the OSP's Perspective*

An interpretation of "expeditious" that resolves these issues on the copyright-owner side could in turn create significant burdens for OSPs. The notice-and-takedown procedure does not seamlessly self-execute, and OSPs incur a burden by employing compliance staff and implementing technologies related to that compliance.¹⁰⁹ Internet services can involve huge amounts of traffic and content—for example, in March 2010, "site traffic on YouTube had soared to more than 1 billion daily video views,"¹¹⁰ and by 2015 there were "400 hours of video uploaded to YouTube per minute."¹¹¹ At the time of the *Square Ring* litigation, Ustream facilitated approximately 1.5 million live streams per month.¹¹² The number of DMCA takedown requests OSPs receive can be staggering; during one week in December 2015, Google Search received 17,264,572 takedown requests.¹¹³ Considering the volume of content handled by OSPs, and the thousands—or, for Google Search, millions—of takedown requests received daily, can we expect an OSP to remove content within the narrow timeframe considered expeditious by a live broadcaster?

If employees or agents of the OSP manually handle the notice-and-takedown procedure, such an expectation could impose massive costs on OSPs. For example, if Google "hired lawyers to personally review all of the requests it received during the week of September 9, 2013," Google would have to hire "700 lawyers devoted solely to reviewing these requests."¹¹⁴ Many OSPs have

¹⁰⁹ See Section 512 of Title 17: Hearing Before the Subcomm. on Courts, Intellectual Prop. & the Internet, 113th Cong. 12 (2014) [hereinafter *Section 512 of Title 17*] (statement of Professor Sean M. O'Connor, Professor of Law and Founding Director, Entrepreneurial Law Clinic, University of Washington (Seattle)) (describing the "burden" incurred by OSPs due to the notice-and-takedown procedure as "significant, especially for small to medium service providers that cannot afford a compliance staff").

¹¹⁰ *Viacom Int'l, Inc. v. YouTube, Inc.*, 676 F.3d 19, 28 (2d Cir. 2012).

¹¹¹ Sarah Perez, *YouTube Says It Will Offer Legal Protection of up to \$1 Million for Select Video Creators Facing DMCA Takedowns*, TECHCRUNCH (Nov. 19, 2015), <http://techcrunch.com/2015/11/19/youtube-says-it-will-offer-legal-protection-to-some-video-creators-facing-dmca-takedowns/> [<https://perma.cc/ZPH2-EA4V>].

¹¹² *Square Ring, Inc. v. Doe-1*, No. 09-563, 2015 WL 307840, at *1 (D. Del. Jan. 23, 2015).

¹¹³ *Transparency Report: Requests to Remove Content Due to Copyright*, GOOGLE, <https://www.google.com/transparencyreport/removals/copyright/> [<https://perma.cc/2484-26DH>] (last visited Sept. 19, 2016). It should be noted that this figure does not include *YouTube*, a service for which DMCA-related statistics are not as readily available.

¹¹⁴ Adam Eakman, Note, *The Future of the Digital Millennium Copyright Act: How*

conducted manual reviews of takedown notices, which consist of an employee and/or lawyer examining the request prior to removing the content.¹¹⁵ In such instances, depending on the size of the company and the volume of takedown requests, a response time of a few hours to a day could be considered expeditious.¹¹⁶ The OSP's legal staff would have to review each notice, locate the allegedly infringing content, and remove it. As of 2013, Google took at least several hours to respond to takedown requests.¹¹⁷ Considering the ever-increasing volume of infringing content and subsequent takedown notices, it is likely that requiring a takedown to occur within minutes or slightly longer would require staffing levels that would impose an untenable burden on the OSP—an outcome that seems at odds with the DMCA's insistence on copyright owners bearing the burden of enforcement and its goal of allowing the Internet to flourish without undue burdens from threats of copyright liability.¹¹⁸

In recent years, the notice-and-takedown procedures have shifted towards automated systems that can remove content very quickly.¹¹⁹ Such processes have the potential to resolve this difficulty of expeditious takedown of live content.¹²⁰ However, the DMCA does not require automatic takedowns¹²¹ and, if an agent of the OSP must review the takedown request, a reasonably

Automation and Crowdsourcing Can Protect Fair Use, 48 IND. L. REV. 631, 640-41 (2015).

¹¹⁵ See, e.g., *Square Ring*, 2015 WL 307840, at *2 (detailing UStream's procedure in which employees manually reviewed incoming DMCA requests); *Capitol Records, LLC v. Vimeo, LLC*, 972 F. Supp. 2d 500, 515-16 (S.D.N.Y. 2013) (describing how a lawyer at Vimeo would review takedown requests).

¹¹⁶ Courts have often found a response time of several days sufficiently expeditious. *Supra* notes 83-87 and accompanying text.

¹¹⁷ *Section 512 of Title 17, supra* note 109, at 42 (testimony of Katherine Oyama, Senior Copyright Policy Counsel, Google, Inc.) (estimating an average of "less than 6 hours" to respond to takedown requests); Anjanette H. Raymond, *Heavyweight Bots in the Clouds: The Wrong Incentives and Poorly Crafted Balances that Lead to the Blocking of Information Online*, 11 NW. J. TECH. & INTEL. PROP. 473, 495 (2013) (estimating an average of "11 hours to respond to take-down requests.").

¹¹⁸ Cf. 17 U.S.C. § 512(i)(2)(C) (2012) (defining "standard technical measures" as those that "do not impose substantial costs on service providers or substantial burdens on their systems or networks").

¹¹⁹ Daniel Seng, *The State of the Discordant Union: An Empirical Analysis of DMCA Takedown Notices*, 18 VA. J.L. & TECH. 369, 441 (2014) ("[W]e have changed from a manual system with individual review of notices to an automated system . . . us[ing] computers to process huge numbers of notices and requests with very short turnaround times.").

¹²⁰ See *infra* notes 142-184 and accompanying text (discussing the costs and benefits of automatic takedown systems).

¹²¹ See 17 U.S.C. § 512(c)(2)-(2)(A) (requiring only that OSPs designate "an agent to receive notifications," and provide that agent's "name, address, phone number, and electronic mail address"); *supra* note 115 (listing cases in which defendants manually reviewed takedown requests).

expeditious response from the OSP's perspective might be significantly later than an owner of live content considers appropriate or even useful.

C. *The Difficulty of Finding a Judicial Resolution Reasonable to Both Parties*

This divide between what “expeditious” means to an owner of live content and to an OSP illuminates a serious shortcoming with copyright protection of live content under the DMCA: How should a judge construe the meaning of that term in a copyright lawsuit challenging an OSP's removal of live content as not being expeditious? As the court noted in *Square Ring*, there is a “complete lack of legal precedent” for what factual scenarios constitute a sufficiently timely or tardy response to a takedown request of live content.¹²² In *Square Ring*, Ustream removed the content after forty-eight hours, and the court denied summary judgment because a “number of questions of fact exist as to what precisely was done during the time period” between receiving the notices and removing the content.¹²³ If Ustream's employees had instead removed the content after four or five hours and were shown to have been diligently processing takedown requests, it is difficult to imagine a court finding such actions not to be expeditious; especially as, outside of the live-content context, courts have generally found a timeframe of a day or two to be expeditious.¹²⁴ Yet, in such a scenario, the outcome would be the same for the copyright owner as it would be with a forty-eight hour takedown—either way, the event would have concluded and the harm to the copyright owner would have been fully realized.

The dearth of case law examining the expeditious requirement means that there is little guidance as to what elements should be considered in an inquiry into expeditious removal. There has been at least one proposal for a “reasonableness test” that enumerates three prongs for judges to weigh when determining whether an OSP's response to a takedown notice was expeditious.¹²⁵ This test would consider: (1) whether the OSP “operate[d] and maintain[ed] up-to-date software to detect and remove copyright violations”; (2) if it “respond[ed] appropriately and within a reasonable amount of time”; and (3) whether an expectation of a faster response would create “an undue burden, in cost or resources” on the OSP.¹²⁶ The adoption of such a reasonableness test, it was argued, would “make it easier for courts and parties to determine the

¹²² *Square Ring, Inc. v. Doe-1*, No. 09-563, 2015 WL 307840, at *7 (D. Del. Jan. 23, 2015).

¹²³ *Id.*

¹²⁴ See *supra* notes 83-87 and accompanying text.

¹²⁵ Weinstein, *supra* note 7, at 609-17 (proposing a three-pronged reasonableness test for determining the question of whether a removal was done expeditiously). It should be noted that this reasonableness test does not specifically address concerns of removing live content expeditiously.

¹²⁶ *Id.* at 609.

adequacy of a service provider's response," and would result in "more predictable outcomes."¹²⁷

It is unclear, however, how such a reasonableness test would satisfy the DMCA's goal of providing "greater certainty to service providers concerning their legal exposure for infringements"¹²⁸ in the context of claims involving infringement of live content. *Viacom* and *UMG Recordings* now likely preclude judicial consideration of the first prong,¹²⁹ and the second and third prongs would not greatly aid in resolving this difficulty of expeditious action in regards to live content. Certainly, the second prong's requirement that the response be appropriate and reasonably timely makes sense, and could consider "whether the service provider had to consult with an attorney" and the adequacy of the takedown notice.¹³⁰ Such considerations, however, are unlikely to bridge the divide between what is timely from a copyright owner's perspective and what is practically feasible from an OSP's perspective.¹³¹ If an OSP's procedure

¹²⁷ *Id.* at 621.

¹²⁸ S. REP. NO. 105-190, at 20 (1998).

¹²⁹ Both *Viacom* and *UMG Recordings* reiterated that "safe harbor protection cannot be conditioned on 'a service provider monitoring its service.'" *Viacom Int'l, Inc. v. YouTube, Inc.*, 676 F.3d 19, 41 (2d. Cir. 2012) (quoting 17 U.S.C. § 512(m)(1) (2012)); *see also* *UMG Recordings, Inc. v. Shelter Capital Partners LLC*, 718 F.3d 1006, 1022 (9th Cir. 2013) (describing Congress's "considered policy determination" that placed the enforcement burden on copyright owners). Furthermore, it should be noted that the "expeditious" requirement relates to how a service provider acts after knowledge of infringement can be imputed to it. *See* 17 U.S.C. § 512(c)(1)(A)(iii), (c)(1)(C). An expectation that the OSP "expedite[s] the amount of time" to remove content by implementing automated detection software, Weinstein, *supra* note 7, at 609-12, conflates how an OSP must "accommodate[] and . . . not interfere with standard technical measures," 17 U.S.C. § 512(i)(1)(B), with how it must respond *after* knowledge of infringement can be imputed to it. By placing the onus on an OSP to search out infringement in order to qualify for safe harbor protection, this prong would likely violate the DMCA's position that OSPs are not required to search out copyright infringement by their users. *See supra* note 58 (citing the case law holding that the DMCA imposes no affirmative search requirements on OSPs); *cf.* *UMG Recordings, Inc. v. Veoh Networks Inc.*, 665 F. Supp. 2d 1099, 1113 (C.D. Cal. 2009) ("If courts were to find that the availability of superior filtering systems or the ability to search for potentially infringing files establishes—without more—that a service provider has 'the right and ability to control' infringement, that would . . . impermissibly condition the applicability of section 512(c) on a 'service provider monitoring its service or affirmatively seeking facts indicating infringing activity.'" (quoting 17 U.S.C. § 512(m))). While technology offers a viable option for resolving the problem of determining what constitutes expeditious removal of infringing content, a requirement that OSPs adopt specific technology before satisfying the § 512(c) expeditious removal provisions seems outside the judicial discretion available under the DMCA. Congress could, however, impose such requirements by amending the DMCA, and this possibility is discussed in Part III.

¹³⁰ Weinstein, *supra* note 7, at 613-14.

¹³¹ *See supra* notes 105-124 and accompanying text (discussing the various costs to copyright owners and OSPs associated with different response times).

involves consulting with an attorney and that consultation requires several hours, this prong could favor the OSP despite rendering any subsequent takedown useless to the owner of the live content. Likewise, the third prong's consideration of whether a faster response would impose an "undue burden" on the OSP¹³² does not help close the gap between the needs of live content owners and OSPs. This factor would consider the resources—both financial and human—available to the OSP, as well as the volume of traffic it receives.¹³³ Such a consideration of the burden imposed on the OSP by a faster response accounts for what is reasonable for the OSP, but does not necessarily aid the live content owner's acute need for a particularly rapid response.

Ultimately, while such a reasonableness test might aid a judge in gauging the effort taken by an OSP to respond quickly to a takedown notice, it does not help resolve the problem of what qualifies as expeditious action in regards to live content. As discussed, the question of whether a removal was done expeditiously is one of fact¹³⁴ and the inquiry focuses on how the OSP's factual situation relates to its response time, as seen in both this proposed reasonableness test and in cases considering expeditiousness.¹³⁵ There has been some criticism that this focus on the OSP's burden ignores the plight of content owners pursuing time-sensitive takedowns.¹³⁶ As has been discussed in this Part, that criticism reflects a fair concern that the current interpretation of expeditious action provides little protection for owners of live content. But should the timespan of what constitutes expeditious action shift in relation to whether the content targeted is live and time-sensitive?

It is difficult to see how a construction of expeditiousness that is so fluid would function properly. First, if an OSP's delay in responding to a takedown notice is because it is reviewing the request, why should the type of content targeted "limit the time that the [OSP] has to conduct a due diligence inquiry" into the takedown request?¹³⁷ More importantly, assuming that the OSP is responding to takedown notices within several hours—expeditiously, at least for less time-sensitive content—how could it be expected to identify which of those

¹³² Weinstein, *supra* note 7, at 615.

¹³³ *Id.* at 615-16 (describing factors to consider under the third prong).

¹³⁴ See *supra* note 78 and accompanying text.

¹³⁵ See, e.g., *Square Ring, Inc. v. Doe-1*, No. 09-563, 2015 WL 307840, at *7 (D. Del. Jan. 23, 2015) ("A number of questions of fact exist as to what precisely was done during the time period in which UStream received the March 17, 2009 notices and the ultimate takedown on March 23, 2009 . . ."); *Capitol Records, LLC v. Vimeo, LLC*, 972 F. Supp. 2d 500, 536 (S.D.N.Y. 2013) ("[T]he Court finds that, *given the number of infringing videos at issue*, the three and one-half week period it took Vimeo to comply with this notice constitute[d] expeditious removal." (emphasis added)).

¹³⁶ E.g., Black, *supra* note 7, at 769 ("The court does not seem to consider (and neither do some like-minded critics) that the burden is too onerous on copyright holders, especially those copyright holders for whom time is of the essence in protecting their rights.").

¹³⁷ Klemchuk & Jones, *supra* note 7, at 37.

requests allow for a normal response time and which instead require a response within a more stringent construction of expeditious? From the viewpoint of the OSP, such a fluid construction of expeditiousness would fall far short of providing “greater certainty . . . concerning their legal exposure”¹³⁸ and could seem unfairly retrospective when applied by a judge during litigation. The inquiry into the timeliness of an OSP’s response would then morph into some sort of requirement that an OSP properly triage its queue of takedown requests so that it responds to requests based on urgency. Although a system of prioritizing takedown requests might be possible—perhaps via a tiered notice-submission system—such a wide-ranging, systemic solution seems outside the realm of judicial discretion and more suited to a congressional amendment of the DMCA.¹³⁹

The problem of expeditious removal of live content therefore seems difficult to resolve on a case-by-case basis during litigation. To date, judges have shown deference to OSPs when it comes to the timeliness of a takedown response, and it is unclear how a judge could responsibly shift this analysis to favor instead a live-content owner without risking unpredictable outcomes and confusion over when safe harbor protection is forfeited. Considering the great divide between what live content holders consider expeditious removal—a few minutes to perhaps an hour¹⁴⁰—and the current latitude courts have given to OSPs’ response times—several hours to days¹⁴¹—it is not feasible to expect this issue to be resolved through litigation and judicial decision-making. Copyright owners seeking more rapid removal of their time-sensitive content must then consider other avenues for policing infringement of their content.

¹³⁸ S. REP. NO. 105-190, at 20 (1998) (explaining that Title II provides certainty to service providers in regard to legal exposure for infringement, while preserving incentives for services providers and copyright owners to cooperate in dealing with infringement).

¹³⁹ See *Badaracco v. Comm’r*, 464 U.S. 386, 398 (1984) (“Courts are not authorized to rewrite a statute because they might deem its effects susceptible of improvement.”); *cf.* *Schafer v. Astrue*, 641 F.3d 49, 61 (4th Cir. 2011) (refusing to “strike out ahead of Congress” and “update and revise [the Social Security Act] in light of changing technological circumstances”). The OCILLA provisions already establish a notice-and-takedown framework, see *supra* notes 50-53 and accompanying text, and set out various requirements for OSPs regarding “standard technical measures,” 17 U.S.C. § 512(i)(1)(B) (2012), and adoption of a “repeat infringer[]” policy, § 512(i)(1)(A). A requirement that OSPs prioritize takedown requests would seem to be a mandate specific to the formal framework of OCILLA and thus out of reach of judicial fiat.

¹⁴⁰ See Black, *supra* note 7, at 770-72.

¹⁴¹ See *supra* notes 78-87 (discussing the broad range of response times found to be expeditious).

III. POTENTIAL REFORMS FOR MAKING CONTENT REMOVAL SUFFICIENTLY EXPEDITIOUS

Legislative reform and private ordering between OSPs and content holders both offer paths towards resolving the concerns involved with expeditious content removal. Recent private arrangements between OSPs and content owners offer examples of how the problem can be mitigated, if not solved, and such private ordering has, to a significant extent, already reduced the impact of takedown timeframes that are longer than content owners find appropriate. These private efforts can in turn inform future legislative reform of the DMCA framework to allow for more efficient and expeditious content protection online. This Part examines the automatic detection and takedown tools that many OSPs have implemented, discuss the downsides of such technology, and propose that a form of these systems should become required for qualification under the § 512(c) safe harbor.

A. *Private Ordering and the Use of Automatic and Automated Takedown Systems*

Automation has come to play an increasingly significant role in online copyright enforcement in recent years.¹⁴² Content owners or their agents often generate takedown requests automatically,¹⁴³ and many OSPs have implemented services that allow certain content owners to automatically disable allegedly infringing content.¹⁴⁴ When OSPs implement automatic takedown systems, user access to content may be disabled within moments of the takedown request,¹⁴⁵ thereby eliminating any complaint by the content owner that the removal was not sufficiently expeditious. While the use of such automation is controversial

¹⁴² See Seng, *supra* note 119, at 441 (“[W]e have changed from a manual system with individual review of notices to an automated system . . .”).

¹⁴³ See Eakman, *supra* note 114, at 633 (“For large companies like Microsoft, the task of managing DMCA requests for their vast array of copyrights has been entrusted to outside firms which use an automated process to efficiently generate DMCA takedown requests for their clients.”).

¹⁴⁴ See *id.* (“Other websites that host third-party material use an in-house automated process to remove potentially infringing material.”). YouTube, for example, allows copyright owners to “manage their content,” which includes options such as blocking “a whole video from being viewed.” *How Content ID Works—YouTube Help*, YOUTUBE, <https://support.google.com/youtube/answer/2797370?hl=en> [<https://perma.cc/5F4W-8LNE>] (last visited Jan. 15, 2016). YouTube’s ContentID system is available to “copyright owners who meet specific criteria” such as owning “exclusive rights to a substantial body of original material that is frequently uploaded by the YouTube user community.” *Id.*

¹⁴⁵ See, e.g., *Piracy of Live Sports Broadcasting over the Internet*, *supra* note 1, at 26 (testimony of Michael Seibel, Chief Executive Officer, Justin.tv, Inc.) (describing the “copyright protection system” implemented by Justin.tv, an online service that allowed users to live-broadcast their content, which “enables copyright owners to instantly remove their content from the site”).

and presents numerous problems,¹⁴⁶ it does offer a solution for the quandary of how live content can be removed expeditiously without unduly burdening either the OSP or the content owner.

Generally, automated takedown systems can be divided into two different forms. First, some OSPs provide content owners with access to internal tools that allow them to disable access to streams that allegedly infringe their copyrights.¹⁴⁷ These tools, which involve manual use by live agents of content owners,¹⁴⁸ allow for immediate takedowns at the direction of the content owner. Second, automated identification and removal processes—otherwise known as digital rights management (“DRM”) processes—automatically scour an OSP’s service to identify and remove infringing material.¹⁴⁹ Unlike the internal takedown tools that rely on human input, a DRM system involves a fully automated process in which an algorithm identifies and either removes the content or executes a different command if the content owner desires, such as monetizing the material by allowing ads to be run alongside it.¹⁵⁰ For these systems, content owners first upload a reference file that provides the DRM

¹⁴⁶ Automated takedown systems—including systems using “robots” to detect and remove allegedly infringing content—have been widely criticized for blocking content that is noninfringing. *See, e.g.*, Raymond, *supra* note 117, at 480 (“An automated system cannot make these nuanced legal determinations [such as fair use] and as a result will over-block media.”); Wendy Seltzer, *Free Speech Unmoored in Copyright’s Safe Harbor: Chilling Effects of the DMCA on the First Amendment*, 24 HARV. J.L. & TECH. 171, 182-83 (2010) (“[Automated detection systems] may be able to identify a match between posted material and known copyright-claimed works, [but] cannot determine the relevant *copyright* status of the posted work. What appear at first to be wholesale infringements may in fact be postings authorized by the copyright owner, fairly used excerpts, or even originals from which the claimant’s copy was derived.” (footnotes omitted)); Louis DiLorenzo & Marc S. Werner, Note, *I, (DRM) Robot: How DRM Systems Threaten the Viability of Online Live-Streaming Content*, 26 GEO. J. LEGAL ETHICS 631, 634 (2013) (“DRM robots have come under fire recently for wrongfully removing content that was not infringing.”). These are valid and important concerns, and represent the potential costs of a more expeditious removal regime. These issues are discussed further *infra* at notes 158-166 and accompanying text.

¹⁴⁷ *See, e.g.*, Ben Popper, *Periscopes, Pirates, and Pugilists: The Battle Between TV and Live Streaming Apps*, VERGE (May 8, 2015, 10:09 AM), <http://www.theverge.com/2015/5/8/8565983/periscope-meerkat-piracy-boxing-mayweather-pacquiao> [<https://perma.cc/LB9H-B8MR>] (“YouTube and Ustream allow content owners to sit inside the system and kill offending streams without having to file takedown notices.”); Brad Stone, *Pro Sports vs. the Web Pirates*, BLOOMBERG BUSINESSWEEK (Feb. 24, 2011, 5:00 PM), http://www.bloomberg.com/bw/magazine/content/11_10/b4218066626285.htm [<https://perma.cc/3PY5-YBWV>] (detailing how the UFC was able to remove allegedly infringing streams from Justin.tv using “a Web tool”).

¹⁴⁸ *See, e.g.*, Stone, *supra* note 147.

¹⁴⁹ *See* DiLorenzo & Werner, *supra* note 146, at 632-34 (describing the “mechanics” of “DRM robots”).

¹⁵⁰ *See id.*; *How Content ID Works—YouTube Help*, *supra* note 144.

system with a “fingerprint” of the copyrighted material.¹⁵¹ The system then uses that fingerprint to identify matching material on the OSP’s services, at which point it follows the content owner’s instructions on how to respond.¹⁵²

Both an internal takedown tool and a DRM system provide obvious benefits to content owners—the removal process occurs within moments after the content is identified (either manually by an agent or by a DRM robot). Thus, these procedures provide for immediate relief, as opposed to the likely substantial delay that occurs when an OSP responds manually to a takedown request.¹⁵³ DRM systems offer the further benefit of reduced costs to the content owner, and likely also to the OSP. Due to the fully automated nature of DRM systems, both entities require less staff to oversee rights protection and compliance and, for the content owner, such systems allow for a much more rapid identification (and thus a more rapid removal) of allegedly infringing content.¹⁵⁴

Many video streaming service providers—including YouTube—already offer these automated services to content owners.¹⁵⁵ Furthermore, many of these OSPs have implemented automated processes to detect infringement on live streams, allowing owners of live content to share the benefits of automated takedowns.¹⁵⁶ The adoption of these technologies reflects the move towards

¹⁵¹ DiLorenzo & Werner, *supra* note 146, at 633.

¹⁵² *Id.*

¹⁵³ See *supra* notes 105-108 and accompanying text (describing the potential harm caused by delays in responding to a takedown request).

¹⁵⁴ See DiLorenzo & Werner, *supra* note 146, at 634 (describing how DRM robots can “allow streaming sites to monitor” streams that are “only viewable for a short window of time”). While automated systems can provide such benefits to content owners and, to an extent, OSPs, they risk increasing the rate at which noninfringing material is victim to errant (or even fraudulent) takedown requests. See *id.* at 641-43; *infra* notes 158-166 and accompanying text.

¹⁵⁵ YouTube’s “Content ID” system allows owners of exclusive copyrights to manually remove content, and also to upload reference data into a system that automatically identifies allegedly infringing content and subsequently blocks, monetizes, mutes, or allows that content. *How Content ID Works—YouTube Help*, *supra* note 144; *Manual Claiming—YouTube Help*, YOUTUBE, https://support.google.com/youtube/answer/106984?hl=en&ref_topic=3011554 [https://perma.cc/FAE2-VSVH] (last visited Oct. 2, 2016). Justin.tv, a now-defunct live streaming service, offered both an internal takedown tool and a “live filtering” system that automatically detected and removed allegedly infringing content in real time. *Piracy of Live Sports Broadcasting over the Internet*, *supra* note 1, at 26 (Michael Seibel, Chief Executive Officer, Justin.tv, Inc.). Ustream.tv provides a takedown tool that allows content owners to automatically remove content on pages. Popper, *supra* note 147. Veoh.com has implemented an automated system to detect infringing content and remove it. See *UMG Recordings, Inc. v. Veoh Networks Inc.*, 665 F. Supp. 2d 1099, 1103 (C.D. Cal. 2009) (describing Veoh.com’s use of the automated detection service “Audible Magic”).

¹⁵⁶ See, e.g., *Piracy of Live Sports Broadcasting over the Internet*, *supra* note 1, at 26

“private ordering” between OSPs and content owners and towards partnerships that help resolve these copyright disputes privately, outside of the slow and expensive grind of litigation.¹⁵⁷ Thus, while the manual notice-and-takedown procedure still forms the backdrop of copyright protection under the DMCA, private arrangements between many OSPs and content owners have shifted much of the copyright protection activity into the realm of partially (in the context of an internal takedown tool) or fully (in the context of DRM robots) automated processes.

Automation of copyright protection can come at a cost, however, and the move towards automation has been widely criticized.¹⁵⁸ In a 2012 article about YouTube’s Content ID system, *Wired* wrote that “[s]cammers are using Content ID to steal ad revenue from YouTube video creators en masse” and that the “inability [of automation] to understand context and parody regularly leads to ‘fair use’ videos getting blocked, muted, or monetized.”¹⁵⁹ Commentators have criticized the use of automated detection and removal systems as being too immature for widespread use¹⁶⁰ and for incurring too high of a cost to First Amendment and copyright principles such as free speech and the dissemination of creative expression.¹⁶¹ The use of automated systems has allowed copyright owners to block content that is within fair use or the public domain,¹⁶² demonstrating the shortcomings of identifying allegedly infringing material from a “fingerprint” created by a content owner. Examples of DRM robots removing clearly noninfringing content abound, illustrating the cost of using

(Michael Seibel, Chief Executive Officer, Justin.tv, Inc.); *Copyright Issues with Live Streams and Hangouts on Air*, YOUTUBE, <https://support.google.com/youtube/answer/3367684> [<https://perma.cc/S2GN-22E4>] (last visited Oct. 2, 2016) (describing how Content ID scans “[a]ll live broadcasts for third party content”).

¹⁵⁷ See Annemarie Bridy, *Graduated Response and the Turn to Private Ordering in Online Copyright Enforcement*, 89 OR. L. REV. 81, 82-84 (2010); see also *Section 512 of Title 17*, *supra* note 109, at 16 (testimony of Annemarie Bridy, Alan G. Shepard Professor of Law, University of Idaho College of Law) (“Corporate copyright owners and OSPs have cooperated to automate the notice-and-takedown process to the greatest extent possible, thereby lowering the significant costs associated with enforcement for both groups.”).

¹⁵⁸ See *supra* note 146 (citing scholarship describing the risks automated takedown software poses).

¹⁵⁹ Andy Baio, *Copyright Kings Are Judge, Jury and Executioner on YouTube*, WIRED (Feb. 29, 2012, 1:29 PM), <http://www.wired.com/2012/02/opinion-baiodmcayoutube> [<https://perma.cc/H4DR-A3D5>].

¹⁶⁰ See, e.g., Raymond, *supra* note 117, at 500 (“[T]he technology is not yet ready for wide scale use and is often accompanied by policy that allows over claiming of material . . .”).

¹⁶¹ See, e.g., DiLorenzo & Werner, *supra* note 146, at 640-42 (“DRM robots threaten to chill expression via live content.”).

¹⁶² See *id.* at 637-39 (detailing how automated systems can remove materials that are noninfringing either because they are within fair use or are not even owned by the copyright claimant).

automation in the notice-and-takedown procedure.¹⁶³ DRM robots have blocked NASA's own video on YouTube of the Curiosity rover's landing on Mars (claim by a news service),¹⁶⁴ an authorized live stream on Ustream.tv of the 2012 Hugo Science Fiction Awards (claim by a television studio that had authorized the use of highlight clips from one of its shows),¹⁶⁵ and footage of the 2012 Democratic National Convention that had been uploaded to YouTube by the Democratic National Committee (claims by news services using the same footage).¹⁶⁶

To complicate matters, the Ninth Circuit recently held in *Lenz v. Universal Music Corp.*¹⁶⁷ that copyright owners must consider fair use prior to submitting a takedown notice.¹⁶⁸ Stephanie Lenz had uploaded a video to YouTube of her two children dancing to a song by Prince, in which the song "played loudly in the background" through the twenty-nine-second clip.¹⁶⁹ Universal Music ("Universal") included Lenz's video in a takedown request sent to YouTube that included "more than 200 YouTube videos Universal believed to be making unauthorized use of Prince's songs," and YouTube removed Lenz's video.¹⁷⁰ After Lenz protested the video's removal through two counternotices, YouTube reposted the video and Lenz subsequently sued Universal for misrepresentation of an infringement claim, as provided for under § 512(f) of the DMCA.¹⁷¹ In this provision, the DMCA establishes liability for damages for "[a]ny person who knowingly materially misrepresents under" that "material or activity is infringing."¹⁷²

On interlocutory appeal, the Ninth Circuit affirmed the district court's denial of summary judgment for Universal, holding that the DMCA "requires copyright holders to consider fair use before sending a takedown notification, and that . . . there [was] a triable issue as to whether the copyright holder formed a subjective good faith belief that the use was not authorized by law."¹⁷³ The court held that, if the use of the material fell within the Copyright Act's fair use exception,¹⁷⁴ it would be "wholly authorized by the law" and thus an authorized use that must be considered by the copyright holder prior to any submission of a takedown

¹⁶³ See, e.g., Raymond, *supra* note 117, at 474-77 (describing several instances of DRM robots blocking noninfringing content).

¹⁶⁴ *Id.* at 474-75.

¹⁶⁵ *Id.* at 475-76.

¹⁶⁶ *Id.* at 476.

¹⁶⁷ 815 F.3d 1145 (9th Cir. 2016).

¹⁶⁸ *Id.* at 1153.

¹⁶⁹ *Id.* at 1149.

¹⁷⁰ *Id.* at 1149-50.

¹⁷¹ *Id.* at 1150.

¹⁷² 17 U.S.C. § 512(f)-(f)(1) (2012).

¹⁷³ *Lenz*, 815 F.3d at 1148.

¹⁷⁴ 17 U.S.C. § 107 ("[T]he fair use of a copyrighted work . . . is not an infringement of copyright.").

notice.¹⁷⁵ While the copyright holder need not be correct in finding material to be outside the fair use exception, such a finding must have been made in “subjective good faith.”¹⁷⁶ The Ninth Circuit, by affirming the district court’s denial of summary judgment, left to a jury the question of “whether Universal’s actions were sufficient to form a subjective good faith belief about the video’s fair use.”¹⁷⁷ Lenz has filed a petition for certiorari and, as of this Note’s publication, the Supreme Court had invited the United States Solicitor General to file a brief.¹⁷⁸

As the *Lenz* court seemed aware,¹⁷⁹ this holding casts a pall over the growing use of DRM systems in handling the detection and takedown procedure for OSPs and copyright owners. A fair use consideration requires case-by-case analysis and the weighing of four factors that must not be “treated in isolation.”¹⁸⁰ How can a computer algorithm undertake a thoughtful, “case-by-case analysis” of fair use? Given the history of DRM systems removing fairly used content,¹⁸¹ it is difficult to imagine current DRM practices passing muster under *Lenz*. While there are suggestions for how automated systems can better account for fair use during the detection and takedown process,¹⁸² it is unclear how adequately a DRM system can consider fair use while still sufficiently policing actually-infringing content. On the other hand, considering the gargantuan volume of infringing content online and the corresponding volume of takedown requests, subjecting all takedown requests to human review seems impossible.¹⁸³ Any proponent of using automated systems to manage the “crush of voluminous

¹⁷⁵ *Lenz*, 815 F.3d at 1151-53.

¹⁷⁶ *Id.* at 1153-54.

¹⁷⁷ *Id.* at 1154.

¹⁷⁸ *Lenz v. Universal Music Corp.*, No. 16-27, 2016 WL 6394419, at 1* (U.S. Oct. 31, 2016) (inviting the Solicitor General to file a brief).

¹⁷⁹ The original opinion issued by the Ninth Circuit in *Lenz* addressed the potential compatibility of automated takedown systems in dicta, stating that such systems might still be able to “consider” fair use sufficiently. *See Lenz v. Universal Music Corp.*, 801 F.3d 1126, 1135-36 (9th Cir. 2015) (stating—but not holding—that “computer algorithms appear[] to be a valid and good faith middle ground for processing a plethora of content while still meeting the DMCA’s requirements to somehow consider fair use”), *amended by* 815 F.3d 1145 (9th Cir. 2016), *petition for cert. filed*, 85 U.S.L.W. 3069 (U.S. Aug. 16, 2016) (No. 16-217). Upon denying Universal’s petition for rehearing, the court amended the original opinion and deleted the two paragraphs discussing this issue. This brief discussion—and its subsequent deletion from the opinion—is discussed in the next section. *See infra* notes 233-236 and accompanying text.

¹⁸⁰ *Campbell v. Acuff-Rose Music, Inc.*, 510 U.S. 569, 577-78 (1994).

¹⁸¹ *See supra* notes 159-166 and accompanying text (providing examples of erroneous takedowns performed by DRM robots).

¹⁸² *See infra* notes 233-242 and accompanying text.

¹⁸³ *See* Leron Solomon, Note, *Fair Users or Content Abusers? The Automatic Flagging of Non-Infringing Videos by Content ID on YouTube*, 44 HOFSTRA L. REV. 237, 258 (2015) (describing the *Lenz* standard as “impos[ing] the unrealistic expectation of human review”).

infringing content”¹⁸⁴ online must therefore give thoughtful consideration to how DRM algorithms interact with the requirement set by *Lenz*.

The risks incurred by automation aside, both DRM systems and internal tools that allow copyright owners to automatically remove content offer ways to resolve this divide between what OSPs and copyright owners consider an expeditious response to a takedown notice. If material can be nearly-instantaneously removed, then the quandary of how to facilitate timely removal of live content is resolved. The adoption of such systems by OSPs demonstrates that the increase in private ordering between OSPs and copyright owners has covered significant ground in addressing this issue. The following Sections discuss the possible standardization of such systems through legislative reform and consider how these systems might interact with the holding in *Lenz* that fair use must be considered prior to issuance of a takedown notice.¹⁸⁵

B. *The Role of Congress to Encourage or Adopt Automated Systems*

As discussed, it is difficult to see how the timeframe that constitutes expeditious action can be sufficiently adjusted within the current DMCA framework to meet copyright owners’ expectations without imposing a substantial burden on OSPs.¹⁸⁶ While private ordering has lessened the impact of this issue on some copyright owners when removing content from certain OSPs, the increasing importance of live television programming and the ever-rising levels of content piracy¹⁸⁷ make an industry-wide answer to this problem important. If there is no reasonable middle ground as to what constitutes expeditious removal for live content under the DMCA’s current framework, then adjustments to the DMCA framework itself might offer an answer to this problem.

Some commentators have argued that the DMCA should require the use of DRM technology.¹⁸⁸ The DMCA already requires that OSPs “accommodate[] and do[] not interfere with standard technical measures,”¹⁸⁹ which are defined as “technical measures that are used by copyright owners to identify or protect

¹⁸⁴ *Lenz*, 801 F.3d at 1135.

¹⁸⁵ *Lenz*, 815 F.3d at 1153 (“[A] copyright holder must consider the existence of fair use before sending a takedown notification under § 512(c).”).

¹⁸⁶ See *supra* Section II.C (discussing the difficulty of any judicial resolution of this issue).

¹⁸⁷ See *supra* notes 13-36 and accompanying text (detailing recent changes and concerns in the traditional media industry).

¹⁸⁸ See, e.g., Lauren G. Gallo, Note, *The (Im)Possibility of “Standard Technical Measures” for UGC Websites*, 34 COLUM. J.L. & ARTS 283, 314 (2011) (“Given its preexisting universal use, fingerprinting technology should be taken to satisfy the qualifications for ‘standard technical measures’ set out in § 512(i)”); Weinstein, *supra* note 7, at 609-10 (proposing a test to determine expeditiousness that broadens “standard technical measures” to include technology such as “content-recognition software and digital fingerprinting”).

¹⁸⁹ 17 U.S.C. § 512(i)(1)(B) (2012).

copyrighted works . . . developed pursuant to a broad consensus of copyright owners and service providers in [a] . . . multi-industry standards process.”¹⁹⁰ These measures must be “available to any person on reasonable and nondiscriminatory terms”¹⁹¹ and must “not impose substantial costs on service providers or substantial burdens on their systems or networks.”¹⁹² Some have contended that DRM technology is supported by “all of the major broadcast networks and many of the major [user-generated content] sites,” is “widely used,” and available at minimal cost.¹⁹³ Because of this, it has been argued, DRM technology should be considered a requirement under the DMCA.¹⁹⁴ While including DRM technology in the DMCA’s “standard technical measures” requirement would perhaps be the easiest method to compel the adoption of these automated systems, it seems very unlikely that courts will construe this requirement as compelling implementation of something akin to a DRM system without inclusive, multi-industry ratification.¹⁹⁵

If these new systems are unlikely to be incorporated voluntarily or judicially into the current DMCA framework, then Congress should address the issue itself by either actively encouraging interindustry adoption of “standard technical measures” or amending the DMCA to set a new framework of what constitutes sufficient measures. Congressional efforts such as hearings—like the one held

¹⁹⁰ *Id.* § 512(i)(2)-(2)(A).

¹⁹¹ *Id.* § 512(i)(2)(B).

¹⁹² *Id.* § 512(i)(2)(C).

¹⁹³ Gallo, *supra* note 188, at 312. This argument leans heavily on the *Principles for User Generated Content Services*, <http://www.ugcprinciples.com/> [<https://perma.cc/HLF8-85ZN>] (last visited Sept. 13, 2016), a list of principles promulgated by major content owners and some OSPs, *see* Gallo, *supra* note 188, at 312. It is far from clear, however, that these principles reflect a “broad consensus of copyright owners *and service providers.*” 17 U.S.C. § 512(i)(2)(A) (emphasis added). The companies that have signed on to these principles mainly reflect some of the biggest content owners, but major OSPs such as YouTube are conspicuously absent from the list of supporters. *Principles for User Generated Content Services, supra.*

¹⁹⁴ *See, e.g.,* Gallo, *supra* note 188, at 314-15 (contending that fingerprinting technology should be considered a “standard technical measure”).

¹⁹⁵ *See* Bridy, *supra* note 157, at 92 (“Perhaps because the incentives of the parties whose consensus is required have historically been misaligned, . . . § 512(i) has not yet resulted in any concrete obligations for providers—although this may now be changing”); Maura L. Rees, *Ensuring Qualification for DMCA Section 512(c)*, in *MANAGING INTELLECTUAL PROPERTY ISSUES IN CYBERSPACE* (ASPATORE 2012), 2012 WL 2244968, at *2 (“The required standards-setting process has never occurred, and thus, there are currently no relevant ‘standard technical measures’ with which a defendant could be said to have interfered. Consequently, this prerequisite will always be met by defendants.”); *cf. Viacom Int’l, Inc. v. YouTube, Inc.*, 676 F.3d 19, 41 (2d Cir. 2012) (holding that YouTube’s restrictions on who could use their Content ID system did not disqualify it from the safe harbor because plaintiffs made “no argument that the content identification tools . . . constitute ‘standard technical measures’”).

in 2009 about online piracy of live sports—can “encourage players to come to the table to find common ground.”¹⁹⁶ Such an approach would better accord with the belief of many in these industries that “a marketplace solution with [service providers] to the piracy problem is viable” and that such private arrangements can be “implemented far more quickly than a regulatory proceeding.”¹⁹⁷ A major benefit of pushing OSPs and content owners to promulgate “standard technical measures” voluntarily is flexibility: by avoiding rigid statutory strictures, a “voluntary stakeholder process” could better account for technological change by leaving the standard setting to the industries responsible for their implementation.¹⁹⁸ As discussed, voluntary arrangements between major content owners and OSPs have greatly increased through the past years, in parallel with many congressional hearings in which legal scholars, OSPs, and content owners have testified as to the various successes and obstacles involved with the DMCA and copyright protection online.¹⁹⁹ While the efficacy of congressional attempts to encourage private ordering is far from clear, the increase of voluntary agreements between stakeholders represents a hopeful step towards an interindustry solution.

Even with substantial private agreements between major OSPs and content owners,²⁰⁰ smaller players on either side of the issue do not necessarily have the resources, the leverage, or the will to enter into or develop such advanced

¹⁹⁶ *Piracy of Live Sports Broadcasting over the Internet*, *supra* note 1, at 55 (testimony of Christopher S. Yoo, Professor of Law and Communication, University of Pennsylvania Law School).

¹⁹⁷ *H.R. 5353, The Internet Freedom Preservation Act of 2008: Hearing Before the Subcomm. on Telecomms. & the Internet*, 110th Cong. 41 (2008) (written statement of Mitch Bainwol, Chairman and Chief Executive Officer, Records Association of America); *cf.* *Section 512 of Title 17*, *supra* note 109, at 75 (statement of Rep. Steve Chabot, Member, H. Comm. on the Judiciary) (“It is my belief that the best solutions to this problem will be developed not by the government but rather by free-market collaboration.”).

¹⁹⁸ *See Section 512 of Title 17*, *supra* note 109, at 68 (testimony of Sean M. O’Connor, Professor of Law and Founding Director, Entrepreneurial Law Clinic, University of Washington (Seattle)) (advocating for private ordering because it would better account for future developments in technologies).

¹⁹⁹ *See, e.g., id.* at 2 (statement of Rep. Jerrold Nadler, Member, H. Comm. on the Judiciary) (describing the hearing as “part of our comprehensive review of the Nation’s copyright laws to explore how our copyright system is faring in the digital age”); *Piracy of Live Sports Broadcasting over the Internet*, *supra* note 1, at 1 (statement of Rep. John Conyers, Jr., Chairman, H. Comm. on the Judiciary) (“The Judiciary Committee has convened today’s hearing to discuss an emerging form of piracy, that of live broadcast in real-time . . .”).

²⁰⁰ *See, e.g., Section 512 of Title 17*, *supra* note 109, at 75 (testimony of Katherine Oyama, Senior Copyright Policy Counsel, Google, Inc.) (describing how YouTube has “licenses with all the major labels and all of the studios” for how to manage their copyrights with its Content ID system).

solutions.²⁰¹ Another approach would be for Congress to amend the DMCA to require some degree of automation in the takedown process. By enumerating specific technical measures that would be considered “standard” under § 512(i), Congress could compel OSPs to adopt particular forms of rights management systems. Alternatively, Congress could mandate that some sort of standards-setting process would occur in which OSPs and content owners promulgate standards that meet the requirements of “standard technical measures” under § 512(i).²⁰² A similar result could be achieved by enabling the Copyright Office, via a statutory grant, to promulgate rules that incorporate some degree of these private arrangements into the DMCA.²⁰³ In the latter scenario, the Copyright Office could consider input from various stakeholders during a notice-and-comment rulemaking process and, hopefully, strike a balance between improving the notice-and-takedown system while avoiding overly burdensome requirements on smaller OSPs.

Both private ordering and legislative action involve risks. Despite an increase in cooperation between OSPs and content owners, there seems little hope of any interindustry agreement on setting any “standard technical measures.”²⁰⁴ Without such a standard set, a system of private arrangements would likely leave out various smaller entities, leaving the enforcement framework incomplete. While legislative action could compel the implementation of more efficient notice-and-takedown practices, it is not clear if any detailed statutory amendment could create a “comprehensive solution” in a realm where the technology involved “changes so fast.”²⁰⁵ In any event, whether any

²⁰¹ *Cf. id.* at 101 (testimony of Professor Annemarie Bridy, Alan G. Shepard Professor of Law, University of Idaho College of Law) (“I think it really is important to remember on all sides of this issue that the different actors are differently situated, right? There are large corporate rights owners and small creators; there are also large Internet service providers . . . and then also very much smaller ones.”); *id.* at 32 (statement of Paul F. Doda, Global Litigation Counsel, Elsevier, Inc.) (“[N]otwithstanding a government-mandated process to create voluntary measures, some sites that need them the most will drag their feet.”).

²⁰² *See supra* notes 189-194 and accompanying text.

²⁰³ *See Section 512 of Title 17, supra* note 109, at 68 (testimony of Sean M. O’Connor, Professor of Law and Founding Director, Entrepreneurial Law Clinic, University of Washington (Seattle)) (“[T]he USPTO and the Copyright Office are both trying to work through some of these voluntary arrangements. It could very well be that Congress could do a change to the statute that would then authorize the Copyright Office to then do some regulations around it.”).

²⁰⁴ *See supra* note 195 (discussing how the standard-setting necessary to establish “standard technical measures” has not occurred and is unlikely to happen because the parties involved generally have conflicting incentives).

²⁰⁵ *Section 512 of Title 17, supra* note 109, at 95 (statement by Rep. Cedric Richmond, Member, H. Comm. on the Judiciary) (“I acknowledge that we are probably not the best people to act on this because technology changes so fast. . . . I don’t think anybody is going to like what we do because it wouldn’t be a comprehensive solution. So I would suggest that stakeholders get together and figure it out.”).

standardization of new notice-and-takedown processes comes via a voluntary, multi-industry agreement or via statutory change to the DMCA, the primary underlying question will be what sort of system is required by the new standard. The final sections of this Note discuss a few possible frameworks and their respective advantages and disadvantages.

C. *Potential Automation to Be Implemented Under a New Standard*

Whether adopted via the “standard technical measures” provision of § 512(i) or required via a specific government mandate, a new paradigm for the notice-and-takedown process could take several forms. At a minimum, the new standard should enable content owners to immediately remove content—if not by a fully automated DRM system, then by an online tool (such as a web form) that automatically removes the content at the location specified in the notice. Even Google has acknowledged that “making [the takedown] process as simple and automated and low cost as possible . . . is a place where automation can play a big role.”²⁰⁶

1. Internal Access Tools for Automatic Content Removal

Many OSPs already use a DMCA notice system that involves filling out an online form, rather than sending an email or other sort of traditional correspondence.²⁰⁷ These forms can streamline the notice process by providing standard fields matching the § 512 notice requirements;²⁰⁸ if claimants properly fill out each field, a DMCA-compliant notice is submitted to the OSP.²⁰⁹ These “fillable forms” make the notice process easier for claimants without imposing substantial costs on “smaller Internet companies.”²¹⁰ One of these fields necessarily includes “information reasonably sufficient to permit the [OSP] to locate the material”;²¹¹ the Courts of Appeals for the Second Circuit and Ninth Circuit have construed this provision as requiring that a notice “indicate specific and identifiable instances of infringement.”²¹² Thus, most properly submitted

²⁰⁶ *Id.* at 101 (testimony of Katherine Oyama, Senior Copyright Policy Counsel, Google, Inc.).

²⁰⁷ Seng, *supra* note 119, at 400 (“[S]ince January 2011, web form notices have prevailed over all other notice formats.”).

²⁰⁸ 17 U.S.C. § 512(c)(3) (2012) (providing the elements required for a compliant notification).

²⁰⁹ See Seng, *supra* note 119, at 398-400 (describing the benefits of using web forms and the shift towards using these forms over other submission mediums).

²¹⁰ *Section 512 of Title 17, supra* note 109, at 100-02 (testimony by Katherine Oyama, Senior Copyright Policy Counsel, Google, Inc., and Annemarie Bridy, Alan G. Shepard Professor of Law, University of Idaho College of Law) (describing how web forms streamline the submission process, make deficient submissions less likely, and are “not that expensive for most smaller Internet companies”).

²¹¹ 17 U.S.C. § 512(c)(3)(iii).

²¹² *Viacom Int’l, Inc. v. YouTube, Inc.*, 676 F.3d 19, 32 (2d Cir. 2012); see also UMG

online forms should already include the location of the allegedly infringing content; if so, an OSP should be able to respond to such a submission by automatically removing the content at the location referenced in the form.²¹³ The only real difference between this proposed process and the traditional one is that the response to the takedown notice would become automatic—the required fields would remain the same, and the full responsibility for identifying allegedly infringing material would remain with the content owner.

Currently, some OSPs allow content owners access to these sort of tools that “enable[] copyright owners to instantly remove their content from the site.”²¹⁴ YouTube’s Content ID system allows verified copyright owners to “manually remove” material (rather than rely on YouTube’s DRM system) and other OSPs provide analogous tools.²¹⁵ Unlike a DRM system, these automatic takedown forms do not aid in the identification of infringing material—rather, they provide for expedited processing of takedown notices. By doing so, these systems would resolve any disputes content owners have with whether a notice was acted on expeditiously by the OSP, as an allegedly infringing live stream could be removed more or less immediately after a content owner found the stream and submitted the online form.

Adopting these automated takedown forms as a standard requirement should not impose substantial costs even on smaller OSPs, and should not be particularly difficult to implement.²¹⁶ While fair use would remain an issue, this system would only require that the *removal* of content be automatic, not the *identification* of that content. Thus, this system would allow ample room for the manual review of material by the content owner before submitting the takedown notice, and as such should not pose any additional obstacles to considering fair use—a consideration that may now be a legal requirement for copyright holders

Recordings, Inc. v. Shelter Capital Partners LLC, 718 F.3d 1006, 1022-23 (9th Cir. 2013) (holding that a claimant must “identify specific infringing material”).

²¹³ The usual example here would be when a DMCA notice—in this context, submitted via a fillable form—provides a specific web address for the content. An automated system could then use this unique identifier to pinpoint the exact content in question and remove it.

²¹⁴ *Piracy of Live Sports Broadcasting over the Internet*, *supra* note 1, at 26 (testimony of Michael Seibel, Chief Executive Officer, Justin.tv, Inc.); *see also supra* notes 147-148 and accompanying text (describing briefly automated takedown tools that use manual input by content owners).

²¹⁵ *See supra* note 155 (listing various forms of automatic removal tools).

²¹⁶ *Cf. Section 512 of Title 17*, *supra* note 109, at 101 (testimony of Annemarie Bridy, Alan G. Shepard Professor of Law, University of Idaho College of Law) (“I think it is probably not that expensive for most smaller Internet companies to just have a fillable form for DMCA compliance I think that is probably a fairly easy place to start.”). Professor Bridy seems to be referring to online forms generally, and not necessarily to those that involve automatic removal of the referenced material. In the context of user-generated content, however, a claimant should be able to reference the URL at which the material is hosted; it should not be an overly difficult process to translate such a URL, once entered into a form, into a system that blocks the content located at that URL.

post-*Lenz*.²¹⁷ Even a modest tool such as an automatic takedown form provides the claimant with a high degree of control over other persons' speech and expression, however, and an important question is how to govern access to such a system. If legitimate copyright owners are denied access, the benefits of enacting more efficient "standard technical measures" accrue only to the same larger content owners that already have many of these tools; if everyone is granted access to such a system, it is not difficult to imagine it being abused, given the lack of oversight in the initial notice submission.

For this problem, YouTube's Content ID system could serve as a model. Access to Content ID is predicated upon the "control [of] exclusive rights" to "copyrighted content."²¹⁸ Once an applicant provides evidence of these "exclusive rights," he must specify any geographic limitations on those rights and must "complete an agreement explicitly stating that only content with exclusive rights can be used" in regards to the system.²¹⁹ Such requirements should easily be satisfied by those needing access to such an automated takedown system, and should prevent those without protectable copyrighted material from gaining access to this ability to automatically remove material from the Internet. While this initial registration process could involve some delay, once a copyright owner gains access to such a system, removals could occur rapidly.

Although adoption of this sort of automatic takedown form would expedite the response to a valid takedown notice, it would not help with the initial task of locating the material in dispute. Thus, from the content-owner's side, it would not help deal with identifying the large volumes of infringing content on the Internet. It would help OSPs deal with processing large volumes of takedown notices, however, and would thus provide content owners—particularly, those frantically trying to block unauthorized live content—with an unquestionably expeditious response to their takedown notifications.

2. Automated Identification and Removal via DRM Systems

While automatic takedown forms represent a more modest role for automation in the removal process, DRM software represents the opposite—a copyright protection regime in which automation does just about all of the work.²²⁰ Unlike the use of automatic takedown forms, the mandatory implementation of DRM systems would represent an entirely new paradigm for copyright protection under the DMCA. Rather than the traditional paradigm in which content owners

²¹⁷ See *supra* notes 167-177 and accompanying text (discussing the *Lenz* case).

²¹⁸ *Qualifying for Content ID—YouTube Help*, YOUTUBE, <https://support.google.com/youtube/answer/1311402> [<https://perma.cc/ZTR2-K7BU>] (last visited Sept. 22, 2016).

²¹⁹ *Id.*

²²⁰ See *supra* notes 149-152 and accompanying text (describing DRM software). Of course, the reference data ("fingerprints") on which DRM software relies must be uploaded, and a content owner must still set the protocols by which the DRM software operates.

send a “web site address” to an OSP and “forc[e] them to take it down,”²²¹ a system in which DRM software is standard would instead feature automated processes scouring online services and removing content under the authority of the OSP if it matches the “fingerprint” data provided by a content owner. Some commentators have argued for the adoption of DRM software as mandatory technology,²²² while many others have harshly critiqued the use of this technology as impinging upon end-users’ rights.²²³ If the metric of success is the volume of content removed from online services, DRM systems have been wildly successful—automated systems are now used to find and remove a massive volume of content,²²⁴ which would almost certainly be impossible to handle via manual human review.²²⁵ However, such a metric fails to account for the costs incurred by such an enforcement regime, notably those imposed on end-users and smaller companies—as discussed, automated systems cannot accurately recognize fair use,²²⁶ and the implementation costs for effective DRM systems could be substantial.²²⁷ Furthermore, access to these DRM systems would have to be closely monitored, yet still made available to those who legitimately control exclusive copyrights. For this latter issue, the solution could be the adoption of the current practices of large OSPs such as YouTube’s policy on who may subscribe to Content ID.²²⁸

Any standards-setting decision that mandates the use of DRM technology would have to include a method by which small-to-medium companies could

²²¹ *Piracy of Live Sports Broadcasting over the Internet*, *supra* note 1, at 54 (testimony of Christopher S. Yoo, Professor of Law and Communication, University of Pennsylvania Law School).

²²² *See, e.g.*, Gallo, *supra* note 188, at 314 (advocating for the incorporation of DRM technology into the DMCA’s “standard technical measure” requirement).

²²³ *See supra* notes 139, 158-166 and accompanying text (describing the criticism of DRM technology and some of its conspicuous failures).

²²⁴ *See Section 512 of Title 17, supra* note 109, at 16 (statement of Annemarie Bridy, Alan G. Shepard Professor of Law, University of Idaho College of Law) (“The notice and takedown regime . . . has scaled well for enforcing copyrights in the voluminous content hosted by online service providers. Corporate copyright owners and OSPs have cooperated to automate the notice-and-takedown process . . .”); *cf.* Bridy, *supra* note 48, at 714 (“Viacom’s power to eliminate 100,000 instances of alleged infringement overnight, with a single notice, is a testament to the DMCA’s success in making online enforcement scalable . . .”).

²²⁵ *See* Solomon, *supra* note 183, at 257-58 (describing human review of allegedly infringing material, by either the OSP or content owner, as “unrealistic” given the volume of material in question).

²²⁶ *See supra* notes 180-184 and accompanying text (discussing the inherent difficulty of DRM systems considering fair use).

²²⁷ *See Section 512 of Title 17, supra* note 109, at 100-01 (statements of Rep. Doug Collins, Member, H. Comm. on the Judiciary, and Annemarie Bridy, Alan G. Shepard Professor of Law, University of Idaho College of Law) (discussing the inability of smaller companies, both OSPs and content creators, to develop or purchase advanced rights management systems).

²²⁸ *See supra* notes 218-219 and accompanying text.

afford to make use of this technology. Given the DMCA's goal of "ensur[ing] . . . that the variety and quality of services on the Internet will expand,"²²⁹ any new standard that is adopted should not overly burden smaller companies from participating in the online market. A coalition of stakeholders—mainly, the major content owners—have already promulgated their own *Principles for User Generated Content Services*²³⁰ and, undoubtedly, the content industry would be happy to see a ratcheting up of the DMCA copyright enforcement system. One option is that trade associations from the content industry could potentially jump-start the adoption of this sort of standard by agreeing to subsidize the technology behind it and making it widely available to OSPs that otherwise could not afford it. At bottom, it seems likely that the more effective the DRM software would be, the more expensive its implementation; and because the content owners would reap the benefits of these increases in efficiency, a corresponding subsidy of the technology's deployment seems sensible.

3. Fair Use and the Problem of Harmonizing DRM with Fair Use

Any copyright enforcement regime that involves industry-wide automation must address the Ninth Circuit's holding in *Lenz*.²³¹ The use of automatic takedown forms, which would not rely on automated *identification* algorithms, would not preclude a consideration of fair use before submission—technically, each submission could be done manually by a human agent. While manual submission under this regime is unlikely given the volume of material that is reviewed, it would be possible and would not mark any necessary change from the current notice-and-takedown system.²³² As discussed, however, the use of DRM software has already given rise to harsh criticism of its inability to consider fair use, and the mandatory deployment of DRM software across all DMCA-compliant OSPs would surely magnify those concerns exponentially.

Several options are available, none of which would be fully satisfactory. In its original opinion, the *Lenz* court acknowledged—albeit in dicta—the possibility that automated takedown processes could sufficiently consider fair

²²⁹ S. REP. NO. 105-190, at 2 (1998).

²³⁰ See *Principles for User Generated Content Services*, *supra* note 193.

²³¹ *Lenz v. Universal Music Corp.*, 815 F.3d 1145, 1160 (9th Cir. 2016), *petition for cert. filed*, 85 U.S.L.W. 3069 (U.S. Aug. 16, 2016) (No. 16-217). *Lenz* is discussed *supra* at notes 167-184 and accompanying text.

²³² There would be at least one rather obvious and substantial change from the current, default notice-and-takedown framework: there would be no chance for initial review of the takedown request by the OSP. Nevertheless, such a change would not change the fundamental structure of notice-and-takedown, as the DMCA does not allocate responsibility to OSPs to determine the propriety of a takedown request. See 17 U.S.C. § 512(g)(1) (2012) (“[A] service provider shall not be liable to any person for any claim based on the service provider’s good faith disabling of access to, or removal of, material or activity claimed to be infringing . . .”).

use.²³³ In doing so, the court favorably cited an amicus brief proposing that DRM software might sufficiently “consider” fair use if it only removed material which was almost “entire[ly] . . . comprised of a single copyrighted work.”²³⁴ The court then stated that content owners could then manually review the other content that the “computer program [did] not cull.”²³⁵ While this approach might have its merits, it also may not be compatible with protecting live content. Online protection of live content involves taking infringing material down as quickly as possible—removal cannot wait until large segments of the show or event have concluded. If an algorithm were to delay removal until near the end of the event, the removal would be nearly useless to the content owner. Conversely, if the algorithm relied on matching short segments, it would risk triggering false positives on fair uses such as news commentary—the exact sort of outcome the proposal seeks to avoid. The court later amended the opinion and removed all of its discussion of automation; this arguably demonstrates the panel’s discomfort with this dicta, making it unclear whether even an automated solution so targeted towards fair use could satisfy the standard set in *Lenz*.²³⁶

The Electronic Frontier Foundation (“EFF”) put forward another idea in 2008, proposing that “humans screen” the material, but only “*after a counternotice has been filed*.”²³⁷ If the material constitutes fair use, it can be reinstated and cleared for viewing. This sort of idea could rather easily be put into place, albeit with perhaps some higher cost for compliance staff. While this proposal seems fully compatible with protecting live content—unlike the first proposal, it would not

²³³ *Lenz v. Universal Music Corp.*, 801 F.3d 1126, 1135-36 (9th Cir. 2015) (“We note, without passing judgment, that the implementation of computer algorithms appears to be a valid and good faith middle ground for processing a plethora of content while still meeting the DMCA’s requirements to somehow consider fair use.”), *amended by* 815 F.3d 1145 (9th Cir. 2016), *petition for cert. filed*, 85 U.S.L.W. 3069 (U.S. Aug. 16, 2016) (No. 16-217).

²³⁴ *Id.* (quoting the Brief of Amici Curiae the Organization for Transformative Works, Public Knowledge, and International Documentary Association in Support of Appellee and Cross-Appellant Stephanie Lenz at 29-30 n.8, *Lenz*, 801 F.3d 1126 (9th Cir. 2015) (Nos. 13-16106, 13-16107)).

²³⁵ *Id.* at 1136.

²³⁶ *Compare Lenz*, 815 F.3d at 1154-55 (lacking any discussion of computer algorithms and fair use), *with Lenz*, 801 F.3d at 1135-36 (including two paragraphs discussing how “computer algorithms” might sufficiently consider fair use). Despite being dicta, this language in the original opinion did at least offer some guidance as to the panel’s views on automation, and could be seen as moderating the decision’s potentially drastic impact on the use of automation for DMCA enforcement. While the court’s deletion of this language is unexplained and could simply signal a reluctance to wade into issues not required for the particular case (the takedown in *Lenz* was done manually), it certainly does not help those arguing that automated takedowns can adequately consider fair use as required by *Lenz*.

²³⁷ Nate Anderson, *Fixing DMCA Takedown Problems Through Shaming, Legal Reform*, ARS TECHNICA (Oct. 20, 2008, 11:35 PM), <http://arstechnica.com/uncategorized/2008/10/fixing-dmca-takedown-problems-through-shaming-legal-reform/> [<https://perma.cc/5KQM-7797>].

delay any initial removals—it is not clear which side should bear the burden of reviewing fair use claims. EFF proposed that OSPs conduct these reviews,²³⁸ but OSPs may not agree to delve into these same issues of legal liability that the DMCA was meant to limit. While content owners could undertake these reviews, it is hard to see how it would be equitable to allow the same party claiming infringement to then determine whether a fair use exception applies.²³⁹ Additionally, considering that use of the counternotice process is exceedingly rare,²⁴⁰ such a procedure may not adequately protect fair uses by end-users. In any event, absent a change to the DMCA, *retrospective* review would not satisfy the requirement set by *Lenz* that “the DMCA requires consideration of fair use *prior* to sending a takedown notification.”²⁴¹

Another option is for the use of DRM systems to be predicated on a human review before any actual removal of material occurs. Yet given the huge volume of infringing content online, this would impose an “unrealistic expectation of human review” by content owners handling huge volumes of takedown notices.²⁴² Ultimately, an industry-wide implementation of DRM software may need to wait until the repercussions of *Lenz* are clearer, both in the Ninth Circuit and nationwide—some clarity may come from the Supreme Court, should they grant certiorari and consider the issue.²⁴³ Considering the widespread use of DRM software today, these questions may very well be litigated in the near future. Meanwhile, fully automated takedown procedures seem to stand on unsteady ground.

CONCLUSION

As traditional media is increasingly displaced by online a la carte services, content owners are relying on their live programming to bring in viewers.²⁴⁴ Given the parallel rise in online piracy of content,²⁴⁵ the speed with which unauthorized live content is removed is likely to become a more important and contested issue. The best way to accommodate both OSPs and content owners is

²³⁸ *Id.*

²³⁹ See Baio, *supra* note 159 (describing an incident in which a human agent of a content owner, who had removed content alleging infringement over “background music,” rejected a counterclaim despite the audio in the clip being only of “bird calls and other sounds of nature”).

²⁴⁰ See *Section 512 of Title 17, supra* note 109, at 115-16 (testimony of Paul Sieminski, General Counsel, Automatic Inc.) (describing how a company received 825 takedown notices and four counternotices in a month); Urban & Quilter, *supra* note 65, at 644-45, 679 (finding only seven counternotices filed in response to 876 takedown notices in survey).

²⁴¹ *Lenz*, 815 F.3d at 1154 (emphasis added).

²⁴² Solomon, *supra* note 183, at 258.

²⁴³ See *supra* note 178 and accompanying text.

²⁴⁴ See *supra* notes 17-23 and accompanying text (describing the growing focus of traditional media on live content).

²⁴⁵ See *supra* note 24.

to implement a new technological standard for online services—one that allows for automatic removal of allegedly infringing content as a standard requirement under the DMCA.

At the moment, the most viable solution seems to be the use of automated takedown forms that allow verified owners of exclusive copyrights the ability to remove allegedly infringing content immediately from an OSP's website. By making such forms standard, content owners can facilitate timely removals of live content without shifting the search or enforcement burdens to OSPs. While DRM software offers a highly effective way to remove allegedly infringing content from the Internet, its effectiveness comes at a high cost, and the legal standing of the current implementation of DRM systems is uncertain. Notably, all of the reforms discussed in Part III sweep more broadly than live content—automation offers benefits for all content owners. However, those who increasingly rely on revenue from live content have the most to gain in a regime in which takedowns are automated, and relying on automation very well may be the only way to reconcile two seemingly intractable views of what constitutes “expeditious” in the context of protecting a copyright work that is streamed live.