PUBLIC KNOWLEDGE

CONSENSUS, NOT COMMAND:

A Smarter Approach to Standard Technical Measures

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Executive Summary

In the past couple of years, both the Copyright Office and Congress have expressed renewed interest in Section 512(i) of the Digital Millennium Copyright Act which deals with collaboratively developed and voluntarily adopted "standard technical measures," or STMs, for identifying and protecting copyrighted works online.

The open, fair, voluntary, consensus-driven approach outlined in Section 512(i) has worked: Stakeholders have recognized a confluence of factors that make STMs the wrong tool for online copyright protection. Factors like technical limitations, investment in proprietary systems, divergent interests amongst rightsholders and online service providers, and the existence of alternative copyright enforcement mechanisms have all contributed to the decision to avoid broadly standardizing any technical measures.

Nevertheless, some have called for radical departure from the open and consensus-driven values of Section 512. So, to serve as a guide for continued consensus-based STM development, this paper examines some potential hazards and pitfalls that must be avoided in the STM space: specifically, the dangers posed by automated content filtering technology (an often discussed proposed STM development path), and the error of shifting away from a consensus model to a designation model.

Endeavoring to balance critique with constructive participation in the development space, the last section of the paper is dedicated to suggested paths forward for STMs. This includes proposals for how to build broader consensus, bring stakeholders to the table, and address the diverse needs of different online services as well as a discussion of how investing in modernizing copyright registration could serve as a foundation for more equitable, accurate, and advanced copyright enforcement technology.

Introduction

In the past few years, both the Copyright Office and Congress have expressed renewed interest in a little-discussed provision of the Digital Millennium Copyright Act that deals with collaboratively developed and voluntarily adopted "standard technical measures," or STMs, for identifying and protecting copyrighted works online.

In May 2020, the Copyright Office published a report on Section 512 that, in part, discussed Section 512(i): the provision of the Digital Millennium Copyright Act about "standard technical measures."[1] In September 2020, the Copyright Office held virtual stakeholder discussions covering the legal foundation of STMs, current technologies and their potential for adoption as STMs, and means of identifying or developing STMs going forward.[2] In the words of the Copyright Office, "the September 2020 event highlighted a lack of consensus among stakeholders and raised more questions than answers."[3] Following up on the report and discussions, Senators Thom Tillis and Patrick Leahy asked the Office to continue exploring the identification and implementation of STMs in June of 2021.[4] Then, in March 2022, Senators Tillis and Leahy introduced the "Strengthening Measures to Advance Rights Technologies (SMART) Copyright Act of 2022," which proposed to bypass the ordinary process in Section 512(i) and

[1] U.S. Copyright Office, Section 512 of Title 17: A Report of the Register of Copyrights 176 (May 2020), *available at* https://www.copyright.gov/policy/section512/section-512-full-report.pdf ("Section 512 Report").

[2] Standard Technical Measures and Section 512, 87 Fed. Reg. 25049 (Apr. 26, 2022) available at https://www.govinfo.gov/content/pkg/FR-2022-04-27/pdf/2022-08946.pdf ("Copyright Office STM NOI").

[3] Copyright Office STM NOI at 25050-25051.

[4] Copyright Office STM NOI at 25051.

grant the Copyright Office the authority to select and designate mandatory technical measures through rulemaking.[5]

Most recently, in April 2022, the Copyright Office published a Notice of Inquiry seeking public comment about STM development and potential changes to Section 512(i).[6] Dozens of comments were filed with the Copyright Office, including comments from corporate content industry groups, major online service providers, public interest organizations, and members of the public. As with the stakeholder discussions in September 2020, the comments give voice to a wide range of perspectives, demonstrating that there continues to be broad disagreement about what role STMs may play in the future of online copyright enforcement.

This paper aims to refute the argument that the current lack of identified STMs represents a failure or problem that needs to be fixed with legislative or regulatory action. Instead, Section 512(i) should be viewed as a success story in crafting flexible, technology-driven legislation. STMs have failed to materialize for a host of very good reasons, demonstrating the value and resilience of the accessible and consensus-driven approach defined in Section 512(i).

To serve as a guide for continued consensus-based STM development, this paper examines some potential hazards and pitfalls that must be avoided in the STM space: specifically, the dangers posed by automated content filtering technology (an often discussed proposed STM development path), and the error of shifting away from a *consensus model* to a *designation model*.

Endeavoring to balance critique with constructive participation in the development space, the last section of the paper is dedicated to suggested paths forward for STMs. This includes proposals for how to build broader consensus, bring stakeholders to the table, and address the

[5] *See Public Knowledge Opposes Bill Granting Copyright Office Authority To Mandate Content Monitoring Technology*, Public Knowledge (March 18, 2022), https://publicknowledge.org/public-knowledge-opposes-bill-granting-copyright-office-authority-to-mandate-content-monitoring-technology/.
[6] Copyright Office STM NOI.

diverse needs of different online services as well as a discussion of how investing in modernizing copyright registration could serve as a foundation for more equitable, accurate, and advanced copyright enforcement technology.

A Short Introduction to "Standard Technical Measures"

The "Digital Millennium Copyright Act" has shaped the internet as we know it. One of the most important elements of the DMCA is Section 512,[7] which creates a "safe harbor" that shields online service providers (OSPs)[8] from copyright infringement litigation. To qualify for the safe harbor protections, service providers must provide a system for notice and takedown of infringing works; terminate the accounts of repeat infringers; and accommodate and not interfere with "standard technical measures," or STMs, that are "used by copyright owners to identify or protect copyrighted works."

"Standard technical measures" are loosely defined in Section 512.[9] Rather than describe a specific set of technologies or prescribe certain measures, the statute defines STMs by way of their developmental process and accessible characteristics. To qualify as an STM, a technical measure must achieve "a broad consensus of copyright owners and service providers" and be developed through an "open, fair, voluntary, multi-industry standards process." Furthermore, STMs must be available to everyone on "reasonable and nondiscriminatory terms" and must not impose "substantial costs on service providers or substantial burdens on their systems or networks."[10]

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[7] 17 U.S.C. § 512

[8] OSP refers to all online service providers covered by section 512, including mere conduits such as internet service providers. *See* 17 USC § 512(k)(1).

[9] 17 U.S.C. § 512(i)(2).

[10] The SMART Copyright Act, discussed further below, amends these requirements for STMs to say availability must be nondiscriminatory and *either* available on a "royalty-free basis" or "a reasonable royalty basis" and changes the last requirement to must not impose "substantial *and disproportionate* costs on service providers or substantial *and disproportionate* burdens on their systems or networks" [emphasis added]. While these changes explicitly encourage the provision of royalty-free technical measures, the inclusion of "reasonable royalty basis" as an option likely undermines this gesture. Especially in the context of mandated DTMs, there should be no royalties at all. Furthermore, the addition of "and disproportionate" is likely to adversely affect interpretations of

This combination of features ensures that the obligation to accommodate STMs imposed by Section 512 is counterbalanced by consensus-driven development and open and accessible characteristics. These qualities and features are consistent with the overarching aim of Section 512 to promote the development of the internet by ensuring disputes are first addressed through cooperative mechanisms rather than through litigation or punitive systems. As stated by the Copyright Office: "Inherent in this provision is Congress' primary intent for the section 512 framework to encourage cooperation between creators and OSPs."[11] These fundamental principles of openness, cooperation, and equitable remedy have succeeded as the essential building blocks for regulating the internet ecosystem.

STMs Today: Unrealized and for Good Reasons

Building from the values of cooperation and collaboration and embracing a standards-setting process that is common throughout the internet ecosystem and across other industries,[12] there is no formal procedure for the designation or recognition of STMs. No court has ever recognized an STM in litigation and OSPs have not recognized any current or proposed technical measures as an STM.[13] A combination of interrelated factors explain why STMs have been overshadowed by other mechanisms for addressing copyright protection online, but a dangerous narrative is emerging that because there are no STMs, Section 512(i) must be inherently structurally flawed or in need of revision. To the contrary, the absence of STMs is the natural and correct outcome of a genuine multistakeholder approach based on the realities of the copyright enforcement landscape online.

512(i)(2)(C) (i.e., a technical measure can have substantial or disproportionate costs/burdens so long as it is not both substantial *and* disproportionate).

[11] Section 512 Report at 176.

[12] Comments of Internet Infrastructure Coalition, Standard Technical Measures, COLC-2022-0002-0032 (May 27, 2022), https://www.regulations.gov/comment/COLC-2022-0002-0032 ("i2 Coalition Comments").

[13] Section 512 Report at 176 ("In the Study comments, many stakeholders note that no measures currently qualify as STMs").

Multistakeholder Consensus: The Right Process With the Right Outcome

The core design in Section 512(i) is a good one that should be preserved, not amended or circumvented. The development of standards through multi-industry consensus building is not by any means unique to STMs; it is a well-established practice that often leads to the development of meaningful standards.[14] This well-established process is a technology-forward approach that follows technological feasibility and requires there to be conditions that would make a standard useful and efficient. The multistakeholder framework enables participants to engage in a process that brings all perspectives to the table, encourages collaboration, and does not prejudge the best path forward. Section 512(i) sets out a process that helps determine whether there is a broad consensus on STMs, which is necessary for requiring their widespread adoption and accommodation. Thus far, there has been no consensus. But it would be a mistake—and contrary to the goals of ensuring an innovative, competitive, and creative internet—to do away with the need for consensus. If the participants in the process do not set a standard this merely reflects that the technology and conditions in the complex multi-industry environment in which Section 512(i) operates do not support standardizing any particular technical measure. Thus, the open, collaborative, and consensus-based model results in the law following the technological, cultural, and economic development of the internet—an ideal approach considering the DMCA was passed nearly 25 years ago when the internet ecosystem looked radically different than it does today. Instead of sidestepping or undermining this process, policymakers should explore paths to developing future consensus, such as through funding modernization efforts at the Copyright Office to create a proper digital copyright registry.

When viewed in this light, the lack of any STM should be viewed as a success: Rather than wind up chained to an outdated technology mandate, Congress saw fit to select a process for STMs that would assure such standards would only arise if the technology and industry circumstances allowed for useful standards to emerge. Technical challenges, a desire to protect proprietary

[14] i2 Coalition Comments at 2.

copyright protection systems, conflicting interests between different industries, economic inefficiencies, and the existence of other copyright enforcement mechanisms have all been contributing factors that prevented the development of a broadly adopted STM thus far. Understanding these factors that prevented that development and broad adoption can guide policymaking about STMs today.

Technical Challenges

The technology-neutral definition of STM allowed for the possibility of collaboratively developed technology to serve as the basis of technical measures, yet no STM has emerged as broadly supported or adopted. The Wikimedia Foundation observes, "This law was written without particular measures in mind, assuming technology would continue to evolve in the field of copyright protection. Technology has continued to evolve, but in the realm of copyright enforcement, has not converged into any meaningful universal standard that can meet the safeguards contained in §512 (i)."[15] One of the most critical contributing factors to this phenomenon is the technical challenge in developing measures that can—at scale—identify and enforce copyright. Even when totally unconstrained by technical limits or requirements in Section 512, this objective has proven a challenge and remains partially unsolved. As aptly described by the Copia Institute in its comments to the Copyright Office:

> "[I]t is one thing to have technical tool[s] that can identify specific works online. This is a function that, while difficult, costly, and often impractical if not outright impossible to implement reliably at scale, is at least relatively straightforward: with identification either a work has been spotted online or not. But it is another thing entirely to think there is any technical measure possible, let alone a standard one, that can spot *infringement* online, because such a function is not a

[15] Comments of Wikimedia Foundation, Standard Technical Measures, COLC-2022-0002-0035 (May 27, 2022), https://www.regulations.gov/comment/COLC-2022-0002-0035 ("Wikimedia Comments").

> task that any tool can automate, given that the literal existence of a work online does not automatically correlate with an infringement."[16]

Even the largest, most sophisticated technology companies have been unable to claim unmitigated success in tackling even the identification component of this challenge. For example, it is widely reported that YouTube spent over $100 million dollars developing its proprietary copyright enforcement technical measure called "Content ID." Even with all of YouTube's financial resources, huge market power, and Google's vast pool of talent, Content ID remains a problematic mess. It has drawn criticism from the content industry, YouTube creators, and digital rights groups alike.[17] This is not because YouTube has taken some Solomonic split-the-baby approach that is fair but makes everyone unhappy; Content ID simply doesn't work as well as it needs to in order to provide fair, accurate, and consistent protection for any of the site's stakeholders. These technological barriers to creating scalable, accurate, technical protection measures—that remain challenging almost 25 years after passage of the DMCA and for even the most well-resourced actors—is the largest and most straight-forward reason for limited STM development.

Proprietary System Development

The investment in proprietary or tailored copyright protection measures is another factor that has weighed against development of standards for copyright protection. Despite its flaws, Content ID is still probably the gold standard for a copyright identification and enforcement technical measure—and that is precisely why YouTube is unlikely to be sharing it. Content ID

[16] Comments of the Copia Institute, Standard Technical Measures, COLC-2022-0002-0030 (May 27, 2022), https://www.regulations.gov/comment/COLC-2022-0002-0030 ("Copia Comments").

[17] *See YouTube defends Content ID following music labels' criticism*, Musically (Apr. 25, 2016), https://musically.com/2016/04/25/youtube-defends-content-id-following-music-labels-criticism; Jonathan Bailey, *YouTube's Copyright Insanity*, Plagiarism Today (Jan. 10, 2019), https://www.plagiarismtoday.com/2019/01/10/youtubes-copyright-insanity/; Katherine Trendacosta, *Unfiltered: How YouTube's Content ID Discourages Fair Use and Dictates What We See Online*, Electronic Frontier Foundation (Dec. 10, 2020), https://www.eff.org/wp/unfiltered-how-youtubes-content-id-discourages-fair-use-and-dictates-what-we-see-online.

makes YouTube an attractive platform for creators that want tools to protect their work, especially big corporate rightsholders like record labels and movie studios that want to police a lot of content with relatively little labor (or accountability). This competitive advantage—combined with freedom from having to accommodate other STMs that might be developed to focus on their own systems—exemplifies the strong disincentive for OSPs to collaborate on standardizing technical measures.

Divergent Interests and Economic Inefficiencies

Online service providers have a staggering amount of variety and diversity in their content, needs, risks, and business models. Similarly, on the rightsholder side, small independent or individual creators also have different needs and concerns from big corporate rightsholders. These divergent interests, needs, and content areas creates a landscape where standardizing technical measures is not only unhelpful, but actively harmful to some segments of the stakeholders.

For example, OSPs with robust community moderation may have little need for technical measures to monitor for infringing content thanks to those very active human-driven systems. Wikimedia describes how "much of Wikimedia content moderation, including copyright enforcement, is done by volunteers who are able to identify and remove copyright violations from the projects before they are even brought to the attention of the Foundation. Models like Wikipedia are threatened when specific technology is mandated for use by platforms because that technology preempts or complicates existing successful mechanisms of community-led enforcement."[18]

In addition to potential interference with existing moderation mechanisms, STM accommodation may carry costs and burdens that impact different OSPs in different ways. What may be reasonable licensing terms or an acceptable burden for some OSPs could be

[18] Wikimedia Comments at 13.

completely unattainable or unworkable for others, especially for early stage startups, nonprofits, or hobbyist websites. Attempting to scale the reasonableness standard or assess burdens based on size is also a complex undertaking with arguably limited utility. The startup advocacy group Engine describes how "the incorporation of [OSP size] thresholds could generate new uncertainties (or create traps for the unwary), incentivize unproductive behavior, and be difficult to implement in the context of high-growth startups."[19] Another effort to subdivide OSPs, in the hopes that consensus might be easier to obtain, is by content areas or sub-industries. However, as with size, these distinctions are not natural or obvious and forcing OSPs into these categories creates pitfalls, barriers, and economically inefficient uncertainties.[20] Online service providers operate in a landscape marked by rapid growth, innovation, and change; size tiers or market subdivisions would serve as a new set of barriers and as obstacles and ultimately do little to help drive consensus around STMs. The effects of these unevenly distributed costs and burdens would significantly hinder innovation and competition while delivering marginal, if any, real benefit to rightsholders.

Shifting the implementation and deployment to the rightsholder side, one does not find the landscape any more unified. The tremendous growth in independent and individual content creators and entrepreneurs creates an entire class with significantly different needs and resources from the traditional corporate content industry players. Unlike large record labels or music studios, a solo YouTuber, Twitch streamer, or Etsy seller lacks the resources to implement technical protection measures, to endure protracted litigation, or to hire dedicated staff to interface with the OSPs—large and small—on which they rely or where they may need to enforce their rights. This individual-driven "creator economy" is estimated to be a market of over $100 billion dollars,[21] and their needs cannot be ignored in any effort to find consensus about STMs on the rightsholder side. While this group is not unified or as clearly represented as traditional

[19] Comments of Engine, Standard Technical Measures, COLC-2022-0002-0029 6 (May 27, 2022), https://www.regulations.gov/comment/COLC-2022-0002-0029 ("Engine Comments").

[20] Engine Comments at 4-5.

[21] *The Creator Economy: 2021 Report*, The Influencer Marketing Factory (Sept.2021), https://theinfluencermarketingfactory.com/creator-economy/.

corporate media and entertainment interests, observers have noted that independent and individual creators seem, at a minimum, skeptical of the value of technical measures for copyright enforcement.[22] Creators often find themselves on the wrong end of systems like Content ID and already struggle with the amount of power OSPs already have over their work given their reliance on OSPs to make and distribute their work.[23]

Overall, an examination of the online ecosystem reveals a landscape of stakeholders with divergent interests, different approaches, and diverse needs. In this environment, standardized technical measures have not been able to attract broad consensus for a variety of good, if different, reasons. Trying to apply broad one-size fits all standards, or unnaturally subdivide industries to gerrymander consensus, are both bad approaches that would only hinder the creativity, competition, and prosperity of the digital economy.

Alternative Copyright Enforcement Mechanisms

Another key factor that weighs against the development and adoption of STMs is a lack of necessity created by alternative copyright enforcement mechanisms. Notice-and-takedown rules, the prohibition on circumventing technological protection measures ("TPMs") and copyright management information ("CMI"), and voluntary technical measure deployment have all contributed to a robust system of copyright enforcement online.

The main tool for copyright enforcement online is the DMCA's notice and takedown process. Notice and takedown is notable for the high level of rapid compliance thanks to the incentives created by the DMCA safe harbor. Indeed, some critics have pointed out the notice and takedown regime is so effective in getting content taken down quickly and with little effort, that the process is sometimes weaponized through false, fraudulent, or abusive takedown

[22] Comments of Niskanen Center, Standard Technical Measures, COLC-2022-0002-0060 2-3 (May 27, 2022), https://www.regulations.gov/comment/COLC-2022-0002-0060 ("Niskanen Comments").
[23] Niskanen Comments at 2-3.

requests.[24] On the other hand, the primary rightsholder complaint regarding using notice and takedown for enforcement against infringing content is that the manual nature of the process, and the vastness of the internet, makes it challenging to continually hunt down and enforce one's rights.

In addition to notice and takedown, Sections 1201 and 1202 of Title 17 prohibit persons from circumventing, or trafficking in tools that can be used to circumvent, TPMs as well as protections for CMI in digital media. Unlike STMs, TPMs and CMI are both technological protections that are deployed unilaterally by rightsholders, and these measures cannot be circumvented under pain of potential criminal, as well as civil, liability. These rights management tools provide rightsholders with many of the benefits that were originally imagined for STMs. The Library Copyright Alliance explains that at the time of drafting, "Section 512(i) addressed rightsholders' concern that online service providers would strip out or ignore rights management information. When section 512(i) was included in the safe harbor bill, no one anticipated that the separate WIPO Treaties implementation bill [which included what became §§ 1201 and 1202] would be enacted simultaneously."[25] Since these concerns were ultimately addressed through Sections 1201 and 1202, this took much of the immediate need for STM development away.

Additionally, large platforms like YouTube are implementing their own technical measures for copyright protection on a voluntary basis, rather than through adopting STMs. Voluntary adoption of technical measures is common sense for the largest platforms where automation and technological solutions are necessary to manage the sheer scale of content. As previously discussed, the development of these proprietary technical measures has disincentivized developing and adopting STMs more broadly, and rightsholders who desire the benefits of these technical measures can get them through the large, dominant platforms like YouTube. Those who chafe against Content ID and other voluntary technical protection measures still have the

[24] The Electronic Frontier Foundation compiles a running list of some of the most egregious examples of takedown request abuse at https://www.eff.org/takedowns.

[25] Comments of Library Copyright Alliance, Standard Technical Measures, COLC-2022-0002-0026 (May 26, 2022), https://www.regulations.gov/comment/COLC-2022-0002-0026 ("LCA Comments").

freedom to seek out OSPs that rely on other models for content enforcement, with notice-and-takedown serving as the baseline everywhere.

These three core copyright enforcement tools (notice-and-takedown, TMP/CMI anticircumvention, and voluntary technical measure deployment) have reduced the need to widely deploy STMs. While copyright enforcement is still imperfect and could be improved—especially for independent and individual creators—these tools already create an online ecosystem that strongly protects copyright.

The Future of STMs: Hazards and Pitfalls

The digital landscape makes copying and disseminating content very easy, which creates an awkward relationship with copyright laws written for the analog era of physical media. Yet, everyone who makes or shares content on the internet relies on copyright to protect their works. As discussed above, OSPs have benefited from safe harbor and, in exchange, rightsholders received powerful tools like notice-and-takedown to protect their rights online. The internet has prospered under this set of rules, resulting in a vibrant, creative, free-flowing exchange of culture and ideas. To preserve this healthy environment that fosters creativity and innovation—the core goals of the intellectual property system—the development and adoption of STMs must be done with caution and in alignment with the open and accessible process laid out in 512(i). There are two major dangers ahead: first, the fixation on automated content filtering as a potential STM, and second, the movement to undermine the consensus-based approach by adopting a legislative or regulatory designation-based approach.

The Dangers of Automated Content Filters

The most popularly discussed candidate for an STM is some form of automated content filtering technology.[26] Automated content filters are powered by content-recognition algorithms and

[26] Section 512 Report at 177-178.

restricted databases of content identification information. They can scan content as it is uploaded or actively comb through online content, preventing uploads, or removing, or flagging content deemed infringing autonomously. This technology is a favorite of the corporate content industry, and perhaps the largest driving factor behind a resurgence of interest in STMs.[27] Yet, these filters are unable to accurately accommodate fair use, they chill free speech, hinder the creativity of content makers, and their cost and complex implementation will throw up barriers to entry that harm competition, limit innovation, and drive further consolidation and centralization on the internet.

Filters Threaten Free Speech

The power to enforce copyright is written into the Constitution, but—as a government enforced limitation on speech—it exists in inherent tension with the First Amendment. Congress, in the Copyright Act of 1976, enshrined the common law doctrine of "fair use" into law, and the Supreme Court has clarified that fair use is a safeguard and safety valve that prevents copyright law from overtaking our right to free speech.[28] Without fair use and other limiting doctrines, such as the constitutional prohibition on the ownership of facts,[29] copyright enforcement would be incompatible with the First Amendment.

Thus, a key concern about mandating the use of technical measures to enforce copyright is that technical measures are unable to assess and accommodate instances of fair use. Without the ability to account for fair use, technical measures take copyright enforcement beyond its constitutionally permissible bounds and infringes on free speech.

It may seem premature to assess that yet-to-be-adopted STMs are going to prove unfit for the task of discriminating between infringing and fair uses, but the fair use test is a particularly

[27] LCA Comments at 2 ("So what is driving this interest in 'fixing' section 512(i)? Clearly, it is the desire of the entertainment industry to impose a filtering mandate similar to that of Article 17 of the European Union's Directive on Copyright in the Digital Single Market.").

[28] Eldred v. Ashcroft, 537 U.S. 186, 219 (2003).

[29] Feist Publications, Inc., v. Rural Telephone Service Co., 499 U.S. 340 (1991).

complex and fluid bit of jurisprudence that requires qualitative and normative analysis beyond the capabilities of many jurists, let alone computer programs.

Additionally, this conflict cannot be solved by requiring after-the-fact appeals processes or human backups. First of all, such a requirement would go beyond the scope of 512(i) which only requires OSPs to accommodate and not interfere with *technical measures.* A secondary adjudication or human-based review process does not fall within that definition and so could not be compelled under the existing statute. Even if it did, such systems would impose "substantial costs on service providers or substantial burdens on their systems or networks."[30] And, even if such requirements were interpreted as permissible (despite being both non-technical and substantially costly), mandating such expensive supporting requirements would create considerable competitive harms. The cost of a human-based review or adjudication process would more heavily burden smaller or fledgling OSPs, creating an uneven playing field and barriers to entry for new services.

Finally, after-the-fact processes that kick in after speech is already being actively suppressed and limited are entirely inadequate as a true safeguard for freedom of speech. Rights must be protected in the first instance—not suppressed as a default and awarded as a remedy. It would be an impermissible burden—and bad policy—to knowingly accept an overly restrictive system that only allows the full spectrum of expression to those with the resources, ability, and dedication to pursue their rights through the adjudication or review process.

Filters Threaten Creativity

There is a common misconception that creativity is an act of spontaneous generation: the sudden production of something new and original from an internal wellspring of creativity. On the contrary, the creative process often intimately involves the acts of absorbing existing ideas, then imitating and iterating, recombining and recontextualizing, and thereby producing

[30] 17 U.S.C. § 512(i)(2)(C)

something "new" and "original."[31] This process is observed among visual artists, musicians, writers, and even those who work in more factual disciplines like history or science.

This means that automated content filters, which are designed to seek out similarity and target content for deletion—or prevent it from being uploaded at all—introduce *unprecedented obstacles* to creative work. Ubiquitous content-filtering technical measures would deter individuals from incorporating, iterating, or recontextualizing existing ideas for fear that their efforts would run afoul of the STM filters. To be clear, this concern extends beyond the fair use and free speech concerns discussed above; the concern is that standardizing, and thereby mandating, automated content-filtering technical measures would affect the actual creative process itself by disrupting the pattern of iteration and adaptation used to develop new work.

If this sounds like a far-fetched conclusion, consider the testimony of many creators on YouTube who have openly discussed how they already feel obligated to alter and adapt their content in various ways to appease the whims of the YouTube content recommendation algorithm.[32] Creators alter the length, structure, presentation, and even language they use in their content to appease the YouTube algorithm. In this example, the algorithm is not even taking the steps that a copyright enforcement STM likely would—such as deleting content or preventing uploads—but is merely raising or lowering the content's recommendation rate.

Therefore, it is easy to imagine how a technical measure with even more punitive effects would have similar, if not even more dramatic, effects on content creation. And, unlike YouTube's proprietary content recommendation algorithm, which is limited to a single platform, the STM

[31] Kirby Ferguson, *Everything is a Remix Remastered (2015 HD)*, YouTube (May 16, 2016), https://www.youtube.com/watch?v=nJPERZDfyWc.

[32] For just one example,YouTubers and podcasters Ethan and Hila Klein have discussed how videos are monitored for content by YouTube's automated tools and how the algorithm changes recommendations based on this. H3 Podcast Highlights, *YouTube's Algorithm Is Ruining Our Lives*, YouTube (Feb. 16, 2020), https://youtu.be/3PpJrfo8FtU.

would be uniformly mandatory across the entire internet. This regime of content filtering would produce an unmistakable flattening or dampening of creativity.

Besides effects on content creators and their creative output, automated content-filtering STMs would affect the diversity and openness of creative spaces themselves. When faced with the prospect of needing to adopt technical measures to monitor user-generated or submitted content, many service providers may instead opt for other, more limited content models, thereby eliminating or curtailing creative spaces and communities online. Fewer creative spaces and communities—or platforms with stricter access requirements—would result in fewer people having the opportunity to create, connect, and build on the internet. Such changes will reinforce existing power dynamics, favoring large corporate content creators while implicitly silencing and suppressing opportunities for smaller, independent creators and diverse and marginalized voices.

Filters Threaten Competition and Innovation

In addition to the threats to free speech and creativity, automated content filter technologies also carry with them serious economic and competitive costs. The expense of developing these technologies means that even "reasonable" royalty terms may, based on current market rates, be impractically high for startups.[33] Furthermore, accommodation requires more than just off-the-shelf licensing. Implementation and compliance has additional up-front and maintenance costs that must be maintained for fear of the liability created by noncompliance.

Rather than reward innovation and competition, adopting filtering requirements will thus become yet another factor that entrenches incumbent platforms. Requiring automated filters will favor existing platforms that have the market power and capital to invest in implementing and complying with them, likely integrating their operation with existing copyright enforcement compliance teams. In many ways, this is ideal for the corporate content industry; this industry

[33] Engine Comments at 1.

prefers to see consolidation because consolidation makes it easier for the biggest content providers to get preferential enforcement terms. Allowing that current of thought to succeed spells doom for competition and ultimately harms small content creators—who will always get steamrolled by their larger competitors for enforcement priority— and especially users, who are left with fewer choices and complacent service providers.

Finally, the last competitive harm driven by the adoption of filtering technology exists within the realm of the market for the technical measure itself. The sophisticated nature of automated content filtering systems means only a small number of competitors will be able to offer products that satisfy STM compliance. This could lead to a relatively captured market where STM vendors are able to exclude new entrants by locking OSPs into their product through required design integration or simply market dominance.

The Dangers of Designating Technical Measures

Earlier this year, Senators Tillis and Leahy introduced the "Strengthening Measures to Advance Rights Technologies (SMART) Copyright Act of 2022."[34] The "SMART Copyright Act" seeks to supplant the open and voluntary STM framework with "*designated* technical measures" that are mandated through a triennial rulemaking process at the Copyright Office. This legislation undoubtedly comes at least in part in response to the Copyright Office's recommendation that "stakeholders and Congress may wish to consider either legislative, regulatory, or practical avenues to encourage the adoption and development of technologies as STMs" in its report on Section 512.[35] While just one example of legislation, the "SMART Copyright Act" is representative of a misguided solution to the nonexistent problem of a dysfunctional STM process, and, as such, it is worth examining and critiquing more closely.

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[34] *See Public Knowledge Opposes Bill Granting Copyright Office Authority To Mandate Content Monitoring Technology*, Public Knowledge (March 18, 2022), https://publicknowledge.org/public-knowledge-opposes-bill-granting-copyright-office-authority-to-mandate-content-monitoring-technology/.

[35] Section 512 Report at 177.

The proposed legislation vests the Copyright Office with the authority to mandate the adoption of new "designated technical measures," or DTMs, for monitoring and enforcing copyright.

The DTM designation process envisioned by the bill—relying on the Librarian of Congress and the Copyright Office—raises serious procedural and practical concerns. A DTM mandate would rely on evaluating cutting-edge technology and would re-shape the landscape of the internet as we know it. That demands a level of technical expertise and stakeholder engagement that, frankly, does not exist at the Copyright Office.

DTMs Are Not STMs

In some ways, DTMs look a lot like their STM cousins. DTMs and STMs are both technical measures "used by copyright owners to identify or protect copyrighted works" and DTMs share some structural similarities with STMs—such as by carrying over the availability requirements of Section 512(i)(2)(B)-(C)[36]—but DTMs are explicitly intended to be different from STMs.

So, while DTMs are just as mandatory as STMs, they lack the organic and consensus-driven adoption model that underlies the logic of requiring compulsory accommodation. Section 512(i)'s language regarding STMs is meant to lend some enforceability to the technical norms that might be established among the diverse groups that all make use of the internet. But STMs have never taken off in the way other copyright protection requirements have for the reasons mentioned above, chiefly technical feasibility, divergent interests including protection of proprietary systems, economic inefficiency, and the existence of strong alternative enforcement mechanisms. The "SMART Copyright Act," instead of accepting these facts as the reason for an absence of STMs, makes an end-run around the traditional STM process that intends to *force* tried-and-failed or new and untested technical measures to be adopted across the whole of the internet.

[36] Naturally, DTMs include the updated version of these requirements from its amendments to Section 512, as discussed above. Given the other procedural differences between STMs and DTMs these accessibility requirements alone are insufficient to ensure real accessibility.

Designating Technical Measures Through the Copyright Office is the Wrong Approach

The "SMART Copyright Act" gives the rulemaking authority to the Copyright Office, which lacks the necessary technical expertise, and calls for an obligatory triennial rulemaking which would be hugely disruptive to the internet ecosystem.

First and foremost, while no government agency should be vested with the authority to designate technical measures, the Copyright Office makes for a particularly poor choice to manage a designation rulemaking because it lacks the technical expertise to serve as an effective rulemaking authority for technical measures. When calling on federal agencies to review and adopt technical measures, it is critical that the agency have both the internal technical expertise and experience to assess whether the measures being endorsed by third-party stakeholders, especially those with a monetary interest in the outcome, are valid and will perform in the manner intended. Recognizing this shortcoming, the "SMART Copyright Act" calls for the Copyright Office to appoint a Chief Technology Advisor and Chief Economist. Both of these roles would be entirely new to the Copyright Office which, more than anything, highlights the complete lack of appropriate expertise at the Office. The nonexistence of these roles previously speaks to the lack of institutional knowledge, internal processes, and culture that would support competent rulemaking decisions regarding technical measures.

In the framing of the "SMART Copyright Act," the Copyright Office would be designating technologies that must be broadly adopted and could have disastrous effects on the internet ecosystem. This is an awesome responsibility that requires intimate understanding of the technology up for designation, the technical functioning of the internet, the structures and designs of the service providers the mandate will apply to, as well as the economic impacts of accommodation and implementation. Those areas are *not* the expertise of the Copyright Office, which has traditionally played more of a legal, administrative function. Trying to establish a designation process ultimately relies on a lot of knowledge and expertise aside from copyright,

which makes the Copyright Office the wrong choice for oversight—and, frankly, a process unsuitable for any government agency.

Aside from issues with vesting the rulemaking authority in the Copyright Office, the process envisioned in the "SMART Copyright Act" is a triennial rulemaking. This is a particularly bad model for these kinds of rules. First of all, copyright protection technology does not need to change that often. Going from an internet that developed without the need to adopt any STMs for decades to requiring an active decision-making process for changing or adopting new DTMs every three years is a massive and unnecessary policy shift. Additionally, having such periodic rulemaking makes compliance hugely burdensome, if not impossible, because the technical measures could change so rapidly. Periodic reviews would create uncertainty about the durability of the mandates while, at the same time, punishing noncompliance harshly.

The unrelenting periodicity of the proceedings would also result in cyclical battles over technologies that haven't substantially changed from proceeding to proceeding. Technical measure vendors will repeatedly try to get their products designated because once they do, OSPs will be obligated to use them. This captive market will not result in an objective, public-interest focused rulemaking process, but a heavily lobbied commercial effort to persuade the Copyright Office to adopt yet another DTM so that service providers will be forced to pay license fees.

This lobbying concern is exacerbated by the steady and relentless drumbeat that is the bill's triennial rulemaking procedure. While commercially motivated parties will be constant fixtures of these proceedings, the frequent and routine nature of these proceedings will lead to less participation from the public and make it challenging for independent creators, nonprofit groups, and other stakeholder organizations to mobilize participation and be meaningfully heard on a continual basis. Conversely, commercial interests with deep pockets will be able to continually wage a war of attrition that exploits the cyclical nature of the proceedings to grind down opposition or slip in unnoticed when engagement is low.

Overall, the fundamental argument behind designating technical measures instead of maintaining the current process is flawed, but the procedural elements of proposals like the "SMART Copyright Act" take an unnecessary idea and make it dangerous by placing the authority with inexpert regulators and requiring an endless gauntlet of rulemaking proceedings that will favor commercial interests over the public good. Proposals like the "SMART Copyright Act" that create a designation process through regulators, or that directly designate technical measures through legislative action, must be scrutinized carefully to ensure that the core values—like free expression and promoting creativity and innovation—remain protected.

A Path Forward: Recommendations

There are many viable alternatives for improving copyright protection online and advancing STM development that don't involve automated content filters or DTM mandates.

The "SMART Copyright Act" seeks to vest the Copyright Office with vast new authority to reshape the internet through DTM mandates, but—because of a lack of funding and support—the Copyright Office remains far behind the technological curve when it comes to its core function: registering and keeping track of copyrights. Modernizing and digitizing the Copyright Office would mark a massive first step that would allow for better identification of copyrighted material and the development of tools and technical measures that could more reliably contribute to online copyright protection.

In recent years, the Copyright Office has undertaken a huge effort to modernize its operations, but most of its advances have been confined to making the registration process more accessible and in digitizing historical paper records. This work is both critical and laudable, but the Copyright Office needs more resources to continue to bring copyright records into the digital age.

Currently, searching to determine whether a given work is registered or to identify who the current owner of a work is, requires considerable research using keyword queries and filters or even a dive into a digitized card catalog. There is no means of presenting a work to the Copyright Office and determining its registration status or ownership, yet a bill like the "SMART Copyright Act" proposes that the Copyright Office start mandating technical measures that would require processes almost technically identical to that feat, but devoid of any direct connection to the Copyright Registry. Private copyright enforcement systems like Content ID are rife with abuse and outright fraud, not to mention honest mistakes, outdated information, or instances of disputed ownership. All of these issues boil down to the private nature of the databases used to identify works and/or reliance on user-generated claims.[37] Some of these problems could be mitigated with a more robust, modern, accessible copyright registry.

Thus, a smarter approach to technical measures is to look at a modern, digital copyright registry as a foundation for new, innovative, and open access copyright technologies. Instead of foisting dangerous automated content filters on the internet or subverting the STM process with efforts to create DTMs, the focus should be on fully modernizing the Copyright Office and developing application program interfaces ("APIs") that can serve as connection points for a new generation of copyright identification software.

To be clear, modernizing and developing the registry isn't a silver bullet, but it could go a long way towards satisfying the concerns of corporate rights-holders that do already register their works, and would give technical measures a robust, publicly administered database to interconnect with.

Finally, it is essential that the open, accessible, consensus-driven standards setting approach originally envisioned in Section 512(i) be maintained. Contrary to the impression that this system has been ineffective, it has actually been remarkably effective at responding to the realities of

[37] See Comments of Benjamin Wolf, Standard Technical Measures, COLC-2022-0002-0024 3-4 (May 25, 2022), https://www.regulations.gov/comment/COLC-2022-0002-0025.

technological limitations, market conditions, and the needs of both online service providers and rightsholders. An ineffective system would have adopted a series of obsolescent measures that would have hampered development and provided little or no additional benefit on top of the strong copyright protections that already exist.

The accessible standards setting approach embraces the core values of the internet: openness, cooperation, collaboration, efficiency, and innovation. It presents the opportunity to bring new stakeholder voices into the discussion, especially internet users and the enterprising new class of independent and individual content creators. Bringing more stakeholders to the table—and better understanding the diverse needs and interests of the many people who create, share, and enjoy the works protected by copyright—will help guide online copyright enforcement, whether an STM emerges from the process or not. The future of copyright protection should be aimed at solving the current problems with the copyright system of today; not exacerbating or doubling down on problematic systems. Stakeholders engaging one another on this subject can help develop a copyright system that is equitable and accessible, accurate and accountable, and that protects free speech and fair use.