

**Senate Committee on the Judiciary Subcommittee on Intellectual Property**  
**Hearing on The Digital Millennium Copyright Act at 22**

Professor Jessica Litman's answers to written questions:

**QUESTIONS FROM SENATOR TILLIS**

1. *How did the advent of the internet impact copyright infringement in the 1990s? What did online copyright infringement look like in the 1990s when the DMCA was enacted? And how does the infringement of the dial-up internet era compare to infringements taking place today?*

In the early 1990s, few commercial entertainment or information providers offered their content online in any form, and copyright infringement tended to be both amateur and low-bandwidth. Online copyright infringement cases commonly involved operators of electronic bulletin board systems, who encouraged subscribers to upload infringing files to share them with other subscribers. *See, e.g., Playboy Enterprises v. Hardenburgh*, 982 F. Supp. 503 (N.D. Ohio 1997); *Sega Enterprises v. MAPHIA*, 948 F. Supp. 923 (N.D. Cal. 1994). Today, almost all commercial entertainment and information providers provide at least some of their content over digital networks. Infringing copies are ubiquitous. Many of them originate in foreign jurisdictions, where US copyright law has no power. Despite widespread infringement, however, US entertainment and information businesses are reporting fabulous economic success. The sale of legitimate digital copies appears from industry reports to have more than compensated for the losses caused by unlicensed uses.

2. *What was the historical context for the enactment of the DMCA? What were the key issues, legal decisions, agreements, and other activities it sought to address?*

In the late 1980s, networked digital technology was used by scientists, universities, defense contractors and some government agencies, but was not yet familiar to the general public. That began to change in the early 1990s, when a variety of commercial and noncommercial online communities enabled people to exchange ideas and information over digital networks. As it became clear that the Internet might enable a vastly different information and entertainment environment, copyright owners became concerned that the technology might make widespread digital piracy of copyrighted material trivially easy. The statute that became the DMCA evolved as one part of the Clinton Administration's efforts to harness networked digital technology as an engine of American economic growth. The original DMCA bill, *The National Information Infrastructure Copyright Protection Act of 1995*, introduced in the 104<sup>th</sup> Congress as S. 1284 and H.R. 2441, was drafted by the Clinton administration's Information Infrastructure Task Force. The bill sought to enhance copyright owners' legal and technical control over uses of their works in digital formats.

The initial legislation included some highly controversial provisions. Libraries, online service providers, computer hardware manufacturers, telecommunications companies, consumer electronics businesses, consumer organizations, civil liberties organizations and legal scholars objected that the bill included ill-considered language that would have destructive consequences throughout the copyright ecosystem. A series of negotiations ensued among the trade associations representing motion picture studios, book publishers, software publishers, record labels, online services, telephone companies, broadcasters, computer and consumer electronics businesses and libraries. Those negotiations yielded a host of compromises that were included in the DMCA.

- 3. When it passed the DMCA Congress envisioned copyright owners and ISPs/platforms working together and reaching voluntary agreements on issues such as standard technical measures. Yet, twenty years later, very few—if any—effective voluntary agreements have been reached and there are no approved standard technical measures under 512(i). Why is that? Is it because ISPs/platforms are comfortable with the current system and have little incentive to meet copyright owners halfway?*

Copyright owners and online services have explored several collaborative efforts in the past 20 years to develop voluntary standards. In 1998, for example, record labels, ISPs, consumer electronics companies, information technology and security specialists, and music publishers launched the Secure Digital Music Initiative, which sought to develop impregnable digital rights management software for recorded music in order to enable copyright owners to distribute music online with only a modest risk of piracy. The participants abandoned the effort in 2001, having failed to develop a sufficiently effective technology. Because the group's efforts were confidential, it is hard for an outsider to ascertain why the initiative failed, but news stories published at the time suggested both that none of the technologies tested by the group proved to be sufficiently effective, and that the participants squabbled over their rights to assert proprietary control over technologies to which they contributed. In 2011, broadband internet service providers signed a memorandum of understanding with trade groups representing copyright owners to devise a “copyright alert system” in response to peer-to-peer file sharing. The participants launched the Copyright Alert System in February 2013, and abandoned it without explanation in January 2017.

In addition to these multi-stakeholder efforts, major copyright owners have negotiated private licensing agreements with the larger online services. The agreements involve use of privately developed technology to detect and respond to online copyright infringement. Because the details of the agreements and of the technology are secret, it is hard to know whether the private deals have been effective and, if not, what their points of failure may have been. The terms and the limitations of these agreements seem to me to a promising avenue for further Congressional investigation.

- 4. The DMCA, and more specifically Section 512's safe harbor provisions, were drafted in a way to allow pioneering internet platforms and services to innovate and grow without the constant threat of liability for the third-party content uploaded to their websites or using their services. Twenty-plus years later,*

*internet platforms that grew up under these safe harbors have become some of the most powerful and wealthy entities in the world, and they have created business models based on their ability to monetize the content of others while turning a blind eye to infringement. Given this change of circumstances, do you think these companies ought to play a more proactive role in combating online infringement and assume more accountability for the misappropriation facilitated by their services?*

The telecommunications companies for whose benefit the section 512 safe harbors were enacted were large and powerful companies back in 1998. Their economic footprint at the time was larger than that of the core copyright industries, and their size and economic power is what gave them the clout to insist that Congress enact title II of the DMCA at the same time that it adopted title I. Twenty-two years later, many of the currently dominant internet platforms are different large, powerful companies and some of the telecommunications companies that lobbied for the § 512 safe harbors in the 1990s have since merged with copyright businesses to create a more consolidated entertainment and information marketplace. I think that any choices Congress makes about which businesses should bear responsibility for preventing or avenging online infringement should be made in light of a complex collection of factors. It would be difficult to assign responsibility for deploying infringement-detection or prevention tools without a clear understanding of how the best current methods for preventing or detecting infringement work, and of the effort and financial investment that went into developing these tools. I would urge Senators and Representatives to make sure that any revision of section 512 does not place heavy burdens on independent authors or the many online services that continue to rely on the section 512 regime rather than implementing automated systems. To the extent that both dominant internet platforms and large copyright owners have plenty of resources and more than ample legal representation, though, it may not be necessary for Congress to insert itself into their negotiations.

5. *What are some of the practical challenges posed by the digital age that were unforeseen when the DMCA was enacted?*

Lobbyists and members of Congress appear to have imagined that digital networks would continue to operate on a human scale. Discussions in both the House and Senate Reports of what might constitute red flag knowledge, for example, refer to humans' viewing files in the course of making them available to subscribers, or seeing obvious evidence of piracy in the course of creating online indexes and as the sort of knowledge that Congress had in mind. *See, e.g.,* S. Rep. 190, 105<sup>th</sup> Cong. 44, 48-49, 52 (1998).

As the Internet has grown, we have seen the appearance of millions of small, human-operated sites, and hundreds of larger online services who receive millions of unique visitors every day, for which it would be impossible to continue to operate without relying on automated processes. Devising legal rules that will work for the broad range of online services is challenging.

6. *In order to better understand the various parties who participated in the DMCA legislative process, can you give us a sense of who the government and non-government participants were? Did individual creators or small businesses have a voice in the proceedings?*

Congress's efforts to enact the DMCA were not widely known at the time, and many interests who might have wanted for Congress to consider their views did not find out about the legislation until after it was enacted. Most major news media outlets found the topic uninteresting. The Clinton administration sought to limit the range of people and organizations who might weigh in on the DMCA because of concern that different actors might voice their own demands, which could delay the legislation's enactment. The administration and the DMCA's supporters repeatedly urged Congress to enact the bills immediately and to deal with any peripheral issues in later sessions of Congress. In addition, even trade associations that paid close attention to copyright legislation were focusing their efforts on other pending copyright legislation, such as the *No Electronic Theft Act*, the *Sonny Bono Copyright Term Extension Act*, and the *Fairness in Music Licensing Act*, all enacted by the 105<sup>th</sup> Congress.

The executive branch efforts were led by Bruce Lehman, Commissioner of Patents and Chair of the Information Infrastructure Task Force Working Group on Intellectual Property, assisted by Register of Copyrights Marybeth Peters and by lawyers in the Department of Commerce and the White House. The Members of Congress who took a particularly active role were Senators Hatch, Leahy, and Ashcroft, and Representatives Coble, Goodlatte, Boucher, Moorhead, Schroeder, and Lofgren. The industry groups and trade associations that were most active in negotiations over the bill included the Motion Picture Association of America, the Recording Industry Association of America, the Association of American Publishers, the Business Software Alliance, the Software Publishers Association, the National Music Publishers Association, the Information Industry Association, the American Library Association, the Consumer Electronics Manufacturers Association, the Computer and Communications Industry Association, the U.S. Telephone Association, the Association of American Universities, and the Home Recording Rights Coalition. A number of other interests that would be deeply affected by the DMCA didn't learn about it until after it became law.

7. *My understanding is that when the DMCA was enacted, the online platforms proposed a system in which they would simply have to take down infringing files in response to notices from rightsholders. Why was that system rejected by Congress?*

Senator Ashcroft expressed concern about the risk of erroneous and bad faith notices, and insisted on including provisions that would enable users to contest and seek remedies for mistaken or fraudulent notices. Telecommunication companies demanded that Congress include a provision explicitly relieving them of any duty to monitor their services or affirmatively look for evidence of infringement. Copyright owners agreed on the condition that Congress include a "red flag knowledge" provision that required service providers to respond to particular infringements should they become aware of them. Universities insisted that the rules that worked for commercial online services would work less well for educational institutions. The safe harbors in 512(a) and 512(b) cover

possible infringements that aren't amenable to a notice and takedown process and needed their own different rules. All of these modifications got folded into the text of section 512, some of them at the last minute.

8. *In order for service providers to avail themselves of safe harbor protection, the DMCA established a duty to remove infringing content even without the input from copyright owners when they have actual or red flag knowledge of infringement. Do you believe that service providers have held up their end of the bargain and investigated infringing activity when they have red flag knowledge? Has case law supported the intent of congress in incentivizing service providers to be proactive when red flag knowledge exists?*

The original understanding of the red flag knowledge provision was that while service providers had no affirmative duty to monitor their services or detect infringement, they should respond to particular infringements should they become aware of them. The Senate Report accompanying the DMCA uses this example:

[t]he “red flag” test in section 512(d) strikes the right balance. The common-sense result of this “red flag” test is that online editors and catalogers would not be required to make discriminating judgments about potential copyright infringement. If, however, an Internet site is obviously pirate, then seeing it may be all that is needed for the service provider to encounter a “red flag.”

Senate Report No. 190, *supra*, at 49.

As a general matter, service providers appear to have held up their side of the bargain. What most of them have not done, and what the statute explicitly says they need not do, is affirmatively seek out evidence of infringement. As the larger service providers have increasingly come to rely on automated systems, their opportunities to be confronted by indicia that would inspire red flag knowledge have accordingly decreased.

Larger service providers have entered into agreements with major copyright owners that may oblige them to do more to detect or respond to infringement than the statute requires. YouTube, for example, has developed a copyright match tool and a content ID program that some copyright owners may use as an alternative or supplement to the § 512 notice-and-take-down regime. Since copyright enforcement agreements between online services and copyright owners are secret, and the technologies are proprietary, however, I can't assess whether they are in fact undertaking an obligation to be proactive or discharging that obligation if they do undertake it.

9. *In seeking provisions in the DMCA that would minimize their exposure to liability, ISPs likened themselves to common carriers in the telecom industry who enjoyed broad immunities from responsibility for the actions of their customers because they served as a mere conduit or utility. Do you believe that this comparison between ISPs and telecom providers was appropriate 22 years ago? What about now?*

Section 512(k) defines service providers broadly. Qualifying providers include a broad swath of different networked digital services. Some providers were and are unquestionably similar to common carriers. The safe harbors in subsections 512(a) and

(b), for example, shield services from liability for automated processes that are necessary to operate the Internet. Services eligible for safe harbors under subsections 512(c) and 512(d) occupy a broader range. Some services that host user-generated content (such as [Dropbox](#) or some webmail services) don't interact with the content at all; others (such as [Facebook](#), or [Twitter](#)) appear to use the content as the basis for targeted advertising. It may be appropriate to treat those services differently. Similarly, although my view is that what subsection 512(d) refers to as “information location tools” should never engender liability for copyright infringement, Congress might choose to treat search engines and directories that are generated by automatic processes differently from search engines and directories that are curated by humans who are exercising human judgment.

10. *Trademark law does not contain safe harbor provisions, and yet internal notice and takedown mechanism have been implemented among platforms that often deal with infringing and counterfeit materials. Shouldn't platforms be just as willing to take voluntary action to monitor and combat copyright infringement?*

The trademark law notice-and-takedown mechanisms that I am aware of are modeled on section 512(c)'s notice-and-takedown procedures for copyright claims, and work similarly.

11. *Projects such as the Google Transparency Report have tracked the extreme volume—75 million in February 2019 alone—of DMCA-related take down notices received. Are these astonishing numbers evidence of a system working efficiently and effectively?*

75 million is a very large numerator. My understanding, though, is that it is dwarfed by the denominator, which reportedly includes tens of *billions* of indexed sites. In addition, it is hard to access what inferences we can draw from the 75 million number in light of the widely documented instances of overclaiming and false claiming in take-down notices. How many of the 75 million take-down notices in fact identify files that infringe the noticers' copyrights? How many of them identify sites that actually appeared in Google's index? We don't know. There have been many well-publicized instances of ill-founded, mistaken, or bad faith take-down efforts. The empirical research we have suggests that the proportion of invalid notices is significant, but all of the research of which I am aware has been conducted on data sets that are partial and not randomly selected.

12. *Do you believe ISPs are doing enough to educate users on copyright infringement and the related harms? If not, what more could be done?*

I'm not convinced that ISPs are the most appropriate parties to assign responsibility for education about copyright infringement and related harms if the goal is to ensure that users receive the best information and most persuasive reasoning. That seems peculiarly within the expertise of copyright owners.

13. *Congress recognized at the time of the DMCA's enactment that the only thing that remains constant is change and that the enactment of the DMCA was only the beginning of an ongoing evaluation by Congress on the relationship between technological change and U.S. copyright law. Given how drastically technology, the internet, and our online existence has changed and evolved over the past twenty-five years, what changes or solutions would you suggest to deal with the changed circumstances?*

I think it is always a good idea for Congress to revisit copyright laws after a decade or two to assess whether they are working as intended. I believe, for the reasons outlined in my written testimony, that narrowing of section 1201 to require a nexus with infringement, and to allow individuals and businesses to offers services and tools that would enable people to circumvent technological protection to make non-infringing uses, would make section 1201 a more effective anti-piracy tool. If Congress chooses to retain the periodic Library of Congress rulemaking to recognize exemptions to 1201(a)(1)(A), it might provide that such exceptions should continue until such time as a copyright owner or provider of technological protection measures petitions the Librarian to revoke them. Section 512 could be greatly improved by rewriting it so that it is simpler and easier to understand. Congress might also consider authorizing the Copyright Office to explore ways to work with online services on efforts to make the notice and counternotice process established by subsections 512(c), 512(d), and 512(g) more transparent and easier to use. In addition, the section 512 notices collected by the Harvard Berkman-Klein Center Lumen database indicate that a substantial number of notices filed pursuant to section 512 do not assert valid copyright claims. See <https://www.lumendatabase.org/>. The large number of problematic notices complicates services' efforts to respond to them. The Copyright Office might provide information about what copyright claims and objections section 512 is intended to address, to help copyright owners and users ascertain whether a copyright notice or counternotice is appropriate in their circumstances.

14. *The Copyright Office is on the verge of releasing its much anticipated 512 report. What do you think are the most important issues the report should address and what would you like to see the report propose concerning these issues?*

I haven't participated in the Copyright Office's section 512 study, so I don't know what proposals the Register is considering. The procedures that service providers have adopted for notice-and-takedown and counter-notice-and-putback are confusing and frustrating for many users. Public misunderstanding about what sorts of complaints are and are not copyright infringement complaints probably contributes to the large volume of invalid 512 notices. Developing informational resources to help users of the notice-and-take-down system understand how the statutory system works and what sorts of claims it is designed to address would be a useful intervention. It may be possible for the Office to make recommendations for standardizing and simplifying the process for sending section 512 notices and counter notices. It would also be helpful for the Office to recommend transparency standards for procedures to contest takedowns that occur outside of the section 512 context.

## QUESTIONS FROM SENATOR HIRONO

1. *The members of the first panel testified regarding the goals the DMCA was supposed to achieve.*

a. *In your view, is the DMCA currently working to achieve these goals?*

The record is mixed. Some parts of the DMCA are working well. Others are not working well. As I explained in my written testimony, I think that sections 1201 through 1205 are working poorly. I have heard no complaints about subsections 512(a) and 512(b). I have heard complaints that subsection 512(d) fails to discourage search engines from making greater efforts to exclude sites from search results if they include infringing content, but I don't believe that those complaints are well-founded. The trade-offs between enabling accurate searches of online content and discouraging searchers from finding undesirable material are extremely complicated. That leaves subsection 512(c), which is in fact the focus of most of the controversy. In my view, subsection 512, as construed by the courts, has done a good job of supporting the balance that Congress intended to strike in 1998.

b. *In light of changes in technology since 1998, are the goals expressed by our first panel still valid or should the DMCA be reevaluated completely?*

The internet that Congress imagined in 1998 is different from the internet that we enjoy in 2020. To the extent that Congress in 1998 sought to balance the interests of a diverse collection of copyright owners large and small, a wide range of different online services, and a diverse group of users, that overarching goal still seems appropriate today, although the best ways to achieve that balance may be different. The 22-year-old DMCA is out of date; the underlying 44-year-old copyright statute is even more badly out of date. Revising the copyright system for the 21<sup>st</sup> century would be a massive undertaking, but it would be extremely challenging to devise effective improvements to the DMCA while leaving the aged underlying copyright statute untouched.

2. *The Conference Report accompanying the DMCA states that Title II, which relates to online infringement liability, was meant to “preserve[] strong incentives for service providers and copyright owners to cooperate to detect and deal with copyright infringements that take place in the digital networked environment.”*

*Is this “cooperation” between service providers and copyright owners currently working? If not, what caused the DMCA to fail in this regard?*

Some services have entered into private agreements with large copyright owners that, among other things, address their respective responsibilities for detecting and



responding to copyright infringements. Because the terms of those deals are not public, it is difficult to assess how well they are working. I think that the Subcommittee might seek to learn details about these agreements in one of its forthcoming hearings.

*3. Section 512 of the DMCA seems to have created a one-size-fits-all world where copyright owners have to police their content online by searching for pirated copies and notifying online service providers of their existence—no matter the size or sophistication of the online service provider. While a system like that may have made sense in 1998, I wonder if it is still appropriate today when certain online service providers are among the biggest, most profitable companies in the world.*

*a. Should all online service providers be treated equally with regard to policing copyrighted content or would it be better to apply a sliding scale based on a provider's size and sophistication?*

Section 512 currently includes five different safe harbors that differentiate among service providers depending on the tasks they are performing. Congress may want to reexamine the definition of the different safe harbors and the qualifications for relying on them, as well as the allocation of responsibilities among service providers and copyright owners. In addition to considering services' size or sophistication, Congress should look at how the best current methods for preventing or detecting infringement work, the frequency with which these tools make mistakes in identifying infringing files, the effort and financial investment that went into developing them, the likely expense for small and non-profit services if they were required to adopt them, the possible anticompetitive effects of mandating the use of specific tools, and the possible speech-suppressive effects of requiring services to use automated upload filters.

*b. How can Congress make sure that big players like Google, Facebook, and others are taking appropriate steps to proactively search for and remove copyrighted content without overburdening small companies?*

Section 512 of the current statute does not impose a duty on any online service to proactively search for and remove copyright-infringing content. Indeed, the statute provides explicitly that the safe harbors outlined in subsections (a) through (d) do not depend on a service provider's monitoring its service or affirmatively searching for infringing files. See § 512(m). If Congress considers imposing such a duty going forward, it should examine whether the best currently available tools are sufficiently reliable to identify infringing files without significant errors, and are resistant to misuse by claimants who might be tempted to file fraudulent or over-broad claims or to seek the removal of non-infringing material for reasons unrelated to copyright infringement. Congress should also seek to ascertain whether the currently available tools are inexpensive enough to be affordable for small and nonprofit online services. Finally, some of the big online platforms have already implemented proprietary upload filters on some of their services. If the technology is not performing in a satisfactory matter, that may indicate that requiring other services to use similar tools is at best premature. My understanding from the academic research into the operation of the notice-and-take-

down system is that the large number of ill-founded claims of copyright infringement filed under section 512(c) or through YouTube's content ID system are evidence that the current technological tools are too buggy to rely on. Congress may want to seek testimony from the researchers who have been studying that question.

New York University's Engelberg Center on Innovation Law and Policy recently posted an account of its unsuccessful efforts to learn the rules that YouTube uses to administer its counter-notification process in the course of seeking to contest a mistaken take-down of a video of one of its workshops on copyright law. See <https://www.law.nyu.edu/centers/engelberg/news/2020-03-04-youtube-takedown>. Eventually the Center reached out through private channels to resolve the dispute, but never succeeded in learning the rules that YouTube applies to efforts to contest takedowns initiated by its content ID system. The post concludes:

What lessons can be learned from this process?

First, it highlights how challenging it can be for users with strong counter-arguments to dispute an allegation of infringement by large rightsholders. The Engelberg Center is home to some of the top technology and intellectual property scholars in the world, as well as people who have actually operated the notice and takedown processes for large online platforms. We had legal confidence in our position that would cost an average user tens of thousands of dollars (if not more) to obtain. Even all of those advantages were not enough to allow us to effectively resolve this dispute. Instead, we had to also rely on our personal networks to trigger a process - one that is still unclear - that resulted in the accusations being removed. This is not a reasonable expectation to place on average users.

Second, it highlights the imperfect nature of automated content screening and the importance of process when automation goes wrong. A system that assumes any match to an existing work is infringement needs a robust process to deal with the situations where that is not the case. Our original counterclaim included a clear explanation of the nature of the video and the reasons for using the clips. It is hard to imagine someone with any familiarity with copyright law watching the video, reviewing our claim, and then summarily rejecting it. Nonetheless, that is what happened. No matter how much automation allows you to scale, the system will still require informed and fair human review at some point.

Third, it highlights the costs of things going wrong. The YouTube copyright enforcement system is likely the most expensive and sophisticated copyright enforcement system ever created. If even this system has these types of flaws, it is likely that the systems set up by smaller sites will be even less perfect.

## QUESTIONS FROM SENATOR COONS

*1. The Senate Judiciary Committee's 1998 report on the DMCA stated that "technology is likely to be the solution to many of the issues facing copyright owners and service providers in the digital age," and the Committee "strongly urge[d] all of the affected parties expeditiously to commence voluntary, interindustry discussions to agree upon and implement the best technological solutions available to achieve these goals." Has this cooperation worked in practice as Congress envisioned it should in connection with both Section 512 and 1201 of the DMCA? Why or why not?*

Copyright owners and online services have explored several collaborative efforts in the past 20 years to develop voluntary standards. In 1998, for example, record labels, ISPs, consumer electronics companies, information technology and security specialists, and music publishers launched the Secure Digital Music Initiative, which sought to develop impregnable digital rights management software for recorded music in order to enable copyright owners to distribute music online with only a modest risk of piracy. The participants abandoned the effort in 2001, having failed to develop a sufficiently effective technology. Because the group's efforts were confidential, it is hard for an outsider to ascertain why the initiative failed, but news stories published at the time suggested both that none of the technologies tested by the group proved to be sufficiently effective, and that the participants squabbled over their rights to assert proprietary control over technologies to which they contributed. In 2011, broadband internet service providers signed a memorandum of understanding with trade groups representing copyright owners to devise a "copyright alert system" in response to peer-to-peer file sharing. The participants launched the Copyright Alert System in February 2013, and abandoned it without explanation in January 2017.

In addition to these multi-stakeholder efforts, major copyright owners have negotiated private licensing agreements with the larger online services. The agreements involve use of privately-developed technology to detect and respond to online copyright infringement. Because the details of the agreements and of the technology are secret, it is hard to know whether the private deals have been effective and, if not, what their points of failure may have been. The terms and the limitations of these agreements seem to me to a promising avenue for further Congressional investigation.

*2. The internet and digital content distribution mechanisms have changed drastically in the past 22 years. What technological and practical challenges exist today that may require revising the DMCA, and what revisions would you suggest?*

Congress enacted the DMCA before the advent of social media, before the appearance of peer-to-peer file sharing software clients like Napster and Bittorrent, and before the internet became an essential communications medium that enables people to conduct necessary business and acquire vital information. Twenty years ago, online

services were largely optional for most people. Today, the world is very different. Federal, state, and municipal government agencies conduct a significant number of their activities online, relying on networked digital technology. The Copyright Office prefers online registration applications to applications sent through the mail, and 98% of copyright owners use the online option. See <https://www.copyright.gov/registration/docs/processing-times-faqs.pdf>. The US Patent and Trademark Office recently adopted a final rule requiring that all trademarks be registered electronically. See 84 Fed. Reg. 69330 (Dec. 18, 2019). Banks, libraries, schools, and stores encourage and sometimes require their customers, patrons, and students to conduct much of their business online. Copyright owners increasingly make their works available over digital networks through online streaming services. Online services, in short, are essential tools for most American's daily lives.

Meanwhile, both the information and entertainment industries have consolidated, greatly reducing competition. A small number of online platforms currently control a preponderance of online activity. A small number of media companies own the vast majority of movies and music. The dominant online platforms and the dominant copyright owners may already have too much political clout to make sensible copyright law reform feasible.

*3. You and Professor Tushnet raise concerns regarding Section 1201's anti-circumvention provisions for their lack of copyright infringement nexus. How would you revise Section 1201 without diminishing protections for copyrighted works?*

As I indicated in my written testimony, I don't believe that section 1201's anti-circumvention provisions currently provide meaningful protection for copyrighted works. Narrowing the scope of the prohibitions so that they apply only to circumvention for the purpose of copyright infringement might make the provisions more effective because members of the public would be more likely to appreciate them as legitimate anti-piracy measures. It would also reduce the burden on the Library of Congress to rule on requests to circumvent technological protections in order to repair tractors or monitor the data collected by medical devices. Copyright owners who support broad anti-circumvention provisions agree that it was never their expectation that the provisions would apply to consumer products with embedded software like garage door openers and printers, and excluding those devices from the scope of section 1201 is unlikely to have any effect on its usefulness for books, movies, music, and electronic games.

*4. You and Professor Tushnet suggest that a duty to monitor all user-posted content would stifle online providers. Would you support a middle ground that would require service providers to ensure that once infringing content has been removed pursuant to Section 512's notice-and-takedown procedure, the same user cannot repost the same content on any platform controlled by that provider?*

I don't view this suggestion as a middle ground. First, unless a service provider terminates any user who is the subject of a single take-down notice, preventing that user

from reposting the same content would require filtering all uploads to the service. Automated filtering tools are much too expensive for the vast majority of online services. Second, section 512 encourages service providers to remove or block any content that is the subject of a takedown notice, regardless of whether the complaint is well-founded. (A wrongly blocked user can file a counter-notice under 512(g) to seek to have the file restored, but most users don't pursue that option.) Since many 512 takedown notices turn out to complain of content that does not infringe any copyright owned by the complainant, imposing a duty to prevent users from uploading content that has been removed because of a section 512 complaint would block an enormous amount of non-infringing speech.

*5. In exchange for the safe harbor protections of Section 512, the DMCA established an online service provider duty to remove infringing content even without the input from copyright owners when faced with actual or red flag knowledge of infringement. Has the case law supported the intent of Congress in incentivizing service providers to be proactive when red flag knowledge exists? Your testimony and Professor Tushnet's testimony suggest that it has, while the testimony of Professors Aistars and Schultz paints a very different picture. How do you reconcile these conflicting narratives?*

I formed my understanding of Senators' and Representatives' purposes for the bargains embodied in the DMCA by attending many of the hearings; by reading all of the testimony, congressional reports, and bills; and by speaking with congressional staff and with lobbyists on all sides. Both the House and Senate Reports emphasize that the DMCA does not impose an affirmative duty on services to detect infringements, but does require services to respond if they acquire actual or red flag knowledge that a particular file or site is infringing. This is consistent with the understanding of the lobbyists with whom I spoke at the time. The Senate and House Reports, and the remarks of Senators and Representatives, envisioned "red flag" knowledge as arising when a human operator of an online service or compiler of an online index viewed an obviously infringing site. *See, e.g.,* S. Rep. 190, 105<sup>th</sup> Cong. 44, 48-49, 52 (1998); H. Rep. 551 pt. 1, 105<sup>th</sup> Cong. 25 (1998). As the larger online services have come to rely more heavily on automated processes, the opportunities for that sort of "red flag" knowledge have decreased. Most online services remove infringing content as soon as they gain actual knowledge that a particular file infringes. Indeed, because the incentives supplied by subsection 512(c) encourage online services to remove or block content as soon as they receive a complaint that meets statutory requirements *whether or not that content actually infringes any copyright*, most services remove content promptly upon receipt of such a complaint. Professor Aistars and Schultz expressed a different view about Congress's 1998 understanding of the term "red flag" knowledge. I don't know what information sources they consulted, so I can't account for their different impression of Congress's intent.

*6. Professor Aistars testified that students in her clinic who went through the process of addressing online infringement on behalf of copyright owners found the process “confusing and frustrating.” How can the notice-and-takedown process be improved, particularly for small creators? Would you recommend standardizing the process across service providers? If so, who should be responsible for establishing and enforcing those standards?*

I agree with Professor Aistars that both the notice-and-take-down process and the counter-notice-and-put-back process can be confusing and frustrating for unsophisticated users. (Indeed, the story recently posted by New York University's Engelberg Center on Innovation Law and Policy that I quoted in my response to Senator Hirono's question indicates that the process is also confusing and frustrating for sophisticated users. See <https://www.law.nyu.edu/centers/engelberg/news/2020-03-04-youtube-takedown>.) The Copyright Office has been conducting a study on how the section 512 safe harbors do and don't work, and I expect that it has collected a great deal of evidence about the problems with current notice-and-takedown and counternotice-and-putback procedures. The Office may be able to use that knowledge to work with online services to make the notice and counter-notice processes easier, less confusing, and more transparent.