



**Testimony of Gigi B. Sohn, President
Public Knowledge**

**Before the
U.S. Senate Committee on the Judiciary**

**Oversight Hearing On:
“The Analog Hole: Can Congress Protect Copyright and Promote
Innovation?”**

**Washington, DC
June 21, 2006**

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Chairman Specter, Ranking Member Leahy and other members of the Committee, my name is Gigi B. Sohn. I am the President of Public Knowledge, a nonprofit public interest organization that addresses the public's stake in the convergence of communications policy and intellectual property law. I want to thank the Committee for inviting me to testify on the question of how the analog hole impacts copyrights and innovation. I specifically want to focus my remarks on the impact of government-mandated efforts to close the analog hole on consumers.¹

Introduction and Summary

This is the digital golden age for consumers. They have numerous choices for buying digital content and for buying devices on which to play that content. Equally as important, they have numerous choices for creating their own content. User-generated content is driving our culture, our democracy, and increasingly, our economy. Indeed, a recent Pew Internet and American Life study² showed that a full 57% of young people produce their own content, be it

¹I would like to thank Public Knowledge interns Bill Herman, Chris Johns and Tim Schneider for assisting me with this testimony.

²“Teen Content Creators and Consumers” can be found at: http://www.pewinternet.org/PPF/r/166/report_display.asp

blogs, movies or music. As Professor Lawrence Lessig said at a recent Princeton University Conference, our culture has gone from one of “Read-Only” to “Read-Write.”

The ability of consumers to enjoy lawfully acquired digital and analog content and create their own content is dependent upon the analog hole, that is, the ability to convert analog content to digital. Popular consumer electronics devices like the TiVo and the Slingbox³ use the analog hole to operate. Consumers use the analog hole to take old home movies and videotapes and transfer them to longer-lasting digital media. The ability of consumers to benefit from the analog hole has resulted in great economic benefits for our country – the sales of consumer electronics devices, computers and digital media, both pre-recorded and blank, are booming.

Yet Hollywood is asking Congress to help it close the analog hole. I will not mince words – this would be profoundly anti-consumer and a radical change in the historic copyright balance. Closing the analog hole would immediately restrict lawful uses of technology and make millions of consumer devices obsolete. It would not be far-fetched to predict that closing the analog hole will cause a consumer backlash with ramifications for device manufacturers, retail stores, content producers and Congress.

Moreover, Hollywood has not clearly defined the problem it wants to fix. They have provided no evidence that use of the analog hole has resulted in any significant copyright infringement. The mere fact that a consumer can buy an analog to digital converter device is not evidence that such a device is being used illegally any more than the sale of kitchen knives indicates that they are being used for stabbings. If the concern is that certain individuals are taking analog content, digitizing it and placing it on peer-to-peer networks, then the answer is not

³For the uninitiated, the Slingbox is a device that permits you to watch your local TV shows and recorded shows on a laptop computer anywhere in the world.

to close the analog hole, but to use the many legal, technological and marketplace tools the industry has at its disposal to combat illegal use of those networks.

Closing the analog hole is the third technology mandate the content industry has sought from Congress, along with the video and audio flags, which are now part of communications reform legislation in this chamber. For none of those three has the content industry demonstrated 1) evidence of the harm that they seek to resolve with a tech mandate or 2) that the alleged harm outweighs the harm to lawful consumer uses of media and technology. I would urge this Committee and Congress to insist upon an “environmental impact” statement before it imposes technology mandates that will further tip the copyright balance away from consumers.

Closing the Analog Hole Would Have Grave Consequences for Consumers

Consumers rely on analog connections to use the media devices they own. DVD and CD players, iPods and Digital Video Recorders (DVRs) like TiVo all use analog connections to connect to other devices. For example, to use your DVD player, you merely plug it into your TV set using inexpensive analog cables. This is the “analog hole” that Hollywood wants to close.

An analog to digital converter is one of the most basic pieces of electronics in use today. These units are found in devices we don’t even think twice about – from electronic bathroom scales to digital thermometers. Put most simply, an analog to digital converter is anything that takes an analog signal (like sound, temperature, or light) and converts it into a digital signal. Cellphones, computers, televisions, and video game consoles all use analog to digital converters to operate.

Thus, it should come as no surprise that a large number of lawful consumer activities would be affected by legislation closing the analog hole. For example, time and place shifting, such as recording television shows onto a computer, or moving recorded content from one device over a home network, would be prohibited, as would excerpting a DVD for a PowerPoint or multimedia presentation. The ability to transfer content that one lawfully buys from one device to another has helped to drive the huge market for content and devices. Closing the analog hole will limit this ability and with it consumers' enthusiasm for purchasing these products.

Closing the analog hole will not only affect future devices, it will also affect the billions of dollars of consumer electronics devices that are already in people's homes. Devices that are purchased before an analog hole mandate goes into effect may not work with devices purchased after. For example, the television you own now may not work with the DVR you buy after the analog hole is closed. There is no transition period and no converter device to solve this. Recent consumer electronics sales numbers demonstrate the breadth of this problem:

- **Televisions:** In 2006, \$23 billion worth of televisions will be sold⁴ - \$18 million of that figure will be spent on digital televisions. As of 2005, there was a nationwide total of 287 million TVs⁵, and an estimated population of 295 million⁶ – nearly one television for every resident.
- **DVD Players:** The Digital Entertainment Group, a trade consortium dedicated to promoting the DVD technology, reports that 37 million DVD players were sold last year; nearly 80% of U.S. households currently have DVD players in their homes – that's 169 million DVD players.⁷
- **Digital Video Recorders:** One of the fastest growing consumer electronics devices is the Digital Video Recorder (DVR). In 2005, 19 million DVRs were sold worldwide.⁸

⁴Ibid.

⁵Television Bureau of Advertising: <http://www.tvb.org/nav/build_frameset.asp?url=/rcentral/index.asp>.

⁶U.S. Census: <<http://www.census.gov/prod/2005pubs/06statab/pop.pdf>>.

⁷The Digital Entertainment Group: <<http://www.dvdinformation.com/Highlights/index.cfm>>.

⁸In-Stat Research: <<http://www.instat.com/Abstract.asp?ID=162&SKU=IN0603110ME>>.

According to recent estimates, 12% of US households have a DVR, a number that is expected to rise to nearly 50% by 2009.⁹

Lastly, as my colleagues from TiVo and the Consumer Electronics Association will no doubt tell you, a technology mandate that will close the analog hole will have tremendous costs for device manufacturers. But it bears notice that inevitably, the consumer will bear much of this cost in increased prices. Thus, closing the analog hole will result in an anti-consumer trifecta – it would 1) limit lawful uses of technology and content; 2) make obsolete millions of devices; and 3) raise the cost of new devices. It is hard to think of a technology mandate that harms the consumer more.

The Analog Hole is the Last Resort for Preserving Fair Uses Prohibited by the DMCA

As this Committee knows, the Digital Millennium Copyright Act has been an embattled law since its passage in 1998. One of the primary reasons for this has been the effect of its anti-circumvention provisions on fair use. 17 U.S.C. § 1201(a)(1)(A) prohibits circumvention of access controls for any reason, including lawful uses like fair use.

The analog hole is an important backdoor solution to this problem. If I want to make a fair use excerpt of a movie on DVD to use in a presentation, I cannot lawfully break the encryption to do so. Instead, I must either hold up a video camera to the TV screen, or connect that camera to the DVD player's analog outputs. Without the analog hole, teachers, students, journalists and ordinary consumers seeking to comment upon, criticize, or otherwise lawfully use a portion of a digitally protected copyrighted work have no recourse under the law. This capability becomes increasingly important as more and more individuals create their own

⁹iMedia Connection <<http://www.imediaconnection.com/content/6516.asp>> (citing several industry reports).

content, such as online videos and video blogs (so called “vlogs”) that comment on news and entertainment programming.

Indeed, both the U.S. Copyright Office and the Motion Picture Association of America (MPAA) have said that the analog hole should be the only way for consumers to be able to engage in fair use of protected digital media. In its 2003 Triennial Review ruling, the Copyright Office dismissed a proposed Section 1201(a)(1) exemption for “ancillary works distributed on DVDs encrypted by CSS.”¹⁰ This exemption was proposed on behalf of movie critics who sought to reproduce short clips for purposes such as criticism and commentary: purposes explicitly enshrined in the statute preserving exemptions for fair use.¹¹ Although the Copyright Office acknowledged that important fair uses were at stake,¹² it nonetheless rejected the proposed exemption, and preserved the ban on circumventing DVD encryption. An important part of their reasoning was that users could rely on analog hole solutions to achieve the desired results without circumvention. The Copyright Office urged would-be fair users either to use their DVD player’s analog output or to point their video camera at their television and tape the movies in question. Thus, the Copyright Office denied the exemption request “[b]ecause users already have access to an analog copy of the work, they have the ability to engage in the desired activity.”¹³

The Copyright Office was not the first to suggest that would-be fair users use the analog hole to record protected digital media. In 2003, Fritz Attaway, the MPAA’s Executive Vice

¹⁰Letter from Marybeth Peters, Register of Copyrights, to James H. Billington, Librarian of Congress, 115 (Oct. 27, 2003), <http://www.copyright.gov/1201/docs/registers-recommendation.pdf> [hereinafter 2003 Recommendations].

¹¹17 U.S.C. § 107.

¹²2003 Recommendations, *supra* note , at 116. “There is little doubt that the desired use for comment and criticism by weblog critics can be within the fair use exception.” *Id.*

¹³*Id.*, at 116.

President, specifically advocated this as a solution to the needs of fair users,¹⁴ and made the same argument again in this year's Triennial Review.¹⁵ In both instances, he demonstrated the process at Copyright Office Hearings.

While we have stressed the negative impact that closing the analog hole would have on consumers, the Copyright Office's 2006 hearings show that educators also depend on the analog hole. Public Knowledge intern Bill Herman, a Ph.D. candidate at the University of Pennsylvania's Annenberg School for Communication, testified on April 3 in support of the two proposed exemptions that would allow professors to circumvent the copy controls on DVDs in order to make lawful uses of materials in the classroom.

As part of his testimony, Mr. Herman conducted a brief online survey of several dozen professors and instructors in fields such as communication and media studies. This is a small sample of a very large population of classroom instructors who use regularly use video materials in the classroom. He found that a majority of these educators use analog hole solutions, either capturing the signal from the analog output on their DVD player or videotaping their television—exactly as Mr. Attaway suggested they should. Virtually none of them thought that this was a good solution; they would all rather use a perfect digital copy. But rather than violate the DMCA, these educators used the analog hole to make the most efficient and effective use of their class time. Further, Mr. Herman testified that the only way to avoid this problem entirely would be to buy extra equipment at a cost of thousands of dollars per school and millions for the

¹⁴Fritz Attaway, Executive Vice President and Washington General Counsel, Motion Picture Association of America, testimony before the Copyright Office, May 2, 2003, at 69-70, *available at*: <http://www.copyright.gov/1201/2003/hearings/transcript-may2.pdf>.

¹⁵Fritz Attaway, testimony before the Copyright Office, April 3, 2006, at 56-57, *available at*: <http://www.copyright.gov/1201/2006/hearings/transcript-april03.pdf>.

education sector as a whole.¹⁶ Thus, the analog hole not only serves to preserve the rights of consumers—it gives teachers a legal way to save millions of student-hours and millions of dollars.

Proposed Legislation to Close The Analog Hole Would Harm Consumers

Last year, H.R. 4569, the Digital Transition Content Security Act of 2005 (DTCSA) was introduced in the House of Representatives. I urge the Senate not to introduce this or any other similar legislation to close the analog hole. In addition to the problems discussed above, which would result from any effort to close the analog hole, H.R. 4569 also suffers from a number of maladies specific to its substance: the mandated use of two specific protection technologies, encoding rules which would limit lawful uses, and bureaucratic oversight of technology by an inexperienced and overworked Patent and Trademark Office.¹⁷

A. The DTCSA Would Mandate an Unproven and Disputed Technology

The DTCSA requires the use of two technologies that have never been used in conjunction before: CGMS-A, an encryption technology, and VEIL, a watermarking technology. While CGMS-A is an established standard that is in use in some consumer electronic devices, it is by no means widespread. VEIL technology has only previously been used for toys that interact with Batman cartoons.¹⁸

¹⁶Bill D. Herman, Testimony on April 3, 2006, pp. 23-24, available at: <http://www.copyright.gov/1201/2006/hearings/transcript-april03.pdf>.

¹⁷Another concern is the enormous penalties for non-compliance with the robustness standards. TiVo addresses this topic in full in its testimony at p. 6.

¹⁸See <http://www.veilinteractive.com/>.

While the CGMS-A + VEIL technology was discussed at the Analog Hole Reconversion Discussion Group, a standards group with both industry and public interest participation, it was quickly dismissed as not worthy of further consideration. Thus, this technology has not been fully vetted by industry and public interest groups. If Congress feels it must do something about the analog hole, at a minimum, it should refer the technology back to industry and public interest groups so CGMS-A + VEIL can be thoroughly analyzed for its impact on consumers and costs to technology companies. In the complete absence of any such review, the imposition of such a detailed technology mandate would be unprecedented.

B. The DTSCA's Encoding Rules Would Limit Fair Use

The DTSCA would impose a detailed and complex set of encoding rules that would restrict certain lawful uses of content. The bill includes tiered levels of restriction based on the type of programming (*e.g.*, pay-per-view, video on demand) that would permit, in most cases, the making of one copy, and in some cases not permit any copies. Moreover, the encoding rules would limit time and space shifting, including the copying of a program from one DVR to another, or the copying of a television program to a portable computer. This upsets the balance established in copyright law between the needs of copyright holders and the rights of the public, by placing far too much control over lawful uses in the hands of the content producers.

C. The Patent and Trademark Office is Ill-Suited to Oversee Analog Hole Compliance

The DTSCA would delegate significant regulatory authority over analog hole compliance issues to the inexperienced and overworked US Patent and Trademark Office (PTO). That authority would include drafting, adopting, and enforcing robustness requirements for analog

video input devices, rules for approval of authorized digital output devices, rules for approval of authorized digital output and recording technologies, approval of changes to VEIL, and rules for control of downstream devices. As discussed above, devices and software that could be used to convert analog video signals into digital video signals are common, not just in consumer electronics and personal computers, but in microchip or software form embedded in a variety of devices. The DTSCA makes no distinction. Even if the Act governed only consumer electronics, it would still require the PTO to monitor the entirety of an ever-growing industry and approve not only specific copy protection technologies, but business models as well.

The PTO is particularly ill suited to take on this role. It has never engaged in this kind of oversight, and has struggled for years to keep up with its most important and core duty: examining patent and trademark applications. The backlog of patent applications¹⁹ and the questions surrounding patent quality are well documented.²⁰ Not only would a new analog hole approval process cost the government untold millions of dollars each year, but the additional bureaucratic bottleneck would hinder technological innovation and further slow the already backlogged patent approval process.

¹⁹Hon. Jon W. Dudas, Deputy Under Secretary of Commerce for Intellectual Property and Director of the United States Patent and Trademark Office, testimony before the Subcommittee on Intellectual Property, Senate Committee on the Judiciary, April 25, 2005, *available at*: http://judiciary.senate.gov/testimony.cfm?id=1475&wit_id=2495. “While the volume and technical complexity of patent applications have increased significantly, our capacity to examine patent applications has not risen at the same rate. The result is a pending-application backlog of historic proportions.” *Id.* See also U.S. Patent and Trademark Office, *Performance and Accountability Report for Fiscal Year 2005*, *at*: <http://www.uspto.gov/web/offices/com/annual/2005/2005annualreport.pdf> (citing an average patent pendency of 29.1 months).

²⁰Eugene R. Quinn, Jr., *The Proliferation of Electronic Commerce Patents: Don't Blame the PTO*, 28 RUTGERS COMPUTER & TECH. L.J. 121, 123 (2002). “[P]atent examiners are simply too overworked and do not have the proper resources to examine patent applications in a manner likely to result in the weeding out of patents that ought not see the light of day.” *Id.* See also, e.g., Katherine M. Zandy, *Too Much, Too Little, or Just Right? A Goldilocks Approach to Patent Examination Reform*, 61 N.Y.U. ANN. SURV. AM. L. 865, 868. “[A] wide range of patents are granted that fail to satisfy the requirements of novelty, nonobviousness, and utility.” *Id.*

Hollywood Has Not Shown that the Analog Hole is the Source of its Piracy Problems

Public Knowledge takes indiscriminate redistribution of digital content seriously; indeed, we have supported both content industry lawsuits against large-scale infringers using P2P software and the use of marketplace-based (as opposed to government mandated) technological protection measures.

Public Knowledge also believes that government should not legislate in the absence of evidence of a problem that can be solved by the proposed legislation. This is just such a case: Hollywood has not demonstrated that even one case of indiscriminate redistribution of its work was the result of analog to digital conversion. Its “evidence” usually relies on the existence of inexpensive analog to digital conversion devices, which they proudly hold up at panel discussions and at hearings. But the mere existence of these devices does not prove that they are being used for anything other than the lawful uses described above.²¹

Indeed, it appears that the problem Hollywood seeks to fix is caused not by use of the analog hole, but by the use of computers and digital networks. Infringement facilitated by those technologies is already being addressed by a wide range of recently developed legal and marketplace tools, including:

- *The Supreme Court’s decision in MGM v. Grokster and its aftermath.* The Supreme Court gave content owners a powerful tool against infringement when it held that manufacturers and distributors of technologies that are used to infringe could be held liable for that infringement if they actively encourage illegal activity. As a result, a number of commercial P2P distributors have gone out of business, moved out of the U.S., or sold their assets to copyright holders.

²¹The study that the MPAA relies upon in support of closing the analog hole has been criticized because it counts private copying – much of which is legal – as infringement. Ken Fisher, The problem with MPAA’s shocking piracy numbers, ARS Technica (June 5, 2006), at <http://arstechnica.com/news.ars/post/20060505-6761.html>

- *Lawsuits against mass infringers using P2P networks.* Both the RIAA and the MPAA continue to sue individuals who are engaged in massive infringement over peer-to-peer (P2P) networks. By their own admission, these lawsuits have had both a deterrent and educative effect. The RIAA now characterizes the P2P problem as “contained.”²²
- *The Family Entertainment and Copyright Act.* The FECA gave copyright holders a new cause of action to help limit leaks of pre-release works and made explicit the illegality of bringing a camcorder into a movie theater. It also provided for the appointment of an intellectual property “czar” to better enforce copyright laws.
- *Agreements by ISPs to pass on warning notices.* The war between Internet Service Providers and content companies has cooled. Last year, Verizon and Disney entered into an agreement by which Verizon will warn alleged copyright infringers using its networks, but will not give up their personal information to Disney. Officials at Verizon have informed me that they are considering similar arrangements with other content companies.
- *Increased use of copy protection and other digital rights management tools in the marketplace.* There are numerous instances of the use of digital rights management tools in the marketplace. iTunes Fairplay DRM is perhaps the most well known, but other services that use DRM include MSN music and video, Napster, Yahoo Music, Wal-Mart Music Downloads, Movielink, CinemaNow and iBeam. The success of some of these business models are a testament to the fact that if content companies make their catalogs available in a simple, flexible and reasonably-priced manner, those models will succeed in the marketplace without government intervention.

These tools are in addition to the strict penalties of current copyright law, including the DMCA. To the extent that the content industries are looking for a “speed bump” to keep “honest people honest,” I would contend that many such speed bumps already exist, while more are being developed every day without government technology mandates.

Finally, by far the most effective means of preventing massive copyright infringement involves the content industry doing what it took the music industry far too long to do²³ – satisfy

²²Jefferson Graham, *RIAA Chief Says Illegal Song-Sharing “Contained”*, USATODAY.COM, June 12, 2006, at http://www.usatoday.com/tech/products/services/2006-06-12-riaa_x.htm.

²³See Keynote Address of Edgar Bronfman, Chairman and CEO of Warner Music at <http://www.tvworldwide.com/events/pff/050821/agenda.htm>. “The Music Industry, like almost every industry faced with massive and rapid transformation first reacted too slowly and moderately, inhibited by an instinctive and reflexive reaction to protect our current business and business models.”

market demand by allowing consumers to enjoy fair and flexible access to content at reasonable prices (inevitably produced in a free market). DVDs are the best example of the market working. There, a government mandate –the Digital Video Recording Act – was rejected. Instead, the industry developed and adopted a protection system designed to “keep honest people honest.” Despite the fact that the protection system was defeated long ago, the DVD market has grown at an astounding rate – from zero in 1997 to \$25 million in sales and rentals last year. Moreover, as I noted above, many other new digital music and video distribution models, developed with content industry support and industry-agreed upon content protection, are emerging in the market. We believe that these efforts make government intervention in the free market unnecessary.

Conclusion

I want to again thank Chairman Specter, Ranking Member Leahy and the other members of the Committee for giving me the opportunity to present the viewpoint of consumers. Let me close with this thought. When Congress was considering the DMCA eight years ago, the content industry assured legislators that this would be the last law that they would seek to limit consumers’ lawful uses of digital media. But in the four Congress’ since then, we have seen proposed law after proposed law and numerous lawsuits to further limit consumer rights and innovation and impose restrictive costs on the technology sector. In this Congress alone, no

fewer than five bills total in both houses²⁴ would tip the copyright balance even further towards the content industry.²⁵ This is nothing more than carefully planned assault on consumers.

The Senate should not compound this effort by legislatively mandating technologies to close the analog hole. Such a mandate is premature, unnecessary and would cause great consumer cost, confusion and inconvenience. Before it acts, Congress at a minimum should require evidence that analog to digital conversion is a significant source of infringement, and that the harm to Hollywood outweighs the clear detriment to consumers.

²⁴They include H.R. 4569, discussed at pp. 9-12, above; S. 2644, H.R. 5361 and H.R. 4861 (limiting consumers' ability to record radio transmissions for personal use); and S. 2686 (limiting consumers' ability to lawfully use digital television transmission and to record radio transmissions for personal use).

²⁵In addition, two lawsuits have recently been filed by the content industry intended to limit certain uses of digital technology. Several major movie studios and television broadcasters have sued Cablevision for providing a network-based TiVo-like service, and the major record labels have sued XM radio for permitting consumers to record blocks of programming time and disaggregating them. In each case, the plaintiffs are seeking to force the technology providers to pay an extra licensing fee.