



UNITED STATES COPYRIGHT OFFICE

Long Comment Regarding a Proposed Exemption Under 17 U.S.C. § 1201

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ITEM A. COMMENTER INFORMATION

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These comments are submitted by the Entertainment Software Association (“ESA”), the U.S. trade association serving companies that publish computer and video games for game consoles, handheld devices, personal computers and the Internet. ESA represents the major game platform providers and almost all of the major video game publishers in the United States.¹

ESA’s member companies are leaders in bringing creative and innovative products and services into American homes and have made major contributions to the U.S. economy.² In fact, the U.S. video game industry generated \$36 billion in revenue during 2017,³ and provided jobs to more than 220,000 people across all fifty states.⁴ This innovation and economic activity

¹ A complete list of ESA’s member companies is available at <http://www.thesa.com/about-esa/members/> (last reviewed January 19, 2018).

² Aside from their significant and ongoing contributions to the traditional home video game and handheld video game markets, member companies have established fully-fledged online entertainment services (including mobile), developed popular and forward-looking immersive technologies (augmented, virtual, and mixed reality), and have taken the lead in the burgeoning esports industry. More innovation and creativity is promised in the future as the industry begins to embrace artificial intelligence and new ways to play and enjoy video games.

³ Press Release, Entertainment Software Association, *US Video Game Industry Revenue Reaches \$36 Billion in 2017* (Jan. 18, 2018), <http://www.thesa.com/article/us-video-game-industry-revenue-reaches-36-billion-2017/>.

⁴ Stephen E. Siwek, Entertainment Software Association, *Video Games in the 21st Century*, Entertainment Software Association 2, 36 (2017), http://www.thesa.com/wp-content/uploads/2017/02/ESA_EconomicImpactReport_Design_V3.pdf (“*Video Games in the 21st Century*”). In fact, about two thirds of U.S. households are home to at least one person who plays three or more hours of video games a week. Entertainment Software Association, *2017 Essential Facts about the Computer and Video Game*

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The authority for requesting this information is 17 U.S.C. §§ 1201(a)(1) and 705. Furnishing the requested information is voluntary. The principal use of the requested information is publication on the Copyright Office Web site and use by Copyright Office staff for purposes of the rulemaking proceeding conducted under 17 U.S.C. § 1201(a)(1). NOTE: No other advisory statement will be given in connection with this submission. Please keep this statement and refer to it if we communicate with you regarding this submission.

depends on strong copyright protection for the software and other creative works that are the lifeblood of the video game industry. Accordingly, ESA member companies have a strong interest in maintaining effective copyright protection, including protection against circumvention of technologies that control access to copyrighted game software.

ITEM B. PROPOSED CLASS ADDRESSED

Proposed Class 4: Audiovisual Works—HDCP/HDMI

ITEM C. OVERVIEW

Class 4 is a proposal to permit circumvention of access controls that protect valuable expressive works during the course of transmission from a source device to a display device. More specifically, the requested exemption would allow circumvention of High-Bandwidth Digital Content Protection (“HDCP”), a technological protection measure (“TPM”) designed to ensure that material cannot be captured and infringed when it passes through a High-Definition Multimedia Interface (“HDMI”).

HDMI is the leading interface for communicating audiovisual information between consumer electronics devices, making HDCP a critical component of secure distribution systems used for expressive content. The Register has never before considered, let alone recommended, a proposal to circumvent HDCP. As set forth below, the proponents’ sparse comments do not provide a sufficient factual record or legal basis to grant an unprecedented exemption.⁵

The proposed exemption appears to reach any type of audiovisual material distributed through or rendered on platforms that make use of HDMI. Although video games and video game consoles do not figure prominently in Mr. Huang’s comments, he suggests that the exemption must be extended to HDMI use on video game consoles because gameplay cannot currently be captured and cannot currently be remixed with audio or visual commentary.⁶ As a factual matter, this is incorrect. Video game consoles provide users with the ability to capture and archive gameplay. Video game consoles also provide users with the ability to offer commentary on gameplay and to share it across a number of different platforms. In fact, mechanisms for sharing gameplay are flourishing in the market, and make the requested exemption unnecessary.⁷

Industry 6 (Apr. 2017), http://www.theesa.com/wp-content/uploads/2017/09/EF2017_Design_FinalDigital.pdf (“2017 ESA Essential Facts”).

⁵ The initial and primary proponent of the exemption is Andrew “Bunnie” Huang. The only other proponent of the exemption is the Free Software Foundation (“FSF”). FSF’s comment – which contains a single paragraph on the proposed exemption – does not identify any adverse effects that stem from the prohibition on circumvention, does not consider alternatives to circumvention, does not assess whether contemplated uses are infringing, does not weigh the likelihood that circumvention will facilitate piracy, and does not evaluate the exemption pursuant to the statutory factors. In other words, the cursory analysis provides no insight into whether an exemption is warranted.

⁶ Huang Comments at 2 (arguing that circumvention is necessary “to record a video gamer’s gameplay and remix it with audio and visual commentary about the game or their performance”); *id.* at 4 (asserting that gameplay is “not available in a persistent format”); *id.* at 5 (referring to gameplay as “ephemera”).

⁷ See *infra* Part E.1.

Mr. Huang also suggests that the exemption should apply to other media available through video game consoles, such as movies and television programming. According to Mr. Huang, circumventing HDCP is necessary because users are limited in their ability to display such media. This too is incorrect. Existing alternatives can be used to facilitate most or all of the display options that Mr. Huang identifies. To the extent that is not the case, Mr. Huang's complaint seems more concerned with functionality he perceives as missing from source or display devices, rather than any inherent limitations of HDMI or HDCP. To the extent he perceives consumer demand for a source or display device with the functionality described, he can and should obtain an HDMI/HDCP license and build and market the device. In any event, Mr. Huang does not adequately explain how circumventing HDCP would address the harms that he identifies.

Even if Mr. Huang could establish that the application of Section 1201 to HDCP imposes adverse effects, and even if Mr. Huang could establish that the proposed uses are noninfringing (neither of which is the case), the proposed exemption would be unwarranted because it is likely to promote a substantial amount of other activity that is infringing. If permitted to circumvent HDCP, users could intercept and reproduce, retransmit, or otherwise infringe the copyrights in valuable copyrighted works more readily than is currently the case in the secure environments in which HDMI is used. Mr. Huang never addresses this important consequence of lifting the prohibition on circumvention. That is reason enough to reject his proposal.

ITEM D. TECHNOLOGICAL PROTECTION MEASURE(S) AND METHOD(S) OF CIRCUMVENTION

Video game consoles are the center of an intellectual property ecosystem that makes copyrighted entertainment products easily and legally accessible, to the benefit of creators, distributors, and video game fans. More than 150 million Americans play video games,⁸ and 48% of U.S. households own a dedicated gaming console.⁹ Through these consoles, consumers can access vast numbers of valuable copyrighted works, including not only video games, but also movies, television, music and live sports programming that is provided by ESA's members and a wide range of content partners.¹⁰

These creators make their copyrighted works available through video game consoles because platform providers use access controls to make consoles a secure platform for content distribution. As the Register concluded in 2012:

Console access controls protect not only the integrity of the console code, but the copyrighted works that run on the consoles. In so doing, they provide important incentives to create video

⁸ Entertainment Software Association, *2015 Essential Facts about the Computer and Video Game Industry*, at 2 (Apr. 2015), <http://www.theesa.com/article/150-million-americans-play-video-games/>.

⁹ *2017 ESA Essential Facts* at 6.

¹⁰ See, e.g., Xbox Entertainment, <http://www.xbox.com/en-US/entertainment?xr=shellnav> (last visited Feb. 7, 2018); Nintendo Wii U eShop, <https://www.nintendo.com/wiiu/built-in-software#/nintendo-eshop> (last visited Feb. 7, 2018); Nintendo Switch Hulu, <https://www.nintendo.com/games/detail/hulu-switch> (last visited Feb. 7, 2018); PlayStation Network, <https://www.playstation.com/en-us/network/> (last visited Feb. 7, 2018).

games and other content for consoles, and thus play a critical role in the development and dissemination of highly innovative copyrighted works.¹¹

While securing video game consoles is critical, a secure content distribution system requires access controls at each stage of the distribution process. One way that console manufacturers can assure content providers that making their valuable expressive works available on consoles will not result in wide-scale infringement is to provide assurances that content will remain protected when transmitted from the console to a display device.

HDMI technology is a convenient and fast way to transmit very high-resolution video and sound. For that reason, use of HDMI is extremely common for connecting modern consumer electronics devices. Licenses to implement the HDMI standard are readily available to consumer electronics manufacturers.¹² Because of both its desirable functional characteristics and its security, manufacturers have incorporated HDMI into all major video game consoles.

Works transmitted through HDMI are protected by HDCP, which (when active) encrypts content as it flows from a source device (like a video game console) to a display device (like a television). Before facilitating transmission, HDCP also performs an authentication check, which ensures that content is being sent to a compliant (secure) device. These protections prevent users from intercepting transmissions without authorization and, in turn, prevent valuable copyrighted works from being reproduced, retransmitted, or otherwise infringed. In other words, the security offered by HDCP protects content owners from copyright infringement during an important step in the distribution process, and thus preserves the incentive to develop and disseminate expressive works. Fostering new means of content distribution, such as distribution through game consoles protected by TPMs like HDCP, is precisely what Congress had in mind when it enacted Section 1201.¹³

In his comments, Mr. Huang does not explain precisely why it is necessary to circumvent HDCP to make noninfringing uses of video games. As elaborated below, HDCP does not preclude users from streaming, saving, or sharing gameplay. Nor does HDCP prevent users from remixing video of their gameplay with commentary about a game or performance. Video game consoles provide users with other options for pursuing both of these uses, and they are not limited by HDCP. ESA understands that at least in many instances, HDCP is not even activated when gameplay is transmitted through the HDMI output of a console.

Mr. Huang likewise fails to explain why circumventing HDCP is necessary to make noninfringing use of other media content available on video game consoles. Mr. Huang's contemplated uses can be accomplished through existing technology or by viewing content on multiple devices. To the extent that some source or display devices do not provide sufficient functionality for Mr. Huang, any adverse effects stem from the choice of input/output ports and/or functionality implemented in the devices, not from the prohibition on circumventing

¹¹ Exemption to Prohibition on Circumvention of Copyright Protection Systems for Access Control Technologies, 77 Fed. Reg. 65,260, 65,274 (Oct. 26, 2012) ("2012 Final Rule").

¹² Digital Content Protection: Licensing (last reviewed Feb. 1, 2018), <https://www.digital-cp.com/licensing>.

¹³ See, e.g., *E.g.*, H.R. Rep. No. 105-551, pt. 1, at 10 (1998) ("When copyrighted material is adequately protected in the digital environment, a plethora of works will be distributed and performed over the Internet.").

HDCP. In any event, ESA’s understanding is that licenses should be available for Mr. Huang or others to develop HDMI/HDCP compliant source or display devices with the kinds of functionality he seeks.

The proposal to exempt circumvention of HDCP carries substantial danger for content owners. As set forth below, and in the Joint Creators and Copyright Owners’ Comments, bypassing HDCP would undermine the ability of content owners to recoup the substantial investments they make to develop highly expressive works. In this way, the exemption would discourage creation. It should be rejected.

ITEM E. ASSERTED ADVERSE EFFECTS ON NONINFRINGING USES

Section 1201’s prohibition on circumventing HDCP does not, and over the next three years will not, adversely affect the ability of individuals who play video games (“gamers”) to record and save gameplay, share gameplay, or accompany gameplay with audio or visual commentary. Nor does or will the application of Section 1201 to HDCP adversely affect noninfringing uses of other copyrighted works available on video game consoles. For these reasons, and because the proposed methods of circumvention will facilitate infringement, Mr. Huang’s request to circumvent HDCP embedded in video game consoles should be rejected.

1. An exemption for circumventing HDCP should not be granted as to video game consoles because proponents fail to demonstrate any adverse effects.

“Those who seek an exemption from the prohibition on circumvention bear the burden of establishing that the requirements for granting an exemption have been satisfied.”¹⁴ With respect to adverse impact, “the proponent of an exemption must show by a preponderance of the evidence that the harmful impact on noninfringing uses of copyrighted works ‘is more likely than not.’”¹⁵ This showing must be made with “reliable, probative, and substantial evidence.”¹⁶ No such showing has been made with respect to use of HDCP in connection with HDMI transmission from video game consoles to display devices.

Mr. Huang’s proposed exemption contemplates a substantial number of uses, which encompass all types of entertainment content and a wide range of consumer electronics devices. However, with respect to video games, Mr. Huang identifies only two uses: recording gameplay and “remixing” it with audio and visual commentary.¹⁷ Neither use is adversely affected by Section 1201’s prohibition on circumventing HDCP.

¹⁴ U.S. Copyright Office, Section 1201 Rulemaking: Sixth Triennial Proceeding to Determine Exemptions to the Prohibition on Circumvention, Recommendation of the Register of Copyrights 13 (Oct. 2015), <https://www.copyright.gov/1201/2015/register-recommendation.pdf> (“Register’s 2015 Recommendation”).

¹⁵ Register’s 2015 Recommendation at 14 (citation omitted).

¹⁶ *Id.* (quotation marks omitted).

¹⁷ Huang Comments at 2 (arguing that circumvention is necessary “to record a video gamer’s gameplay and remix it with audio and visual commentary about the game or their performance.”); *id.* at 4 (asserting that gameplay is “not available in a persistent format”); *id.* at 5 (referring to gameplay as “ephemera”).

Current video game consoles provide features for gamers to record videos of gameplay.¹⁸ Recorded videos are saved in a gallery for future viewing and, once saved, can be edited in various ways. The PlayStation 4 permits gamers to add visual effects, transitions, themes, and music.¹⁹ It also permits gamers to add audio or visual commentary.²⁰ Similarly, the Xbox One enables users to edit clips, combine clips, display clips using picture-in-picture, record voiceovers, and otherwise customize recorded clips.²¹ The Nintendo Switch also has editing capabilities.²² In addition to allowing users to record and edit gameplay, modern consoles allow users to share captured videos in a number of different ways. Through consoles or, in some cases, after exporting to a USB drive, users may upload videos to online services offered by manufacturers and to various social media platforms.²³

In addition to functionality for capturing, editing, and sharing gameplay videos, several consoles have specific functionality allowing gamers to transmit their gameplay live, on platforms such as Twitch and YouTube gaming.²⁴ When streaming on these platforms, users can provide audio and visual commentary, record and archive their gameplay video,²⁵ and interact with individuals viewing their broadcast through chat features.²⁶ Both Twitch and YouTube Gaming are enormously popular and experiencing rapid growth. For example, there are already more than 2,000,000 active broadcasters on Twitch.²⁷ At any given time, there are some 27,000 gamers transmitting their gameplay on Twitch and 788,000 gamers watching streams on the

¹⁸ See, e.g., *Capturing game clips and screenshots*, Xbox Support, <https://support.xbox.com/en-US/xbox-one/console/capture-game-clips-and-screenshots> (last visited Feb. 7, 2018); *Save and Share PS4 Gameplay Videos*, PlayStation Support, https://support.us.playstation.com/articles/en_US/KC_Article/Save-and-Share-PS4-Gameplay-Videos (last visited Feb. 7, 2018); *How to Capture and Edit Gameplay Video*, Nintendo Support, http://en-americas-support.nintendo.com/app/answers/detail/a_id/27540/~how-to-capture-and-edit-gameplay-video (last visited Feb. 7, 2018).

¹⁹ See *SHAREfactory: Tools of the Trade*, YouTube (Apr. 29, 2014), https://www.youtube.com/watch?v=-imG1_xxGI0.

²⁰ *Id.*

²¹ See *Editing videos with Upload Studio*, Xbox Support, <https://support.xbox.com/en-US/xbox-one/apps/upload-studio-edit-videos> (last visited Feb. 7, 2018).

²² *How to Capture and Edit Gameplay Video*, Nintendo Support, http://en-americas-support.nintendo.com/app/answers/detail/a_id/27540/~how-to-capture-and-edit-gameplay-video (last visited Feb. 7, 2018).

²³ See, e.g., *Capturing game clips and screenshots*, Xbox Support, <https://support.xbox.com/en-US/xbox-one/console/capture-game-clips-and-screenshots> (last visited Feb. 7, 2018); Eddie Makuch, *You can upload Xbox One gameplay directly to YouTube starting tomorrow*, Gamespot (Apr. 8, 2014), <https://www.gamespot.com/articles/you-can-upload-xbox-one-gameplay-directly-to-youtube-starting-tomorrow/1100-6418823/>; *Save and Share PS4 Gameplay Videos*, PlayStation Support, https://support.us.playstation.com/articles/en_US/KC_Article/Save-and-Share-PS4-Gameplay-Videos (last visited Feb. 7, 2018); *How to Capture and Edit Gameplay Video*, Nintendo Support, http://en-americas-support.nintendo.com/app/answers/detail/a_id/27540/~how-to-capture-and-edit-gameplay-video (last visited Feb. 7, 2018).

²⁴ See, e.g., *Twitch*, PlayStation, <https://www.playstation.com/en-us/explore/playstationnetwork/entertainment/twitch/> (last visited Feb. 7, 2018); *Twitch Broadcast Walkthrough*, YouTube, <https://www.youtube.com/watch?v=894253OJn0w> (last visited Feb. 7, 2018).

²⁵ Philip Kollar, *Twitch is Dropping Its Save Forever Feature, but Users Can Still Archive Highlight Clips*, Polygon (Aug. 6, 2014), <https://www.polygon.com/2014/8/6/5975413/twitch-video-on-demand-no-save-forever>.

²⁶ See, e.g., <https://www.twitch.tv/p/about> (last visited Feb. 7, 2018).

²⁷ See <https://www.twitch.tv/p/partners/faq> (last visited Feb. 7, 2018).

platform.²⁸ Similarly, on YouTube Gaming, there are at any given time some 7,000 gamers transmitting and 308,000 gamers watching (and probably others on YouTube Live).²⁹ Put simply, the uses of gameplay that Mr. Huang complains of being unable to make are happening now, on a massive scale. Section 1201 as applied to HDCP is not preventing gamers from recording and sharing their gameplay, with and without commentary.

Much the same is true with respect to Mr. Huang's contemplated use of other audiovisual material rendered on game consoles. Obviously such material can be displayed on HDMI-compatible devices. That is the whole point of HDMI, and it is what is happening in tens of millions of American homes where a game console is connected to a television with an HDMI cable. Many of the uses that Mr. Huang suggests involve simultaneous display of content from multiple sources.³⁰ But there are available display devices that permit split-screen or picture-in-picture display of HDMI-delivered content for users that desire such functionality.³¹ Moreover, simultaneous display can be (and commonly is) accomplished by viewing content on multiple devices.³² Mr. Huang fails to account for these options, or for other options that mitigate the purported effects of HDCP.³³

These alternatives are sufficient to facilitate Mr. Huang's contemplated uses. Even if they were somehow lacking, Mr. Huang does not explain how circumventing HDCP would mitigate the adverse effects he perceives, because such circumvention alone would not provide the functionality he describes. It appears that Mr. Huang's primary issue is really with the functionality available on HDMI-compliant source and display devices, and particularly that he does not think enough of them enable split-screen or picture-in-picture display. To the extent he is right that there is unmet consumer demand for such functionality, ESA's understanding is that licenses should be available for Mr. Huang or others to develop HDMI/HDCP compliant source and display devices with the kinds of functionality he seeks.

²⁸ See Sarah Perez, *YouTube Gaming grew its streamer base by 343% in 2017, Twitch by 197%*, Tech Crunch (Jan. 25, 2018), <https://techcrunch.com/2018/01/25/youtube-gaming-grew-its-streamer-base-by-343-in-2017-twitch-by-197/>.

²⁹ *Id.*

³⁰ Huang Comments at 2 (contemplating, for example, simultaneous display of political debate and live blog, "side-by-side comparison between two films," "simultaneous display of the coverage of a live event by more than one news source," "rescaling the display of a work so that text or visual overlay can appear alongside it," "rescaling the video to display targeted advertisements in the margins").

³¹ See *Displaying Picture-in-Picture (PIP)*, Bravia i-Manual, http://docs.esupport.sony.com/imanual/NA/EN/hx750/c_pippap_uc_pip.html (last visited Feb. 7, 2018); *How to use PiP (Picture in Picture) on a Samsung TV to Watch 2 Screens at once*, YouTube (Dec. 30, 2016), <https://www.youtube.com/watch?v=65p6RSv2ERk>; *Displaying Picture In Picture (PIP); How to use the Twin Picture function on Sony's Android TV*, Sony, http://sony-eur-eu-en-web--eur.custhelp.com/app/answers/detail/a_id/121698/~how-to-use-the-twin-picture-function-on-sonys-android-tv%3F (last visited Feb. 7, 2018).

³² E.g., Lance Whitney, *More People Using TV and Tablets at Same Time*, CNet (Apr. 5, 2012), <https://www.cnet.com/news/more-people-using-tv-and-tablets-at-same-time/>.

³³ See Joint Creators and Copyright Owners' Comment at Part E.3.

2. An exemption for circumventing HDCP should not be granted because it would promote infringement.

It is also Mr. Huang's burden to show "that uses affected by the prohibition on circumvention are or are likely to be noninfringing."³⁴ Mr. Huang does not provide a particularized description of the uses that he intends to make with respect to video games or other media made available on video game consoles. Instead Mr. Huang describes potential uses in vague and largely categorical terms,³⁵ and provides a few stylized examples within his categories.

This is insufficient. Under Section 1201, exemptions are to be adopted with respect to "a particular class of works."³⁶ Congress made clear that "the 'particular class of copyrighted works' [is to] be a narrow and focused subset of the broad categories of works of authorship . . . identified in section 102 of the Copyright Act (17 U.S.C. § 102)."³⁷ However, Mr. Huang's proposed class seems to amount to something like all audiovisual works for all lawful purposes, so long as those works happen to be rendered on a device with an HDMI output. The Register has never recommended an exemption for such a broad class.

Indeed, as the Register has emphasized, "[a]n exemption should provide reasonable guidance to the public in terms of what uses are permitted, while at the same time mitigating undue consequences for copyright owners."³⁸ To that end, "[a] mere requirement that a use be 'noninfringing' or 'fair' does not satisfy Congress's mandate to craft 'narrow and focused' exemptions."³⁹ Mr. Huang's proposed exemption fails this fundamental test. He seeks an exemption as to uses that constitute noninfringing "[p]olitical expression," "[e]ducational expression," "[n]ews expression," "[s]afety expression," "[c]ultural expression," and "[c]ommercial expression."⁴⁰ For some of these categories, Mr. Huang supplies a few examples of uses that allegedly are not infringing.⁴¹ For other categories, Mr. Huang supplies only one example.⁴² In either circumstance, the effort is insufficient to save his request that the Register exempt uses on a broad, vacuous, and categorical basis.⁴³ It simply is not feasible to evaluate whether all the uses that Mr. Huang imagines as covered by the proposed exemption are infringing.⁴⁴

³⁴ Register's 2015 Recommendation at 14-15; *see also* NPRM, 82 Fed. Reg. at 49,551-52.

³⁵ *See, e.g.*, Huang Comments at 2 (requesting exemption for noninfringing uses including "[p]olitical expression," "[e]ducational expression," "[n]ews expression," "[s]afety expression," "[c]ultural expression," and "[c]ommercial expression").

³⁶ 17 U.S.C. § 1201(a)(1)(B).

³⁷ H.R. Rep. No. 105-551, pt. 2, at 38 (1998).

³⁸ Register's 2015 Recommendation at 100.

³⁹ *Id.*

⁴⁰ Huang Comments at 2.

⁴¹ *Id.*

⁴² *Id.*

⁴³ Register's 2015 Recommendation at 100.

⁴⁴ *Id.*; *see also* NPRM, 82 Fed. Reg. at 49,558 ("Proponents of exemptions should present their complete affirmative case for an exemption during the initial round of public comment."). Insofar as Mr. Huang seeks an exemption for format shifting and space shifting, Huang Comments at 3, the Register has repeatedly rejected such proposals. *E.g.*, Register's 2015 Recommendation at 107-26; *see also* *Disney Enterprises, Inc. v. VidAngel, Inc.*, 869 F.3d 848, 862 (9th Cir. 2017) ("The reported decisions unanimously reject the view that space-shifting is fair use under § 107.").

In any event, Mr. Huang’s proposed exemption seeks to enable a wide range of reproduction, public distribution, and public performance of copyrighted game displays. He also seeks to enable creation of derivative works of such displays. Some such uses might constitute fair uses, but Mr. Huang does not put enough parameters around his proposal to ensure that would necessarily be the case. For example, if a gamer’s gameplay were to be “remixed” into a television commercial using the game company’s copyrighted expression to sell unrelated products without obtaining the customary licenses, there cannot be much doubt that airing such a commercial would be infringing. In sum, Mr. Huang’s perfunctory analysis, with respect to video games and other expressive content made available through video game consoles, is insufficient to satisfy his burden to establish noninfringement.

Additionally, permitting circumvention of HDCP would enable a substantial amount of infringing activity, by enabling users to capture high-quality output that copyright owners have sought to protect. After capturing a perfect copy of that high-quality output, the output could be reproduced, adapted, publicly distributed, publicly performed or otherwise used in an infringing manner.⁴⁵ And this issue applies not only to gameplay, but also to entertainment content such as movies, television, music and live sports programming that may be rendered on a video game console or other device with an HDMI output. This activity would do substantial harm to copyright owners. It could, for example, enable consumers who use a video game console to access content through subscription streaming services, like Netflix, to make perfect, permanent copies of streamed material, obviating any need to purchase permanent copies of expressive content and reducing the long-term need to maintain access to the subscription service. Because the current prohibition on circumvention inhibits a substantial amount of infringing use, and because granting the requested exemption will allow infringing uses to flourish, the exemption should be rejected.

3. The statutory factors weigh against granting an exemption for circumventing HDCP.

The statutory factors weigh against granting the proposed exemption. First, with respect to the availability for use of copyrighted works, the Register has recognized that protecting the security of content distribution systems helps encourage the development and dissemination of highly expressive works.⁴⁶ HDCP is an important part of securing content distribution systems. An exemption permitting individuals to circumvent HDCP would diminish the availability of copyrighted content in two ways: by encouraging or enabling infringement and by discouraging use of HDMI to provide authorized display of high quality audio and video.

Mr. Huang makes no countervailing showing that circumvention of HDCP will promote the availability of copyrighted works. For example, use of HDCP has not prevented gamers from recording and sharing gameplay, with or without commentary. To the contrary, alternatives for capturing, editing, and transmitting gameplay are flourishing.⁴⁷ Alternatives for

⁴⁵ See *supra* Part D.

⁴⁶ Cf. Register’s 2012 Recommendation at 48.

⁴⁷ See *supra* Part E.1.

simultaneous display of other expressive content made available on video game consoles are also available. Because HDCP encourages the creation and distribution of creative content, and has not impeded users from developing expressive material through existing platforms, HDCP has the effect of increasing the availability of copyrighted works.⁴⁸

With respect to the availability of works for nonprofit archival, preservation, and educational purposes, Mr. Huang offers no meaningful evidence that circumventing HDCP as to media available on video game consoles would advance these purposes.⁴⁹ This is particularly true with respect to video games. Contrary to Mr. Huang's assertions, gameplay is not ephemeral and can be archived by individual gamers.⁵⁰ Moreover, preservation and study of video games is addressed adequately by the existing video game preservation exemption.⁵¹

Mr. Huang also fails to demonstrate that the proposed exemption will have a meaningful impact on criticism, comment, news reporting, teaching, scholarship, or research. While he uses all of those words, and specifically mentions the possibility of gamer commentary, the exemption does not target these kinds of use, and he provides no tangible evidence that such uses would increase if HDCP could be circumvented. Alternatives already enable gamers to provide commentary through a number of different platforms,⁵² and the existing game preservation exemption also addresses scholarly purposes.⁵³ Regarding other content available on game consoles, HDCP does not prevent individuals from engaging in the identified expression. And, for the most part, contemplated uses can be achieved using existing technology without circumvention.

As to the effect of circumvention on the market for or value of copyrighted works, Mr. Huang rests on a conclusory assertion that circumvention for noninfringing uses will not harm the market for copyrighted works and would, instead, increase their value by enabling new uses. To begin with, Mr. Huang provides no support for his assertion that the contemplated uses would increase the value of copyrighted works. Mr. Huang's focus on allegedly noninfringing uses is also incomplete. Circumventing HDCP will facilitate a substantial amount of infringing activity by allowing users to intercept and make perfect copies of the high-quality output that copyright owners have sought to protect. As discussed above, this captured output can be reproduced, adapted, retransmitted or otherwise infringed.⁵⁴ In past proceedings, the Register has emphasized that the possibility of such infringement must be considered when evaluating market harm.⁵⁵ Here, the likelihood of infringement weighs heavily against the proposed exemption.

⁴⁸ Cf. Register's 2012 Recommendation at 47; Register's 2015 Recommendation at 196, 200.

⁴⁹ While Huang offers a handful of uses that purportedly advance educational purposes, the uses could be achieved without circumvention and, accordingly, do not establish that the proposed exemption would advance educational purposes.

⁵⁰ See *supra* Part E.1.

⁵¹ See 37 C.F.R. § 201.40(b)(8)(ii).

⁵² See *supra* Part E.1.

⁵³ See 37 C.F.R. § 201.40(b)(8)(i)(B).

⁵⁴ See *supra* Part D.

⁵⁵ Register's 2012 Recommendation at 49.

DOCUMENTARY EVIDENCE

ESA is not submitting any exhibits regarding this proposed class.