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INTRODUCTION

In the past decade, streaming has become one of the most popular formats of “consuming” entertainment and other content—from music to videos, and concerts, sports, conferences, and other events. In the United States, the majority of consumers subscribe to one or more streaming services today. Popular streaming services include famous platforms such as Spotify, Netflix, Apple Music, or Apple TV, Pandora, YouTube, and more. Beside subscription-based services, several of these platforms offer “freemium,” or ad-paid version of their services, which allow users to access content with advertisements for free. As elaborated in several industry reports and other publications, the rise of streaming services has been made possible by the exponential growth in bandwidth capacity and Internet penetration during the past two decades, combined with the wide dissemination of smart phones, tablets, and similar devices used by end-users to stream.¹ The growing price competitiveness of subscriptions for paid streaming services and their large collections are also important factors in this respect.²

An alternative to file downloading, streaming allows users to access the streamed content for immediate listening or watching, and in

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† <https://doi.org/10.1093/ajcl/avac021>

1. For a general review on the economic aspects of streaming, see Christian L. Castle & Claudio Feijóo, World Intellectual Property Organization [WIPO], *Study on the Artists in the Digital Music Marketplace: Economic and Legal Considerations*, at 4–5, WIPO Doc. No. SCCR/41/3, (June 1, 2021), www.wipo.int/edocs/mdocs/copyright/en/sccr_41/sccr_41_3.pdf. See also WIPO, *Study on the Socio Economic Dimension of the Unauthorized Use of Signals: Part I: Current Market And Technology Trends in the Broadcasting Sector 36*, WIPO Doc. No. SCCR/19/12 (2009), www.wipo.int/edocs/mdocs/copyright/en/sccr_19/sccr_19_12.pdf.

2. In general, see Castle & Feijoo, WIPO, *supra* note 1.

a non-permanent manner. Yet, while streaming has become ubiquitously popular and one of the more prevalent methods of content distribution today, this technology profoundly challenged the traditional relationship between copyright owners, intermediaries and service providers, and users.³ This Report offers a review of the legal challenges that streaming, and the ensuing creation of a “celestial jukebox,”⁴ represents for copyright owners and copyright intensive industries and the legal responses that have been developed, so far, in the United States. Due to its limited scope, however, this Report presents only a summary of the existing legal regulation and case laws as well as recent developments and remaining open issues. Readers interested in a more comprehensive analysis can find additional information in the sources cited in footnotes. Moreover, discussions are currently taking place in the U.S. Senate and within the U.S. Copyright Office regarding copyright reforms precisely to address streaming technology. This Report briefly refers to these discussions at the time of writing, yet readers need to follow future updates and developments.⁵

In particular, the Report proceeds as follows. Part II offers a primer of streaming and a general review of the current legal responses, and remaining challenges, under U.S. copyright law. Part III addresses the specific regulation of existing streaming services. These services include digital service providers (DSPs) and user generated content (UGCs) services. DSPs are closed platforms that control their catalogues and content, while UGCs are open platforms that allow users to upload contents. Streaming services can also be divided into interactive, or on-demand, services and non-interactive services, which often transmit live-streaming content. Notably, Part III.A focuses on the regulation of legal streaming services, both subscription-based and freemiums, and highlights the licensing models used by these services. Part III.B addresses illegal streaming services and the recent U.S. development to strengthen the legal responses against these services. Part III.C addresses the so called “semi-legal services,” whose main objective is legal streaming, but at times may stream illegal contents. This Part focuses, in particular, on the safe harbor provisions established by the Digital Millennium Copyright Act (DMCA). Part IV briefly concludes the Report and highlights its main takeaways.

I. CONTEXTUALIZING THE LEGAL DISCUSSION ON STREAMING

A. *A Brief Primer of Streaming Technology*

As mentioned, streaming allows users to view or listen to music or video content over the Internet without requiring the download of the

3. See *infra* Part I.A.

4. This term was first used by Paul Goldstein in the 1990s. See PAUL GOLDSTEIN, COPYRIGHT’S HIGHWAY: THE LAW AND LORE OF COPYRIGHT FROM GUTENBERG TO THE CELESTIAL JUKEBOX (1994).

5. See *infra* Part III.C.

file to the recipient's computer.⁶ To give a popular example, Apple iTunes' subscribers download their desired song to listen to it while Spotify's subscribers do not need to download a copy of the song to play on their devices. The origin of streaming dates back to the 1990s in the United States, even though this technology has become popular in the United States and worldwide primarily in the past fifteen years. In particular, the first live stream occurred in June of 1993, when the band "Severe Tire Damage" streamed a concert over the Internet.⁷ Two years later, a baseball game was streamed by Progressive Networks (now known as RealNetworks).⁸ By the early 2000s, Windows MediaPlayer⁹ and Apple QuickTime allowed users to stream various entertainment media on their websites.¹⁰

To function, streaming requires three types of services: aggregators, storage services, and distributors.¹¹ This distinction is relevant because potential legal issues can arise under copyright law with any of these services during streaming, even though this Report focuses primarily on the distribution phase of streaming. Interestingly, streaming relied at first on peer-to-peer (P2P) technology, the same technology used by file sharing services, which became infamous because of pirated sites such as Napster and Pirate Bay.¹² This technology is based on compressing and transmitting

6. Dave Johnson, *The Beginner's Guide to Streaming, Including How It Works, the Pros and Cons, and More*, BUS. INSIDER (Jan. 11, 2021), www.businessinsider.com/what-is-streaming. In general, users of the streaming services can download the content to access it offline. For example, users of premium services of Spotify can download albums, playlists, and podcasts while the users of free version can download podcasts. In these instances, users get "tethered downloads," which will self-destruct if the Spotify app does not connect to a live account within a certain period of time. See *What Is a Tethered Download*, MINISTRY OF MUSICS (Oct. 20, 2018), <https://ministrymusics.com/blog/ufaq/what-is-a-tethered-download>.

7. See KEVIN SAVETZ ET AL., MBONE: MULTICASTING TOMORROW'S INTERNET, ch. 1 (1996), www.savetz.com/mbone. One of the first commercial streaming services, StarWorks, was released in 1992. StarWorks was sold as a software application that allowed for computers in a local network, primarily through ethernet, to stream videos that were stored on a local server computer. See also CBR Staff Writer, *Starlight Networks Software Turns a Computer into a Video Library*, TECHMONITOR (Oct. 26, 1992), https://techmonitor.ai/technology/starlight_networks_software_turns_a_computer_into_a_video_library.

8. *RealNetworks, Inc. History*, FUNDINGUNIVERSE, www.fundinguniverse.com/company-histories/realnetworks-inc-history.

9. *DirectShow: Core Media Technology in Windows XP Empowers You to Create Custom Audio/Video Processing Components*, MSDN MAG. (Oct. 23, 2019), <https://docs.microsoft.com/en-us/archive/msdn-magazine/2002/july/directshow-core-media-technology-in-windows-xp-empowers-you-to-create-custom-audio-video-processing-components>.

10. See Hansen Hsu, *Quicktime and the Rise of Multimedia*, COMPUT. HIST. MUSEUM (Mar. 30, 2018), <https://computerhistory.org/blog/quicktime-and-the-rise-of-multimedia>.

11. See, e.g., Thomas Lu, *Understanding Streaming and Copyright: A Comparison of United States and European Regimes*, 13 J. BUS. & TECH. L. 185, 187 (2018).

12. *Case Study: A&M Records, Inc. v. Napster, Inc.*, WASH. U. SCH. L. (Aug. 1, 2013), <https://onlinelaw.wustl.edu/blog/case-study-am-records-inc-v-napster-inc>. While streaming today relies on servers that store and cache media, P2P technology was still used in audio streaming by Spotify until 2014. See Romain Dillet, *Spotify Removes Peer-to-Peer Technology from Its Desktop Client*, TECHCRUNCH (Apr. 17, 2014), <https://techcrunch.com/2014/04/17/spotify-removes-peer-to-peer-technology-from-its-desktop-client>.

data—be these musical works, videos, or other data—and has improved throughout the years thanks to major increases in Internet bandwidth.¹³ Today, streaming use a codec (or several, as does Netflix¹⁴) to encode (compress) and decode (decompress), media files.¹⁵ Encoded files are transmitted in a “container,” or a file format such as MP4 or WMV, using a transport protocol.¹⁶ The codec on the user’s computer will decode the media file so that the user can listen or view the decompressed media without the need to download a copy.¹⁷ To be completed, this process requires: (i) aggregation technology to transform the data, such as videos or audios, into fragmented signals that can be stored in a server or cloud; (ii) storage technology to archive the data in the server and transmit it to the streaming endpoint (for on demand services); and (iii) distribution technology which can transform MP4 files or a live path server into several signals that can fit into the platform and the receiving smart devices.¹⁸ As elaborated below, however, not all streaming services require these three steps.

Notably, streaming services can function in two ways: on-demand/interactive services, in which users can start streaming/transmitting at their will, and live/noninteractive services, which are accessible for only a specific time decided by the distributor of the content, which include live streaming.¹⁹ Interactive streaming is generally used for on-demand music or TV²⁰ whereas non-interactive streaming is often used to stream real-time content, such as live concerts, conference, or games.²¹ Many popular services such as Spotify, Netflix, Disney+,

13. See SAVETZ, RANDALL & LEPAGE, *supra* note 7, ch. 1. In 1998, the average internet user owned a modem that transmit at a maximum of 28.8 Kbps (kilobits per second). At this bandwidth, it would take over twenty minutes to download a file that is 5 MB in size. Now, Internet users across the United States can consistently see 50 Mbps, with some Internet service providers boasting as much as 1,000 Mbps. That same 5 MB file could be downloaded in a second with 50 Mbps, and 1/20 of a second at 1,000 Mbps. Also on the user side, computers gained more processing power, which allowed for quicker decoding of the encoded files. *Id.*

14. Joe Svetlik, *Netflix Brings High-Efficiency AV1 Streams to TVs for the Very First Time*, WHAT HI-FI? (Nov. 12, 2021), www.whathifi.com/us/news/netflix-brings-high-efficiency-av1-streams-to-tvs-for-the-very-first-time.

15. Jan Ozer, *What Is a Codec?*, STREAMINGMEDIA, <https://www.streamingmedia.com/Articles/ReadArticle.aspx?ArticleID=74487>.

16. *Id.*

17. Technically speaking, users do not have the ability to download a copy beyond the parameters fixed by the software used by the streaming service. In particular, what separates a download from a stream is that the software used by the streaming service uses copylocks that prevent the storage of the stream and its conversion to an unauthorized permanent download. See *supra* note 6.

18. *Id.*

19. See, e.g., Mengna Liang, *Copyright Issues Related to Reproduction Rights Arising from Streaming*, 23 J. WORLD INTELL. PROP. 798, 801 (2020).

20. *Id.*

21. Non-interactive streaming is also widely used for terrestrial radio stations that offer internet streams. For a projection of 200 million “internet radio” listeners by 2020, see *Internet Radio vs. Terrestrial Radio*, EDGEWATER GOLD RADIO (Aug. 30, 2018), www.edgewatergoldradio.com/blank-1/2018/08/30/Internet-Radio-vs-Terrestrial-Radio (last visited June 10, 2022). People around the world listen to my LA station, KCRW.com. For a detailed explanation of the technical aspects of live streaming, see *What Is Live Streaming? How Live Streaming Works*, CLOUDFARE, www.cloudflare.com/learning/video/what-is-live-streaming (last visited June 10, 2022).

YouTube, SoundCloud, etc. provide on-demand streaming, while others provide both on demand and live streaming services, such as Hulu+ Live TV.²² The most significant difference between the two types of streaming is the initiation of the transmission.²³ With on-demand streaming, a central server stores the pre-recorded data and transmits them to the end-users upon request. For live streaming, on the other hand, the data is recorded and broadcasted simultaneously in real time to end-users. As explained in Part III.A, this difference is substantial regarding the royalties to be paid by the streaming services, as on-demand services have to pay mechanical royalties for music streaming in addition to performance royalties, while live streaming services only need to pay the latter.²⁴ Still, in both types of streaming, the streamed copies on end-users' devices are transient and disappear after the transmission, meaning that, unlike with illegal downloads, end-users can unlikely be held liable of copyright infringement, unless they broadcast the unauthorized contents to other users.²⁵

Streaming services, both interactive and noninteractive, can be categorized into two types of distribution platforms: DSPs and UGCs.²⁶ Notably, DSPs refers to platforms that “directly chooses and controls the. . . content it makes available on its service at any given time,”²⁷ such as Spotify or Netflix,²⁸ and do not allow users to post content or otherwise interact with the service. In the video world, these services are known as video-on-demand (VOD) technology and include “over the top” media services (OTT), which are offered directly to viewers via the Internet bypassing cables, broadcast, and satellite TVs. On the other hand, UGCs are social video platforms that allow users to stream videos and music as well as upload and share content.²⁹ UGCs services in the United States include YouTube, Tik Tok, and Facebook.

Finally, all interactive/noninteractive, DSPs/UGCs services adopt three primary business models: premium services, which typically

22. Rebecca Isaacs, *Best Live TV Streaming Services in 2022*, DECIDER (Jan. 28, 2022), <https://decider.com/article/best-live-tv-streaming-services>.

23. Laing, *supra* note 19, at 801.

24. *See infra* Part III.A.

25. *See infra* Part II.B.

26. The author has addressed the main business models of streaming in this Study with respect to Asia. The same models largely apply in the United States. *See* Irene Calboli & George Hwang, WIPO, *Report on the Online Music Market and Main Business Models in Asia: Overview and General Trends*, WIPO Doc. No. SCCR/41/7 (2021), www.wipo.int/edocs/mdocs/copyright/en/sccr_41/sccr_41_7.pdf. *See also* Alexander Lee, *With User-Generated Content on the Rise, Platforms Are Emerging to Support this New Type of Creator*, DIGIDAY (Sept. 17, 2021), <https://digiday.com/marketing/with-user-generated-content-on-the-rise-platforms-are-emerging-to-support-this-new-type-of-creator>; Shivani Patel, *Everything You Need to Know About Digital Service Providers (DSPs)*, MEDIUM (June 23, 2017) https://medium.com/@shivani_68755/everything-you-need-to-know-about-digital-service-providers-dsps-9af7691b6baf.

27. Annemarie Bridy, *The Price of Closing the “Value Gap”: How the Music Industry Hacked EU Copyright Reform*, 22 VAND. J. ENT. & TECH. L. 323, 327 (2020).

28. *Id.*

29. *Id.*

require monthly or yearly subscription; freemium services, which allow users to free access to content with advertisements; and completely free services. Notably, many popular streaming platforms use both premium and freemium versions as part of their services. For example, platforms like Spotify, Soundcloud, and Pandora offer freemiums, which allows users to listen to music with advertisements and restrictions governing playback for free.³⁰ Similarly, YouTube offers a freemium service for most of its content.³¹ In several instances, these services use freemiums to drive users towards their premium versions.³² On the other hand, on-demand TV and movie streaming services like Netflix, Hulu, Amazon Prime Video, and Disney+ rely exclusively on premium subscriptions.³³ Finally, free services are generally services offering live streaming, like many internet radio stations.

Overall, data indicated records number of subscriptions in the United States today,³⁴ and subscriptions are projected to continue to grow in the future.³⁵ In particular, according to the International Federation of the Phonographic Industry (IFPI) 2021 Global Music Report, the United States ranked first globally for streaming activities in the world last year, with a year-over-year growth rate of +12.9%.³⁶ Not surprisingly, the large number of subscriptions and access to streaming also translates in high revenue for the industry. In 2020 alone, streaming was valued at USD 5,753.80 million in the United States, with streaming accounting for 71.8% of music revenue

30. For example, Pandora free only allows a certain number of skips. Tristan Rose, *How Does Pandora Make Money (Business and Revenue Model)*, ENTREPRENEUR360 (Aug. 14, 2021), <https://entrepreneur-360.com/how-does-pandora-make-money-20122>. Spotify free contains advertisements and only allows shuffle playback of albums and playlists. James Archer & Henry Casey, *Spotify Free vs. Premium: Should You Pay to Play?*, TOM'S GUIDE (May 28, 2021), www.tomsguide.com/face-off/spotify-free-vs-premium.

31. *YouTube and YouTube Music Ad-Free, Offline, and in the Background*, YOUTUBE, www.youtube.com/premium.

32. Matti Mantymaki, *What Drives Subscribing to Premium in Freemium Services? A Consumer Value-Based View of Differences Between Upgrading to and Staying with Premium*, 30 INFO. SYS. J. 295 (2019), <https://doi.org/10.1111/isj.12262>; Lisa Marie Segarra, *Spotify Found a Surprising Way to Convert Free Users to Paying Customers: Even More Freebies*, FORTUNE (Oct. 28, 2019), <https://fortune.com/2019/10/28/spotify-premium-users-increase>.

33. Bennett O'Brien, *Comparing the Best Video Streaming Services for Your Budget*, MONEYGEEK (Feb. 16, 2022), www.moneygeek.com/financial-planning/resources/best-streaming-services-on-a-budget.

34. *IFPI Issues Global Music Report 2021*, INT'L FED. PHONOGRAPHIC INDUS. (Mar. 23, 2021), www.ifpi.org/ifpi-issues-annual-global-music-report-2021. In 2021, subscription video-on-demand revenue in the United States was over USD 25 billion. Julia Stoll, *SVOD Revenue in the U.S. 2011–2021*, STATISTA (Feb. 8, 2022), <https://www.statista.com/statistics/483100/svod-revenue-usa/>.

35. Julia Stoll, *Number of SVOD Subscriptions in the U.S. 2021–2026*, STATISTA (Oct. 21, 2021), www.statista.com/statistics/482973/number-svod-households-usa (with subscription).

36. IFPI, REPORTS & RESOURCES | GLOBAL MUSIC REPORT, IFPI (2020), www.ifpi.org/resources.

in the country.³⁷ Additionally, in 2021, revenue for video streaming was around USD 32,082 million. This averages roughly USD 211.04 per user.³⁸ As elaborated in Part III.A, the biggest part of these revenues is still captured, however, by the streaming services highlighting the “value gap” in revenue sharing between the platforms and copyright holders.³⁹ Moreover, as reported in Part III.B, the growth of streaming has also led to increasing illegal streaming in the United States.⁴⁰

B. *Copyright Law and Streaming: Challenges and General Concepts*

Under section 106 of the U.S. Copyright Act, copyright holders have the exclusive rights to: (i) reproduce; (ii) prepare derivative works; (iii) distribute copies; (iv) perform the copyrighted work publicly; and (v) display the copyrighted work publicly.⁴¹ Among these rights, “public performance” and “public display” are the most important for the discussion here, with “publicly” being defined in the statute as: “(1) to perform or a display it at a place open to the public or at any place where a substantial number of persons outside of a normal circle of a family and its social acquaintances is gathered” and “(2) to transmit or otherwise communicate a performance or display of the work to a place specified by clause (1) or to the public, by means of any device or process, whether the members of the public capable of receiving the performance or display receive it in the same place or in separate places and at the same time or at different times.”⁴²

Depending on the specific phase and act of streaming, the unauthorized streaming of copyrighted material may infringe various rights, notably, the reproduction, distribution, and public performance rights. However, since its inception, streaming created various challenges for the copyright system and copyright holders.⁴³ In particular, both on-demand/interactive and live/noninteractive streaming only create transient copies of the transmitted content on end-users’ devices. As mentioned, this aspect of streaming is considerably different than P2P file-sharing as with P2P sharing both the uploading and downloading of the shared files create permanent copies of a work, which can be considered copyright infringement. In other words, streaming does not lead users to reproduce a copyrighted work, even

37. *Id.*

38. *Video Streaming (SVOD)—United States*, STATISTA, www.statista.com/outlook/dmo/digital-media/video-on-demand/video-streaming-svod/united-states.

39. *See infra* Part III.A.

40. *See infra* Part III.B

41. 17 U.S.C. § 106.

42. *Id.* § 101.

43. *See, e.g., Promoting Investment and Protecting Commerce Online: The ART Act, the NET Act and Illegal Streaming: Hearing Before the Subcomm. on Intell. Prop., Competition, & the Internet of the H. Comm. on the Judiciary*, 112th Cong. 10 (2011) (statement of Maria A. Pallante, Register, U.S. Copyright Office) [hereinafter Statement of Maria Pallante].

when users watch or listen to the work from their devices.⁴⁴ Instead, only on-demand services create a copy of the work when they upload the work—be it music or audiovisual work—on their servers/clouds to later be transmitted on demand to the service’s users.⁴⁵ On the other hand, both on-demand and live-streaming involves broadcasting and distributing the works at issue to the public, including possibly large number of end-users on-demand or live.⁴⁶

In particular, based on the current U.S. provision and judicial interpretation, the following unauthorized acts could constitute copyright infringement: (i) uploading a copyrighted work on a storage server or a cloud of a streaming service; (ii) managing an illegal streaming service and streaming copyrighted works; (iii) and providing access to the unauthorized streaming of copyrighted works for end-users.⁴⁷ To the contrary, accessing and watching illegal streaming by individual users does not constitute copyright infringement due to the fact that users do not reproduce nor distribute the content, but only watch it through a transient copy.

In other words, any time a copy is created and kept in permanent or quasi-permanent form, one must assume there is a reproduction. Examples in this respect can be: a UGC user uploading content to a server/cloud, an interactive music service uploading tracks for which it does not have authorization, a “live” non-interactive webcaster who uploads a prerecorded show with music, a purely non-interactive stream which nonetheless retains an archival copy of its stream. Uploading of copyrighted works on streaming services’ servers, even if done unknowingly, can thus amount to infringing on copyright holders’ reproduction rights.⁴⁸ Unlike the transient copy that is transmitted to the receiving end-users, the server or cloud storing content to be streamed on demand hosts permanent copies of that content. Hence, the uploading of unauthorized copyright content on the server/cloud represents an infringement of copyright holders’ reproduction right. Again, noninteractive services are not liable for this type of copyright infringement, even when they stream unauthorized content. This is because their streams are considered to be “digital audio transmission.”⁴⁹

44. See *supra* Part II.A.

45. *Id.*

46. See Statement of Maria Pallante, *supra* note 43, at 19 (highlighting that, when a distribution platform hosts “an unauthorized stream [this stream] falls under the distribution portion of the Copyright Act).

47. 17 USC §§ 106, 101.

48. It is a long-established principle in U.S. copyright law that intention to infringe is not an essential element to find liability for direct copyright infringement. See *Buck v. Jewell-Lasalle Realty Co.*, 283 U.S. 191, 198 (1931).

49. Anna S. Huffman, *What the Music Modernization Act Missed, and Why Taylor Swift Has the Answer: Payments in Streaming Companies’ Stock Should Be Dispersed Among all the Artists at the Label*, 45 J. CORP. L. 537, 540 (2020).

In addition, managing a streaming website and streaming content without the authorization of copyright holders may constitute a violation of the distribution⁵⁰ and public performance rights.⁵¹ For example, if one “stream[s] a particular recording of a song from [an] interactive music streaming service of choice, the service must have first obtained permission to disseminate both the underlying musical work and the specific sound recording” from the copyright holder.⁵² The same applies to the unauthorized streaming of videos or other media. In particular, illegal streaming performs the copyrighted work publicly, under the meaning of the U.S. Copyright Act,⁵³ since the notion of transmission “by means of any device or process” refers to “members of the public [being] capable of receiving the performance or display. . . in the same place or in separate places and at the same time or at different times,”⁵⁴ which is the result of streaming. Notably, the U.S. Copyright Act defines “digital transmission” as “a transmission in whole or in part in a digital or other non-analog format,” while “public performance” refers to either a performance “at a place open to the public. . .” or transmitting or communicating to the public.⁵⁵ As noted by the former Register of Copyrights, “Congress intended to give the statute sufficient flexibility to accommodate changes in technology,” meaning that “the definition of ‘transmit’. . . is broad enough to include all conceivable forms and combinations of wired or wireless communications media, including but by no means limited to radio and television broadcasting as we know them.”⁵⁶

Providing unauthorized access to copyrighted works, including transient reproductions, can also be a violation of public performance and broadcasting rights. This type of infringement is particularly relevant for UGCs, as elaborated in Part III.C,⁵⁷ and other intermediaries, including Internet service providers (ISPs), libraries, universities, and any establishment that allows users to access online content from their servers. For example, universities are “considered. . . Online Service Provider[s] under the Digital Millennium Copyright Act (DMCA) and [are] therefore responsible for ensuring that illegal peer-to-peer file

50. 17 U.S.C. § 106. *See also* Johnson v. Copyright Royalty Bd., 969 F.3d 363, 368 (D.C. Cir. 2020).

51. 17 U.S.C. § 106. *See also* WPIX, Inc. v. ivi, Inc., 765 F. Supp. 2d 594, 601 (S.D.N.Y. 2011), *aff’d*, 691 F.3d 275 (2d Cir. 2012).

52. Johnson, 969 F.3d at 367 (“Specifically, such streaming services must acquire licenses to make and distribute copies of the sound recording and the musical work.”).

53. 17 U.S.C. § 101.

54. *Id.*

55. *Id.*

56. H.R. REP. NO. 94-1476, at 64, *quoted in* U.S. COPYRIGHT OFF., THE MAKING AVAILABLE RIGHT IN THE UNITED STATES: A REPORT OF THE REGISTER OF COPYRIGHTS 38 (2016), www.copyright.gov/docs/making_available/making-available-right.pdf.

57. *See infra* Part III.C. *See also* Cong. Res. Serv., *Copyright Licensing in Music Distribution, Reproduction, and Public Performance, August 30, 2006–September 22, 2015*, www.everycrsreport.com/reports/RL33631.html.

sharing that uses university resources. . . are stopped.”⁵⁸ However, UGCs, ISPs and other intermediaries generally fall under the DMCA’s safe harbors provisions and are shielded from copyright liability, notably monetary relief, so long as they promptly remove the illegal content.⁵⁹ Certainly, one type of streaming, P2P streaming, violates copyright holders’ broadcasting rights, because viewers are also broadcasters. As a result, many institutions, such as colleges, block campus network access to peer-to-peer file sharing.⁶⁰

On the other hand, obtaining access to copyrighted works from an illicit streaming website is not directly considered copyright infringement in most circumstances because the act of getting access to content from an illicit streaming website “does not technically violate these rights because. . . watching a stream does not constitute public performance or making a copy.”⁶¹ Likewise, watching a stream on one’s device does not constitute public performance.⁶²

Civil remedies are available against acts of copyright infringement committed via illegal streaming. These remedies include damages and injunctions. In particular, monetary damages are usually awarded based on: (i) actual damages,⁶³ (ii) profits, and (iii) statutory damages.⁶⁴ In 1999, the Digital Theft Deterrence and Copyright Damages Improvement Act of 1999 increased the minimum damages for statutory damages from USD 500 to USD 750 and the maximum from USD 20,000 to USD 30,000. The maximum amount provided for willful infringement was also increased from USD 100,000 to USD 150,000.⁶⁵

Injunctive relief is also available for copyright infringement. In particular, injunctions can be issued by “any court having jurisdiction of a civil action arising under this title.”⁶⁶ In general, injunctions can be temporary or final in nature as deemed “reasonable to prevent or restrain infringement of a copyright [and may] be served anywhere in the United States on the person enjoined [and] operative throughout the United States.”⁶⁷ Copyright registration with the U.S. Copyright

58. *Avoiding Illegal Peer-to-Peer File Sharing*, NW. U. INFO. TECH. (2020), www.it.northwestern.edu/security/illegaldownloading/index.html; *Peer-to-peer File Sharing Policy*, U. NEVADA, RENO (Apr. 27, 2021), <https://unr.teamdynamix.com/TDCClient/2684/Portal/KB/ArticleDet?ID=131933>.

59. *See infra* Part III.C.

60. Peer-to-peer streaming constitute copyright infringement because it violates 17 U.S.C. § 106 by making copies of the copyrighted work and performing the copyrighted work publicly.

61. *Id.*

62. Joe Supan, *When Is Streaming Illegal? What You Need to Know About Pirated Content*, ALLCONNECT (May 18, 2021), www.allconnect.com/blog/is-streaming-illegal (quoting Professor Jim Gibson).

63. 17 U.S.C. § 504(b).

64. *Id.* § 504(c).

65. *Id.*

66. *Id.* § 502.

67. *Id.*

Office is necessary to bring an action to court and collect statutory damages and attorneys' fees for findings of copyright infringement.⁶⁸ Also, as elaborated in Part III.A, the DMCA provides for specific injunctions for online service providers, including streaming services.⁶⁹

Finally, streaming tested another aspect of copyright law: the criminal liability of large-scale illegal streaming services. Despite complaints of the industry, until the adoption of the Protecting Lawful Streaming Act (PLSA) in 2020,⁷⁰ large scale and willful illegal streaming (violation of public performance right) was categorized as a misdemeanor and punished with a fine and up to one year in prison, while the act of uploading or downloading illegal content was considered as a felony punishable by up to five years imprisonment for a first offense, and ten years and/or a fine of up to USD 250,000 for a subsequent offense.⁷¹ As analyzed in Part III.B, the PLSA closed what several commentators defined as “the streaming loophole” and made illegal streaming also a felony with the related implications for criminal damages and imprisonment.⁷²

II. DIFFERENT TYPES OF STREAMING SERVICES AND RELATED LEGAL FRAMEWORK

A. *Legal Streaming Services: Regulation and Open Questions*

As mentioned above, providers of legal streaming services can be categorized into closed and open platforms, or DSPs and UGCs. Both types of services, however, need to stream content—be this music, videos, or other media—with the consent of copyright holders for the services to be considered legal streaming. Generally, DSPs need to seek this consent directly through licensing agreements with the various holders of the rights related to works to be streamed.⁷³ UGCs, on the other hand, rely on users of their platforms, both professional and amateur artists, to seek such consent because users upload

68. *Fourth Estate Pub. Benefit Corp. v. Wall-Street.com, LLC*, 139 S. Ct. 881 (2019) (deciding unanimously that either a registration from the Copyright Office, or having been refused a registration, is needed in order to sue for copyright infringement in the United States).

69. *See infra* Part III.C.

70. Protecting Lawful Streaming Act of 2020, 18 U.S.C. § 2319C.

71. *See supra* Part II.A.

72. Devlin Hartline & Matthew Barblan, *Protecting Authors and Artists by Closing the Streaming Loophole*, GEO. MASON U. SCH. L. CTR. PROTECTION INTELL. PROP. 5 (Oct. 2015), <https://sls.gmu.edu/cpip/wp-content/uploads/sites/31/2014/04/Hartline-Barblan-Protecting-Authors-and-Artists-by-Closing-the-Streaming-Loophole.pdf> (noting that “the high legal thresholds for obtaining criminal convictions with the fact that federal prosecutors are generally disinclined to spend their time on misdemeanors” made it so “that very few people [were] ever charged with criminally violating the public performance rights”).

73. *Copyright Licensing*, JUSTIA, www.justia.com/intellectual-property/copyright/copyright-licensing (last modified Oct. 2021).

content independently.⁷⁴ Still, UGCs remain responsible for removing infringing content from their platforms upon notice by the copyright owners and several of them, such as YouTube, have filtering systems to detect infringing content.⁷⁵ As I address in detail in Part III.C, these services are shielded from copyright liability under the safe harbor provisions in the DMCA based on the DMCA's system of notice and take down of illegal content.⁷⁶

In particular, the music streaming industry includes artists, record companies, and publishers.⁷⁷ Traditionally, the link between record companies and music publishers is the mechanical right as the record companies used (and still use for producing vinyl and CDs) the musical compositions to produce copies of the recording. With streaming, however, only one reproduction of the works is needed when the recording is uploaded on the server or cloud of the streaming service for users to stream on-demand. Moreover, as mentioned, only on-demand/interactive streaming services require the upload of this copy. Still, all streaming services—interactive and non-interactive services—need to seek a license for the music they stream and pay royalties to the copyright holders.⁷⁸ Based on these licenses, streaming services need to pay mechanical royalties for storing copies of the works and performance royalties from streaming the works,⁷⁹ even though only online on-demand/interactive streaming services need to pay both mechanical and public performance royalties as only these services again upload the recording onto their servers.⁸⁰ To the contrary, non-interactive streaming services are required to pay only public performance royalties.

In 2021, the Music Modernization Act (MMA)⁸¹ entered into force in the United States and revised the practices for streaming licensing with respect to mechanical royalties. Until the adoption of the MMA, mechanical royalties were regulated under the compulsory mechanical license provision on a song-by-song basis.⁸² The purpose of the

74. *Id.*

75. See *infra* Part III.C.

76. 17 U.S.C. § 512.

77. Susan Butler, WIPO, *Inside the Global Digital Music Market*, WIPO Doc. SCCR/41/2 (June 1, 2021), www.wipo.int/edocs/mdocs/copyright/en/sccr_41/sccr_41_2.pdf.

78. *U.S. Music Streaming Royalties Explained*, MANATT (2016), www.manatt.com/Manatt/media/Media/PDF/US-Streaming-Royalties-Explained.pdf.

79. *Id.*

80. Huffman, *supra* note 49, at 541.

81. U.S. Copyright Office (2021); Orrin G. Hatch-Bob Goodlatte Music Modernization Act, Pub. L. 115-264, 132 Stat. 3676 (2018).

82. See Shreya M. Santhanam, *Going Beyond the Music Modernization Act: Creation in the Digital Era*, 35 BERKELEY TECH. L.J. 1093, 1095 (2022) (reconstructing the history of mechanical license in the United States). The 1909 Copyright Act first introduced mechanical compulsory licenses, which were maintained in the 1976 Copyright Act. Under this system, third parties could send copyright holders a notice of intent (NOI), which informed copyright holders of the third parties' intention to record or distribute the copyrighted composition. See also Howard B. Abrams, *Copyright's First Compulsory License*, 26 SANTA CLARA HIGH TECH. L.J. 215 (2009). In 1995, Congress extended the compulsory licenses to digital phonorecord deliveries with the Digital Performance Rights in Sound Recording Act. See Santhanam, *supra*, at 1095.

MMA was to simplify licensing and royalty payments for streaming and facilitate royalty payments to artists by streaming services following years of complaints that artists were not receiving payments when their works were streamed.⁸³ In particular, the MMA created a blanket licensing system, which is administered by a non-profit body, the Mechanical Licensing Collective (MLC).⁸⁴ Under the previous system, streaming services had to license individual songs by notifying the individual copyright holders and then paying the applicable royalties. This system was highly complex while, under the system created by the MMA, the blanket license covers all works that are available for compulsory licensing. On the other hand, also under the MMA, parties remain free to create voluntary licensing deals for songs instead of blanket licenses.⁸⁵ Overall, the MMA's objective is to decrease the costs of transactions for streaming services while increasing at the same time the royalty payments to copyright holders.⁸⁶

To oversee the new system, the MMA created the Mechanical Licensing Collective (MLC), which is funded by "by digital music providers through voluntary contributions and an administrative assessment set by the Copyright Royalty Judges."⁸⁷ The MLC collects and distributes royalties and is also in charge of maintaining a public database that identifies sound recordings to attribute ownership of the works.⁸⁸ In addition, the MMA created a Copyright Royalty Board in charge of overseeing copyright royalties regarding digital musical.⁸⁹ In particular, the current rates for mechanical rights royalty payments average USD 0.0005 per stream.⁹⁰ Streaming services, however, do not pay the royalties provided under the MMA directly to individual

83. Streaming services have been criticized for failing to pay artists accurate royalties despite their large profits. For example, Spotify settled lawsuits alleging that Spotify failed to provide proper notice of intent and payment to copyright holders. See *Bluewater Music Serv. Corp. v. Spotify U.S., Inc.*, 2018 U.S. Dist. LEXIS 173064 (W.D. Tenn. Sept. 29, 2018) (denying Spotify's motion to dismiss for lack of standing and failure to state a claim). See also Eriq Gardner, *Spotify Settles Copyright Lawsuits Brought by Songwriters*, HOLLYWOOD REPORTER (June 27, 2019), www.hollywoodreporter.com/thr-esq/spotify-settles-copyright-lawsuits-brought-bysongwriters-1221403.

84. Music Modernization Act § 102, 132 Stat. at 3677.

85. The blanket system created by the MMA is a default system, from which parties can deviate. Several streaming platforms are hosting music through private agreements with record companies and copyright holders. The MMA amends the previous notice system, however, and a platform can simply pay the compulsory fee with the MLC if they did not send the necessary notice, instead of being liable for copyright infringement under the previous system. See Music Modernization Act Implementing Regulations for the Blanket License for Digital Uses and Mechanical Licensing Collective, 84 Fed. Reg. 49,966 (Sept. 24, 2019).

86. See Jacob Victor, *Reconceptualizing Compulsory Copyright Licenses*, 72 STAN. L. REV. 915, 988 (2020).

87. See *Music Modernization Frequently Asked Questions*, U.S. COPYRIGHT OFF., www.copyright.gov/music-modernization/faq.html. See also 17 U.S.C. § 115.

88. *Music Modernization Frequently Asked Questions*, *supra* note 87.

89. *Id.*

90. *Mechanical Royalties Guide: 2021*, ROYALTY EXCH. www.royaltyexchange.com/blog/mechanical-royalties.

artists but to a publishing administrator.⁹¹ As of January 1, 2021, music copyright holders are required to register their works with the MLC in order to receive licensing fees.⁹² Moreover, the MLC does not distribute royalties resulting from private agreements and royalties for those uses will be paid according to the parties' contract.⁹³ The MMA also provides that, starting in 2023, any unclaimed royalties can be paid to copyright holders and songwriters of matched works according to each work's market share.⁹⁴

On the other hand, while facilitating tracking, matching, and payments for authors, the MMA does not address works created by nonprofessional artists that contain copyrighted music—for example mashups or videos created by users including clips of copyrighted music.⁹⁵ In several cases, the use of copyrighted materials may require copyright holder's authorization. Moreover, even though some of these creations may fall under the statutory provision of copyright fair use, the streaming services may disagree for fear of liability under the DMCA.⁹⁶

Performance royalties, on the other hand, do not fall under the new MMA system and are collected and paid by the Performing Rights Organizations (PROs), such as the American Society of Composers, Authors, and Publisher (ASCAP)⁹⁷ or Broadcasting Music Inc. (BMI).⁹⁸ Performance royalties, as mentioned, should be paid by both interactive and non-interactive streaming services. Traditionally, performance royalties are split between songwriters and their publishers. For example, Spotify or Apple Music may send performance royalties to ASCAP, which would in turn send half of these royalties to the song writer and the other half to the publisher. Then, the publisher would return the royalty to the writer as per the publishing agreement. Still, streaming services must negotiate performance licenses and royalties with the copyright holders or the PROs separately than mechanical royalties.⁹⁹

Like music streaming services, video streaming services also need to secure licenses from the copyright owners of the audiovisual work they

91. *Music Modernization Frequently Asked Questions*, *supra* note 87.

92. *Id.*

93. *Id.*

94. *Id.*

95. Santhaman, *supra* note 82, at 1099–100.

96. *See id.* at 1100–01. To address this issue, at least in part, YouTube offers to users a bank of songs free to use without seeking a copyright license. YouTube also maintains a separate library with licensing policies for those songs, yet creators need to obtain a license. *See also, e.g.*, Peter S. Menell, *Adapting Copyright for the Mashup Generation*, 164 U. PA. L. REV. 441 (2016).

97. *ASCAP Licensing Frequently Asked Questions*, AM. SOC'Y COMPOSERS, AUTHORS & PUBL. [ASCAP], www.ascap.com/help/ascap-licensing.

98. *BMI and Performing Rights*, BROADCASTING MUSIC INC., www.bmi.com/licensing/entry/business_using_bmi_and_performing_rights.

99. *See Huffman, supra* note 49, at 541

transmit. As noted by commentators, “even before the adoption of . . . the WIPO Copyright Treaty, courts in the U.S. did not hesitate to extend the scope of the public performance right to cover video on demand.”¹⁰⁰ Today, it is clear that video streaming services should seek a license to stream a copyrighted video, lest the act of streaming the video would constitute infringement of the public performance and public display rights. This position has been confirmed in a leading case decided by the Supreme Court in the past decade, *American Broadcasting Companies v. Aereo*.¹⁰¹

As mentioned, different than DSPs, UGCs do not need to seek copyright holders’ consent for the works streamed from the services because the content is uploaded directly by their users. In general, users upload videos and sound recordings of their original visual works and songs. When they use YouTube or another UGC platform, these authors receive “micro-sync royalties,” which refers to “the synchronization of music with moving images in smaller individual instances with a huge number of uses.”¹⁰² The streaming of these videos can generate both mechanical and performance royalties. For instance, “a monetized YouTube video will generate performance and mechanical royalties.”¹⁰³ PROs like ASCAP and BMI track, collect, and distribute performance royalties also from UGCs, while mechanical royalties are overseen by the MLC. As elaborated in Part III.C, even though UGCs do not need to seek copyright holders’ consent, they have nonetheless the duty to respond to notice of copyright holders regarding possible infringement on their sites, promptly take down the infringing content, and notify the user who has the right to appeal the take down decision.¹⁰⁴

Despite the large increase in streaming services and revenues, one of the hot debates that remains in the United States, like in other countries, is “value gap” in the chain of income earned through streaming.¹⁰⁵ As mentioned, one of the objectives of the MMA was to address this concern regarding mechanical royalties. In 2019, the “Recording Industry Association of America (RIAA) submitted an annual report. . . stating that streaming generates 75 percent of the music industry’s revenue due to generational change and the found

100. Makeen Fouad Makeen, *Video Streaming and the Communication to the Public Right in the United States and European Union*, in RESEARCH HANDBOOK ON INTELLECTUAL PROPERTY AND DIGITAL TECHNOLOGY 246, 256 (Tania Aplin ed., 2020) (referring to *On Command Video Corp. v. Columbia Pictures Indus.*, 777 F. Supp. 787 (N.D. Cal. 1991)).

101. *Am. Broadcasting Cos. v. Aereo*, 134 S. Ct. 2498 (2014). The Ninth Circuit reached a similar decision in *Fox Television Stations, Inc. v. AereoKiller et FilmOn*, 851 F.3d 1002 (9th Cir. 2017).

102. Seth Lorinczi, *What Are Micro-Sync Royalties?*, SONGTRUST, <https://blog.songtrust.com/what-are-micro-sync-royalties> (last updated Jan. 25, 2022).

103. *Id.*

104. See *infra* Part III.C.

105. See CASTLE & FIEJÓO, *supra* note 1. See also *US Music Biz Urges Government to Back EU Proposals to Squeeze YouTube “Value Gap,”* MUSIC BUS. WORLDWIDE (Nov. 3, 2016), www.musicbusinessworldwide.com/us-music-biz-urges-government-to-back-eu-proposals-to-squeeze-youtube-value-gap.

popularity in music streaming applications.”¹⁰⁶ It was noted that, “[on] average, Spotify pays \$0.00437 per average play, meaning that an artist will need roughly 336,842 total plays to earn \$1,472. While in comparison, Spotify has an annual revenue of \$4.99 billion through its paid subscribers.”¹⁰⁷ A similar debate has taken place with regard to movie streaming. For example, Disney and other studios have been accused of keeping the lion share of streaming revenues for older shows shown on its channel by calling them “home videos.”¹⁰⁸ Artists have also complained about the low returns they receive when their movies are streamed. Overall, it does not seem that the “value gap” concern has been addressed in the United States to date.¹⁰⁹

Finally, legal streaming services are not required to contribute to national audiovisual production or to include a percentage of national or regional audiovisual works in their catalogue in the United States. To date, a national agency that collects and conserves these works is the National Audiovisual Conservation Center (NAVCC) of the Library of Congress. The NAVCC is “the first centralized facility in America especially planned and designed for the acquisition, cataloging, storage, and preservation of the nation’s collection of moving images and recorded sounds.”¹¹⁰ However, even though the NAVCC includes “more than 1 million film and video items and 3 million sound recordings,”¹¹¹ it does not require mandatory contributions from streaming services.

B. *Illegal Streaming: Recent Developments and Increased Criminal Liability*

Illegal streaming services, or “rogue” websites that stream copyrighted works without the consent of the copyright holders,¹¹² are a common occurrence in the United States. In fact, recent data shows that the United States was the country with the highest number of

106. Jillian J. Dahrooge, *The Real Slim Shady: How Spotify and Other Music Streaming Services Are Taking Advantage of the Loopholes Within the Music Modernization Act*, 21 J. HIGH TECH. L. 199, 200 (2021). See also Mariana L. Orban, *Songwriters v. Spotify: Is Spotify the Problem or a Symptom of the Problem?*, 48 PEPP. L. REV. 785 (2021).

107. Dahrooge, *supra* note 106, at 212–13. The profit for artists varies. For example, for Spotify the profit division is as follows: roughly 58.5 cents per stream go sound recording owners, 29.38 cents to the streaming service (Spotify), and 6 cents to mechanical royalties and 6.12 cents to the selected PRO.

108. Gene Maddaus, *Disney Keeps 80% of Streaming Revenue by Calling It “Home Video,”* VARIETY (Feb. 23, 2021), <https://variety.com/2021/tv/news/disney-bill-nye-streaming-1234910834>; Matthew Belloni, *Four Studios Targeted in Class-Action Suit over Home Video Royalties (Exclusive)*, HOLLYWOOD REPORTER (Jan. 16, 2013), www.hollywoodreporter.com/business/business-news/four-studios-targeted-class-action-413038.

109. *But see* Bridy, *supra* note 27, at 323.

110. *Audio Visual Conservation*, LIBR. CONG., <https://www.loc.gov/programs/audio-visual-conservation/about-this-program/mission/>.

111. *Id.*

112. See, e.g., Joao P. Quintais, *Global Online Piracy Study Legal Background Report*, U. AMSTERDAM INST. INFO. L. (July 2018), www.ivir.nl/publicaties/download/Global-Online-Piracy-Study-Legal-Background-Report.pdf.

accesses to illegal media websites in 2021.¹¹³ Still, illegal streaming has been an issue of concern for the entertainment industry since streaming became a relevant mean of distribution for entertainment media over a decade ago. Not surprisingly, based on recent surveys, the global surge in access to streaming services during the COVID-19 pandemic led to an increase in illegal streaming.¹¹⁴ Until recently, however, the legal treatment of illegal streaming services in the United States was highly criticized for being too bland and limiting the penalties for criminal liability for those engaged in acts of illegal streaming as compared to other type of copyright infringement, such as P2P.

In particular, until the end of 2021, U.S. law categorized illegal streaming, notably the infringement of public performance right, as a misdemeanor carrying only a fine and a penalty of up to one year of imprisonment.¹¹⁵ By comparison, other acts of copyright infringement, such as the infringement of the reproduction and distribution rights, were treated as a felony.¹¹⁶ Because of the concerns surrounding the growth of illegal streaming, in 2011, an attempt was made to introduce harsher penalties. This attempt was not successful, however, and the Stop Online Piracy Act (SOPA), which “targeted websites dedicated to infringing activities,” was ultimately not approved when it was presented in the House of Representatives because “numerous co-sponsors of the bills withdrew their support” shortly before the vote.¹¹⁷

It was only in December 2020 that the U.S. Congress passed the Protecting Legal Streaming Act, a bipartisan legislation included in the COVID-19 stimulus bill, which made illegal streaming a felony when the streaming would be conducted willfully and for financial gain.¹¹⁸ Supporters of the PLSA applauded the adoption of the law, which in their view closed the “unintended” gap in copyright law that allowed large-scale commercial enterprises to avoid serious consequences for their illegal streaming of copyrighted work.¹¹⁹ In

113. *Media Piracy in the U.S. and Worldwide*, STATISTA 2 (2020), www.statista.com/study/42923/media-piracy-worldwide (with subscription). See also Julia Stoll, *Global Number of Visits to Media Piracy Sites by Country 2020*, STATISTA (2021), www.statista.com/statistics/786046/media-piracy-site-visits-by-country (with subscription).

114. Damjan Jugovic Spajic, *Piracy Is Back: Piracy Statistics for 2022*, DATAPROT, <https://dataprot.net/statistics/piracy-statistics> (last updated Mar. 4, 2022).

115. See Hartline & Barblan, *supra* note 72, at 6 n.3.

116. See 17 U.S.C. § 506(a)(1)(A) (defining criminal infringement of copyright); 18 U.S.C. § 2319(b)(1)–(2) (describing punishments resulting from criminal infringement under § 506(a)); 18 U.S.C. § 3571(b)(3) (defining fines of criminal offenses); 18 U.S.C. § 3559(a)(3) (defining sentencing classifications of criminal offenses).

117. Stop Online Piracy Act, H.R. 3261, 112th Cong. (2011).

118. Protecting Lawful Streaming Act of 2020, 18 U.S.C. § 2319C (amending 18 U.S.C. § 2319 to prohibit illicit digital transmission services). See also *Protecting Lawful Streaming Act of 2020*, U.S. PATENT & TRADEMARK OFF. (2021), www.uspto.gov/ip-policy/enforcement-policy/protecting-lawful-streaming-act-2020.

119. Kevin Madigan, *Protecting Lawful Streaming Act Signed into Law: What You Need to Know*, COPYRIGHT ALLIANCE (Jan. 12, 2021), <https://copyrightalliance.org/protecting-lawful-streaming-act-signed>.

particular, the industry concern was that operators of large-scale illegal streaming were able to avoid serious consequences because the misdemeanor penalties were “not sufficient to deter large-scale infringers.”¹²⁰ Supporters of harsher penalties also noted that pre-PLSA regime disincentivized prosecutors from bringing criminal cases for the violation of the public performance rights against illegal streaming services due to the high legal threshold to obtain legal convictions in criminal cases, the low penalties carried by these offences, and the limited resources of the Department of Justice.¹²¹

In particular, the PLSA, which entered into force in January 2021, targets illegal “digital transmission services,” which are defined as “services that have the primary purpose of publicly performing works by digital transmission.”¹²² In particular, the PLSA states that “it shall be unlawful to wilfully, and for purposes of commercial advantage or private financial gain, offer or provide to the public” streaming services in the following cases, namely when the transmission service: “(1) is primarily designed or provided for the purpose of publicly performing [copyrighted] works. . . by means of a digital transmission”; or “(2) has no commercially significant purpose or use other than to publicly perform [copyrighted] works. . . by means of a digital transmission”; or “(3) is intentionally marketed by or at the direction of that person to promote its use in publicly performing [copyrighted] works. . . by means of a digital transmission,” and these acts are carried on “without the authority of the copyright owner or the law.”¹²³

Under the new law, a person who willfully conducts any of these acts will now be charged with a felony and face a fine and up to three years imprisonment.¹²⁴ The penalty increases to five years if the offense is committed in connection with one or more “works being prepared for commercial public performance,” and the offending party “knew or should have known that the work was being prepared for commercial public performance.”¹²⁵ In particular, section 2(a) of the PLSA defines “work being prepared for commercial public performance” as a computer program, a musical work, a motion picture or other audio visual work, or a sound recording, as to which at the time of the offense, (i) the copyright owner has a reasonable expectation of exploiting via a commercial public performance and (ii) no copies or phonorecords of the work have yet been authorized by the copyright owner.¹²⁶ In the case of motion pictures, the enhanced penalty also applies where (i) the work has been made available for viewing

120. *Id.*

121. See Hartline & Barblan, *supra* note 72, at 5.

122. Protecting Lawful Streaming Act § 2(a) [hereinafter PLSA], introducing 18 U.S.C. § 2319C(a)(2).

123. PLSA § 2(a), introducing 18 U.S.C. § 2319C(b).

124. PLSA § 2(a), introducing 18 U.S.C. § 2319C(c)(1).

125. PLSA § 2(a), introducing 18 U.S.C. § 2319C(c)(2).

126. PLSA § 2(a), introducing 18 U.S.C. § 2319C(a).

in a theatre and has not been made available in copies for sale to the general public with the copyright owner's authorization in a format intended to permit viewing outside theatres, or (ii) the work has not been commercially publicly performed with the copyright owner's consent more than twenty-four hours prior to the unauthorized public performance.¹²⁷ The maximum penalty is increased to ten years for subsequent offenses.¹²⁸

However, even though it raises the liability for illegal streaming, the PLSA does not intend to target individuals, small businesses, or non-commercial activities that may access illegal streaming services. Notably, the PLSA does "not affect the activities of ordinary internet users. Nor would it criminalize good faith business/licensing disputes or noncommercial activities." In particular, "individual internet streamers cannot be subject to felony prosecution" for activities such as "incorporating unauthorized content in a YouTube or Twitch stream."¹²⁹ The new law also does not intend to criminalize ISPs simply because others could misuse their services. Again, the acts should be carried on "wilfully" and the absence of volition will exonerate from responsibility. The same applies to open platforms like YouTube or caching services. In other words, the mere streaming of unauthorized works may not fall under the PLSA unless the services intended to do so "wilfully." Along similar lines, merely embedding or linking to an unauthorized stream would unlikely constitute public performance, and thus fall within the scope of the new law.¹³⁰

In addition, certain unauthorized public performances, such as performances through analogue transmission or by legitimate digital transmission services are not mentioned in the PLSA and do not appear to be covered by the new law. Accordingly, when these performances are conducted for commercial gain, they likely remain subject only to misdemeanor liability.

Finally, the PLSA includes a "Rule of Constructions," stating that "nothing in this [new law] shall be construed to": (i) change the interpretation of other civil copyright provisions, including exceptions and limitations to copyright infringement, and secondary liability; and (ii) prevent the authority is to enforce cable theft.¹³¹ In this respect, in addition to the increased criminal liability for the streaming services,

127. *Id.*

128. PLSA § 2(a), introducing 18 U.S.C. § 2319C(c)(3).

129. Supan, *supra* note 62. See also Katharine Trendacosta & Cara Gagliano, *Some Answers to Questions About the State of Copyright in 2021*, ELEC. FRONTIER FOUND. (Feb. 5, 2021), www.eff.org/deeplinks/2021/02/some-answers-questions-about-state-copyright-2021.

130. *But see* Live Nation Motor Sports, Inc. v. Davis, No. 3:06-CV-276-L, 2007 WL 79311 (N.D. Tex. Jan. 9, 2007) (ruling on the legality of unauthorized hyperlinking to copyrighted materials on the Internet).

131. PLSA § 2(a), introducing 18 U.S.C. § 2319C(d).

aggregators or other services illegally uploading copies of copyrighted works on servers or clouds continue to be subjected to the criminal liability for the infringement of the right of reproduction and distribution.¹³² Moreover, the liability for civil copyright infringement continues to apply to illegal streaming services, including the applicable remedies of injunctions and damages, which are elaborated on in Part II.B.¹³³

In this context, it is also relevant to note that the PLSA does not elaborate on specific defenses. Still, the defenses provided in the Copyright Act apply against a claim of illegal streaming, i.e., a court can find that the acts at issue are not illegal because they fall, for example, under the fair use provision. In the United States, in particular, fair use is a legal doctrine that promotes freedom of expression by permitting the unauthorized use of copyrighted works in certain circumstances, namely for “criticism, comment, news reporting, teaching (including multiple copies for classroom use), scholarship, or research.”¹³⁴ The origin of the provision stems from the First Amendment in the U.S. Constitution, which promotes freedom of expression and information.¹³⁵ The application of the fair use defense is not without controversy, however, and many streaming services tend to adopt a conservative approach towards fair use. As elaborated in Part III.C, many UCGs, for example, tend to decide that the use of the work is not fair use when in doubt to avoid potential criminal liability.¹³⁶

Ultimately, it is still early to effectively assess its impact on illegal streaming. As mentioned, recent data continue to point to large numbers of accesses to illegal streaming sites by U.S. users.¹³⁷ However, data also point to a continuous growth of subscription services for streaming service in the United States. In short, “online piracy [may] pose[] a worse problem for copyright holders today than it did” several years ago, “especially with the rise of online streaming. . . [and] with newer technologies,”¹³⁸ yet the same technology has also increased the

132. *Id.* See *supra* Part II.B.

133. 17 U.S.C. § 107.

134. *Id.*

135. U.S. CONST. amend. I.

136. Santhaman, *supra* note 82, at 1106 (noting that “[the realities of digital enforcement, coupled with the subjectivity of fair use, have made it virtually impossible for platforms to apply fair use to online works” because “platforms lack the flexibility to consider [fair use] when they receive takedown notices for works that contain copyrighted material” due to the fact that they could “be held liable for ‘knowingly’ hosting infringing content”).

137. Ashley Johnson, *22 Years After the DMCA, Online Piracy Is Still a Widespread Problem* Information Technology and Innovation Foundation, INFO. TECH. & INNOVATION FOUND. (2020), <https://itif.org/publications/2020/02/07/22-years-after-dmca-online-piracy-still-widespread-problem>.

138. *Id.*

number of users legally consuming entertainment-related content to unprecedented levels.

C. *“Semi-Legal” (or Almost Always Legal) Streaming: Limited Exclusion from Liability*

In addition to the separate categories of legal and illegal streaming services, a third category requires attention: services that are generally legal, yet occasionally may stream illegal content, even though unknowingly. These services are usually UGCs, such as YouTube, SoundCloud, Twitch, or Livestream.¹³⁹ Under U.S. law, these services can be shielded from copyright liability so long as they follow the requirements listed in the safe harbor provisions in the DMCA, which the United States adopted over two decades ago—before the raise of streaming—to address the challenges brought by the advances in digital technologies and the Internet.¹⁴⁰

As highlighted by commentators, the DMCA was adopted to both encourage copyright holders to disseminate or allow digital access to their works through online service providers while also protecting intermediaries from liability under specific conditions that would protect the interests of copyright holders.¹⁴¹ Specifically, the DMCA adopted section 512, which excludes the liability of online service providers, which engage in one or more of the following activities:

- (a) [s]erving as a conduit for the automatic online transmission of material as directed by third parties; (b) catching (*i.e.*, temporarily storing) material that is being transmitted automatically over the internet from one third party to another; (c) storing (*i.e.*, hosting) material at the direction of a user on a service provider’s system or network; or (d) referring or linking users to online sites using information location tools (*e.g.*, a search engine).¹⁴²

According to section 512, online providers are protected so long as they “(1) adopt and reasonably implement a policy of terminating in appropriate circumstances the accounts of subscribers who are repeat infringers; and (2) accommodate and not interfere with ‘standard technical measures’. . . which are measures copyright owners use to

139. Ethan Forrest, *How Does Livestreaming Video Fit into the DMCA’s Safe Harbor?*, BLOOMBERG L. (Sept. 18, 2015), <https://news.bloomberglaw.com/tech-and-telecom-law/how-does-livestreaming-video-fit-into-the-dmca-s-safe-harbor>. See also *Square Ring, Inc. v. Doe-1*, No. CV 09-563 (GMS), 2015 WL 307840 *5 (D. Del. Jan. 23, 2015).

140. Digital Millennium Copyright Act amended U.S. copyright law “to address important parts of the relationship between copyright and the internet.” *The Digital Millennium Copyright Act*, U.S. COPYRIGHT OFF., www.copyright.gov/dmca.

141. Digital Millennium Copyright Act, H.R. 2281, 105th Cong. (1997–1998).

142. 17 U.S.C. § 512.

identify or protect copyrighted works.”¹⁴³ In other words, intermediaries are not liable if they are not aware of the infringing content and the content is promptly removed after being informed of the infringement by the copyright holders—a system known as notice and take down procedure. Nevertheless, also under this system, service providers may be subject to limited injunctive relief for infringing activities conducted on or through their systems or networks.¹⁴⁴

Despite the pressure of copyright holders, however, the DMCA does not impose a general monitoring obligation, or content filtering, for service providers.¹⁴⁵ Instead, the DMCA leaves it to copyright holders to monitor the infringement of their works and notify service providers of instances of presumed infringement. As noted by commentators, “[i]mposing a general monitoring obligation would be excessive, unpractical and unfeasible to discern illegal contents in the internet universe.”¹⁴⁶ Besides the costs of a mandatory filtering system, multiple concerns were expressed in this respect about the consequences of such system on freedom of expression and Internet access. Still, service providers are required to monitor and filter the content shared on their platform when they are aware or know about instances of infringement.¹⁴⁷

The absence of a specific mandate does not prevent, however, service providers and copyright holder agreeing that service providers use filtering systems on a voluntary basis.¹⁴⁸ Several platforms do

143. *Id.*

144. *Id.*

145. See Corynne McSherry & Katharine Trendacosta, *Internet Users of All Kinds Should Be Concerned by a New Copyright Office Report*, ELEC. FRONTIER FOUND. (2020), www.eff.org/deeplinks/2020/06/internet-users-all-kinds-should-be-concerned-new-copyright-offices-report. The Copyright Office noted in the section 517 of title 17 Report in May 2020 that “filtering mandates could raise barriers to competition for new online services. . . an outcome that harms both creators and users. . . [and also] that filtering, and site-blocking mandates would require ‘an extensive evaluation of. . . the non-copyright implications of these proposals, such as economic, antitrust, [and] speech.’” *Section 512 of Title 17: A Report of the Register of Copyrights*, U.S. COPYRIGHT OFF. (May 2020), [hereinafter *Section 512 of Title 17 Report*].

146. Helena Catarina Morais, *Injunctions Against Online Intermediaries Towards a Balanced Model for International Harmonisation* 32 (2017), <https://ssrn.com/abstract=3046477>. See also Jennifer M. Urban, Joe Karaganis & Brianna L. Schofield, *Notice and Takedown in Everyday Practice* 17 (UC Berkeley Pub. Law Rsch. Paper No. 2755628, 2017), <https://ssrn.com/abstract=2755628> (noting that “Congress divided the burdens of compliance between OSPs and copyright owners. Congress placed on Internet intermediaries the burden of responding to valid takedown notices by “expeditiously” removing or disabling access to the identified allegedly infringing content. Congress placed the burden on copyright holders to identify infringing material because it considered that they know what material they own, and “are thus better able to efficiently identify infringing copies than service provider. . .”).

147. See *Capitol Records, LLC v. Vimeo, LLC*, 826 F.3d 78 (2d Cir. 2016) (shifting the burden of addressing infringement on content creators and made the red flag knowledge standard harder to enforce for owners).

148. *Freedom of Expression Unfiltered: How Blocking and Filtering Affect Free Speech*, POLICY BRIEF (Dec. 2016), www.article19.org/data/files/medialibrary/38586/Blocking_and_filtering_final.pdf.

adopt voluntary filtering systems and increasingly more often implement automation to monitor the content shared on their sites. With today's advancement in technology, automatic systems are both less costly and faster than reviews done by humans. For example, beside responding to copyright holders' independent takedown notices, YouTube uses an internal identification service to filter possible infringements.¹⁴⁹ Should any content be flagged through these filters, YouTube takes down the content and later notifies the users, who can appeal the decision.¹⁵⁰ For YouTube, this approach is more cost effective, as the number of appeals is lower and thus the platform must review a lower number of cases. Moreover, even in case of successful appeals due to erroneous takedowns, the damages to the user and potential revenue loss for YouTube are lower than the risk of a DMCA fine for copyright infringement.¹⁵¹

As mentioned, the DMCA safe harbor provisions also do not exclude possible injunctive relief against service providers that do not promptly remove potentially infringing content. In this respect, courts should consider whether the injunction would significantly burden the provider's system or network, the extension of the harm to the copyright owner, the technical feasibility, effectiveness, and proportionality of the injunction.¹⁵² In particular, the DMCA provides for three specific types of injunctions to use against service providers: identification of infringers, website blocking, and internet access suspension. Courts may also consider non-specified injunctions if they consider these necessary to prevent or restrain a copyright infringement.¹⁵³

With respect to the identification of infringers, the DMCA provides that copyright holders can obtain from any U.S. district court a subpoena to an intermediary to expeditiously identify an alleged infringer to bring a civil lawsuit against him.¹⁵⁴ On the other hand, courts need to follow the following steps to grant website blocking injunctions: (i) compare the impact of the injunction on the platform's business and the harm to the copyright holders;¹⁵⁵ (ii) consider the

149. *How Content ID Works*, GOOGLE SUPPORT, <https://support.google.com/youtube/answer/2797370>.

150. Santhaman, *supra* note 82, at 1106 ("Once the user has received a takedown notice they can (1) do nothing and YouTube will remove the video, (2) remove and/or replace the music, (3) get a license, (4) in some cases allow the copyright holder to monetize the video and get ad revenue from the song, or (5) challenge the notice. Currently, YouTube's Content ID filter can block works containing copyrighted material a few moments after the video is uploaded onto a channel, which can further discourage creators from sharing their work."). See also *Viacom Int'l, Inc. v. YouTube, Inc.*, 676 F.3d 19, 26 (2d Cir. 2012).

151. Santhaman, *supra* note 82, at 1106.

152. 17 U.S.C. § 512(j)(2).

153. *Id.* § 512(j)(1).

154. *Id.* § 512(j)(1)(A)(iii).

155. When assessing this criterion, courts will have to analyze the commercial value of the works, the profits lost due to the infringement and whether other less burdensome and comparably effective means are available. *Id.* § 512(j)(2).

technical feasibility and effectiveness in preventing infringement; (iii) ensure that the injunction will not prevent access to non-infringing material to avoid a claim for violation of the First Amendment.¹⁵⁶ In practice, however, courts rarely grant these injunctions.¹⁵⁷ Finally, Internet access suspension is regulated by a Memorandum of Understanding (MOU), which entered into force in 2013 and provides for a graduated response based on “six-strikes.”¹⁵⁸ Notably, following a copyright holder’s allegation of infringement, the service provider needs to identify the infringer to whom it will send five notices that inform her of the allegation, notify her of the legal alternatives to seek a copyright license, and warn her that a continued infringement may result into sanctions. Following these five strikes, the sixth and last strike is a mitigation measure that can include slower upload and download speeds, account downgrading, or a “temporary restriction” from Internet access.¹⁵⁹ The accused infringer can also request an independent review of the case via the American Arbitration Association or the courts.¹⁶⁰

Perhaps not surprisingly, the DMCA notice-and-take down procedure has been widely criticized.¹⁶¹ Service providers have often underscored that the system is bias toward copyright holders and allows a considerable number of abuses. For example, sending high volumes of often inaccurate notices is a common occurrence, which is magnified by the fact that copyright owners often automate these notices without effectively vetting their merit.¹⁶² Moreover, even though copyright holders are supposed to issue takedown notices in good faith, good faith remains a subjective standard, which is easy to evade and can lead to abuses of the system.¹⁶³ An additional negative result of this procedure is that risk aversion and fear of a DMCA fines almost systematically lead service providers to ignore the possibility that the uploaded content may constitute fair use of unlicensed content. As a

156. *Id.*

157. Targeted injunctions and specific technical means involve smaller risks of over-blocking, but implicate more costs for ISPs and may, therefore, be considered disproportional.

158. See Ctr. for Copyright Info. Memorandum of Understanding 24 (Attachment A) (July 6, 2011), <https://info.publicintelligence.net/CCI-MOU.pdf> [hereinafter CCI-MOU]. See, e.g., Annemarie Bridy, *Graduated Response American Style: “Six Strikes” Measured Against Five Norms*, 23 *FORDHAM INTELL. PROP. MEDIA & ENT. L.J.* 1 (2013).

159. CCI-MOU, *supra* note 158.

160. *Id.*

161. The literature highlighting the problems of the DMCA is extensive and cannot be exhaustively reported here. In general, see Mark Lemley, *Rationalizing Internet Safe Harbors*, 6 *J. TELECOMM. & HIGH TECH. L.* 101, 113 (2007).

162. See Daniel Seng, *Copyrighting Copywrongs: An Empirical Analysis of Errors with Automated DMCA Takedown Notices*, 37 *SANTA CLARA HIGH TECH. L.J.* 119 (2021). But see Timothy Geigner, *Gasp! YouTube Shutters Account for Person Committing DMCA Takedown Fraud!*, *TECHDIRT* (Nov. 9, 2021), www.techdirt.com/2021/11/09/gasp-youtube-shutters-account-person-committing-dmca-takedown-fraud.

163. *Rossi v. Motion Picture Ass’n of Am. Inc.*, 391 F.3d 1000 (9th Cir. 2004).

result, fair use is assessed only in case of appeals, which again represent a fraction of the take down cases.¹⁶⁴

On the other hand, copyright holders have defined the DMCA as a “very reactive type of protocol” because it requires copyright holders to monitor the Internet for possible infringements and send takedown notices to service providers.¹⁶⁵ They also found it to be ineffective against repeated infringers and advocated for a DMCA’s amendment, which would also include a “stay down system” in which copyright holders would notify of a specific infringement once and then the service providers would become responsible for monitoring their sites for repeated incidence of the same infringement.¹⁶⁶

In the past years, several initiatives have been undertaken to amend and improve the current notice and takedown system, and overall, the DMCA. In 2020, the Copyright Office released a study on the possible revision of section 512 of the DMCA which found that, overall, “the operation of the section 512 safe harbor system today is unbalanced” in particular with respect to “eligibility qualifications for the service provider safe harbors, repeat infringer policies, knowledge requirement standards, specificity within takedown notices, non-standard notice requirements, subpoenas, and injunctions.”¹⁶⁷ Legislators have also considered “modernizing” the current law. In late 2020, Senator Tillis of the Senate Judiciary Committee Subcommittee on Intellectual Property released a draft of the DMCA Modernization Act for stakeholders’ comments,¹⁶⁸ which includes a system based on “notice-and-stay-down” procedure as advocated by part of the industry and copyright holders.¹⁶⁹ However, the draft was immediately criticized as being against the First Amendment.¹⁷⁰ At this time, the bill has not been further discussed and, even if it is clear that the DMCA

164. Santhaman, *supra* note 82, at 1101–02 (“In the early days of YouTube, Universal Music issued a takedown notice of a video of a toddler dancing to Prince’s song “Let’s Go Crazy” (citing *Lenz v. Universal Music Corp.*, 815 F.3d 1145, 1149 (9th Cir. 2016))).

165. Timothy Geigner, *UFC COO Publicly Pushing “Notice and Stay Down” Reforms to DMCA, Despite that Being Horrible for Almost Everyone*, TECHDIRT (Aug. 4, 2021), www.techdirt.com/2021/08/04/ufc-coo-publicly-pushing-notice-stay-down-reforms-to-dmca-despite-that-being-horrible-almost-everyone.

166. *Id.*

167. *Section 512 of Title 17 Report*, *supra* note 145.

168. *12/18 Discussion Draft for Stakeholder Comments Only*, www.tillis.senate.gov/services/files/97A73ED6-EBDF-4206-ADEB-6A745015C14B (discussion draft of legislation to reform the Digital Millennium Copyright Act).

169. Jem Aswad, *Senator Thom Tillis Seeks Suggestions for Reform of Digital Millennium Copyright Act*, VARIETY (Nov. 11, 2020), <https://variety.com/2020/music/news/senator-thom-tillis-dmca-digital-millennium-copyright-act-letter-1234829353>.

170. Mike Masnick, *Senator Tillis Releases Massive Unconstitutional Plan to Reshape the Internet in Hollywood’s Image*, TECHDIRT (Dec. 22, 2020), www.techdirt.com/2020/12/22/senator-tillis-releases-massive-unconstitutional-plan-to-reshape-internet-hollywoods-image (noting that “[i]t’s difficult to see how a notice-and-staydown regime is even remotely Constitutional” because it is “telling companies that they cannot host certain speech,” which represents “quintessential prior restraint—especially since other uses may not be infringing”).

and section 512 need to be reformed and modernized, these reforms may be lengthy and will certainly lead to heated debates.

CONCLUSION

As mentioned in the Introduction, this Report presents only a summary account of the streaming industry and its legal regulation in the United States. However, this Report has hopefully clarified the following points. Unquestionably, streaming has become one of the most prominent technologies to access entertainment and other content in the United States and worldwide. The United States constitutes the biggest market for streaming both in terms of users and global service providers. Because of the importance of streaming, national law has undergone several amendments in the past years, the most notable with the adoption of the MMA and the PLSA. Even though it may still take a few years, a comprehensive review of the DMCA may follow, which may include specific provisions related to streaming. Still, several issues remain problematic or unresolved at the present time. First, the United States, like many other countries, continues to witness a “value gap” and considerable disparity in streaming revenues between artists, content producers, and platforms. The attempt to streamline the collection and management of royalties have been only partially successful, at best, to date. Second, the DMCA’s notice and takedown system needs to be reformed, both for copyright holders and service providers, even though finding a working balance accepted by all stakeholders will prove a very complex challenge. Last, but not least, illegal streaming remains a large part of the industry, which is problematic under a legal perspective, even though both subscriptions to existing services and streaming revenues are growing steadily in the United States.