

POWER PLAY: THE BATTLE FOR COPYRIGHT CONTROL IN EMULATION♦

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INTRODUCTION

In 2014, 190.6 million Americans played video games weekly, with the average player being thirty-six years old and having played games for almost seventeen years.¹ These “old school” players are not leaving their hobby behind either—83% of them now share their gaming experiences with their children.² One of the challenges consumers face when trying to play their favorite games from previous generations is the phenomenon of “abandonware,” software that is no longer supported or produced by

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¹ *Essential Facts About the U.S. Video Game Industry*, ENT. SOFTWARE ASS’N (2024) <https://www.theesa.com/wp-content/uploads/2024/05/Essential-Facts-2024-FINAL.pdf> [<https://perma.cc/T7PX-5T66>]. The Entertainment Software Association (ESA), formerly the Interactive Digital Software Association (IDSA), is the trade association of the video game industry in the United States.

² *Id.*

its original developers.³ Compounding this challenge is the issue of “bit rot”—the rapid obsolescence of hardware and software platforms (the game consoles)—coupled with the gradual degradation of physical media (the games themselves).⁴

In response to these problems, many consumers have begun to seek access to third-party emulators as a means of playing games that are no longer officially- or easily accessible. Game emulators are software programs that allow users to play games on platforms for which they were not originally intended, such as running console or arcade games on personal computers.⁵ To replicate the original gaming experience, emulators use game files in read-only memory (ROM) format, usually stored on a game cartridge, or as an optical disc image (ISO image), stored on a game disc.⁶ Compared to spending time and resources scouring flea markets or browsing unreliable online marketplaces (perhaps for antique games that are listed for hundreds of dollars), it is “trivially easy to [illegally] download hundreds of older video games off the internet for free.”⁷

However, this ease of access is a direct challenge to major gaming companies, particularly those that seek to maintain control of their games, past or present.⁸ For example, Nintendo Co., Ltd. (also “Nintendo of America” or simply “Nintendo”), a dominant force in the North American video game industry since the 1980s,⁹ has a history of being one of the main players taking a strong stance in defense of its intellectual property (IP).¹⁰ Despite the company’s ongoing production of new titles,

³ Alex Donaldson, *If Publishers Want to Delist Old Games, That’s Fine - So Long as they Accept Abandonware Status*, VG247 (July 12, 2022) <https://www.vg247.com/abandonware-sonic-assassins-creed-delisting-old-games> [<https://perma.cc/YW5H-YSAE>]. For example, Nintendo discontinued the Nintendo eShop and online services for the 3DS game system, effectively eliminating online play and causing games which require online communications functionally unplayable. See *Announcement of Discontinuation of Online Services for Nintendo 3DS and Wii U Software*, NINTENDO, <https://www.nintendo.com/en-gb/Support/Nintendo-3DS-2DS/Connecting-to-the-Internet/Announcement-of-Discontinuation-of-Online-Services-for-Nintendo-3DS-and-Wii-U-Software-Update-April-2024-2455285.html> [<https://perma.cc/UYJ2-9786>] (last visited Oct. 18, 2024).

⁴ Yin Harn Lee, *Making Videogame History: Videogame Preservation and Copyright Law*, 1 INTERACTIVE ENT. L. REV. 103, 103 (2018).

⁵ See Will White, *Would You Like to Save Your Game?: Establishing a Legal Framework for Long-Term Digital Game Preservation*, 81 OHIO STATE LAW J. 567, 581 (2020); see also Robert Earl Wells III, *Video Game Emulators: What You Need to Know*, LIFEWIRE (Mar. 11, 2020), <https://www.lifewire.com/video-game-emulators-need-to-know-4687006> [<https://perma.cc/8QG7-AGQR>].

⁶ White, *supra* note 5. Hereinafter, “ROMs” will be used to reference both storage formats.

⁷ James Conley, Ed Andros, Priti Chinai, Elise Lipkowitz, & David Perez, *Use of a Game Over: Emulation and the Video Game Industry*, A White Paper, 3 NW. J. TECH. & INTELL. PROP. 1, 8 (2004).

⁸ See *infra* Part II.

⁹ See *infra* note 89.

¹⁰ See *infra* Part II; A good example of this is Nintendo’s 2024 high-profile lawsuit filed in the Tokyo District Court against Pocketpair, Inc., the developers of Palworld. Palworld characters have been noted by consumers and observers to share several design features with characters from

there is a clear trend of re-publishing older titles in the form as “remasters” or “remakes,”¹¹ which see general commercial success,¹² even if criticized as “lazy.”¹³ Although remakes and remasters provide one avenue for continued consumer access to classic games, the continued persistence of emulators in the marketplace indicates that consumer demand has not been fully satiated.¹⁴ While the practice of phasing old works out of circulation as new generations are released is not unique to video games,¹⁵ emulation offers a necessary solution in the video game context as continued access often depends on recreating obsolete, proprietary platforms and system software that rights-holders no longer support.¹⁶ However, even as emulators operate under only a thin veil of copyright protection through fair use,¹⁷ major players like Nintendo frequently litigate against emulators and ROM distributors partaking in alleged infringing activity.¹⁸

Although video games are creative works that generally qualify for copyright protection under the Constitution,¹⁹ the legal framework

Nintendo’s Pokémon franchise. See *Filing Lawsuit for Infringement of Patent Rights against Pocketpair, Inc.*, NINTENDO (Sept. 19, 2024), <https://www.nintendo.co.jp/corporate/release/en/2024/240919.html> [<https://perma.cc/XAW6-PUA3>].

¹¹ White, *supra* note 5, at 600 (noting that the prevalence of remakes and remasters is a broader industry trend, the desire to preserve the ability to experience classic games well past their original shelf-life).

¹² See *Top Selling Title Sales Units*, NINTENDO, <https://www.nintendo.co.jp/ir/en/finance/software/index.html> [<https://perma.cc/2D3T-MN7Q>] (last visited Oct. 30, 2024). In addition to the two titles mentioned, other remakes and remasters include *New Super Mario Bros. U Deluxe*, *Pokémon Mystery Dungeon Rescue Team DX*, *Kirby’s Return to Dream Land Deluxe*, *Pikmin 1+2*, *Pikmin 3 Deluxe*, *Luigi’s Mansion 2* among others that are in the top 100 best-selling titles for the Nintendo Switch; For a discussion on how remakes enhance the original versions of games and how emulators reveal consumer demand for accessible, improved experiences, see *infra* notes 64–65.

¹³ See generally Alana Hagues, *Talking Point: Why Are So Many Remasters Sub-Par At Launch*, NINTENDOLIFE, (Feb. 23, 2023), <https://www.nintendolife.com/features/talking-point-why-are-so-many-remasters-sub-par-at-launch> [<https://perma.cc/3PNK-RS3S>] (noting the increasing reliance on remasters as commercially viable releases despite fan criticism characterizing many as low-effort).

¹⁴ See *infra* notes 60–61.

¹⁵ Kelsey Lewin, *87% Missing: The Disappearance of Classic Video Games*, VIDEO GAME HIST. FOUND. (July 10, 2023), <https://gamehistory.org/87percent/> [<https://perma.cc/TN9Y-7CM8>] (“Just 13% of video game history is being represented in the current marketplace. In fact, no period of video game history defined in this study even cracked 20% representation.” (emphasis in original)).

¹⁶ See *infra* Part II.B (suggesting that the divide between consumer demand and what is being offered in the market is the result of rights holders (a) taking advantage of the benefits of artificial scarcity, (b) facing impractical or non-business-friendly demands from fans, and (c) encountering insufficient demand for certain games).

¹⁷ 17 U.S.C. § 107 (outlining four factors in which an otherwise infringing use of a copyright work is justified as a being a “fair use” of the work, such as but not limited to the purposes of “criticism, comment, news reporting, teaching, scholarship, or research.”). While fair use is often invoked to defend innovative uses of copyrighted materials, courts have often ruled against defendants in cases involving unauthorized digital uses. See *A&M Records, Inc. v. Napster, Inc.*, 239 F.3d 1004, 1028 (9th Cir. 2001) (holding that a distributor of technology that “promot[es] its use to infringe copyright” may be liable for induced copyright infringement); *Metro-Goldwyn-Mayer Studios Inc., v. Grokster, Ltd.*, 545 U.S. 913, 936 (2005) (holding that peer-to-peer file-sharing platforms enabling users to distribute copyrighted works were not shielded by fair use).

¹⁸ See *infra* Part II.

¹⁹ U.S. CONST. art. I, § 8, cl. 8. (stating that the purpose of copyright protection is “[t]o promote

governing their preservation, distribution, and long-term access remains comparatively underdeveloped.²⁰ While other forms of entertainment, such as music, have long received explicit attention by Congress, video games have yet to enjoy the same level of regulatory clarity.²¹ The Lockean-labor theory asserts that creators are entitled to the fruits of their labor and supports Nintendo's treatment of ROM and emulator distributors.²² However, the prevailing utilitarian view of copyright law—which seeks to balance the interests of creators and the public good—suggests that more comprehensive solutions are needed to address the tension between developers' exclusive rights and public interests in competition, access, and innovation.²³ Despite these ongoing preservation concerns, Congress and the Copyright Office have yet to provide any lasting solutions.²⁴ The current gap in copyright law highlights the challenges in adapting the Copyright Act to evolving technologies, potentially failing the objective of “promoting the Progress of Science and useful Arts.”²⁵

This Note argues that, despite the legal challenges posed by video game emulation, a more balanced approach is needed to promote preservation and innovation, as the current legal framework prioritizes developers' rights and commercial interests at the expense of preserving older games. Drawing parallels to the music industry, this Note suggests that legislative solutions, such as adapting compulsory licensing schemes or establishing a dedicated federal agency for video game preservation, are necessary to reconcile the tension between copyright protection and the public interest in cultural preservation.²⁶ This Note will also explore the ongoing legal battle surrounding video game emulation to contextualize the prevailing issues and interests.²⁷ Part I examines the development of video game copyright regulation in the U.S. in the context of the industry's transition from physical cartridges and consoles

the Progress of Science and useful Arts, by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries.”).

²⁰ See *infra* notes 31–34; see also AARON PERZANOWSKI & JASON SCHULTZ, *THE END OF OWNERSHIP: PERSONAL PROPERTY IN THE DIGITAL ECONOMY* 26 (2016) (explaining how copyright and licensing law governing digital games has developed unevenly, particularly with respect to access and preservation).

²¹ See *infra* note 42.

²² See *Spare the Mod: In Support of Total-Conversion Modified Video Games*, 125 HARV. L. REV. 789, 799–801 (2012) (suggesting that the Lockean labor-desert theory, based on the idea that “an individual may distinguish her goods from the commons and thereby be justly rewarded for laboring,” is incompatible with software intellectual property law, though more equitable approaches which focus on “distributive justice based on individual contributions to a joint venture” support recognizing some property rights for persons that modify games using their own software).

²³ *Id.*

²⁴ See *infra* notes 222–224 and accompanying text.

²⁵ See U.S. Const. art. I, § 8, cl. 8.

²⁶ See *infra* Part III.

²⁷ See *infra* Part II.B.

to digital platforms.²⁸ Part II delves into the key cases which established that emulators have some protection under fair use, then examines Nintendo's own contemporary legal activities to identify to what extent emulators may operate under the law.²⁹ Part III draws comparisons between the copyright treatment of music and video games, exploring potential solutions through licensing schemes and other copyright reforms.³⁰

PART I: THE EVOLUTION OF VIDEO GAME LAW

The modern framework for copyright protection in the United States, the Copyright Act of 1976, was a deliberate shift toward broad categories of protection to accommodate emerging technologies and creative works, departing from the more specific language of prior statutes like the Copyright Act of 1909.³¹ However, while video games are not explicitly mentioned in the Act, they have since been recognized as protectable under copyright law.³² This recognition was reinforced in key cases such as *Midway Manufacturing Co. v. Arctic International, Inc.*, where the Seventh Circuit affirmed that video games qualify as copyrightable audiovisual works under the 1976 Act.³³

Despite this foundational protection, video games have posed unique challenges for the courts. Unlike most traditional media, video games combine multiple elements—audio, visual art, programming, and gameplay mechanics—creating a patchwork of rights that complicates preservation and access.³⁴ This complexity has only grown with the industry's transition from physical media, such as cartridges and discs, to digital platforms. The shift has introduced new barriers to preservation, as proprietary file formats and digital rights management (“DRM”) technologies often restrict access and make older games inaccessible to

²⁸ *Id.*

²⁹ See *infra* Part II.

³⁰ See *infra* Part III.

³¹ 17 U.S.C. § 102(a) (copyrightable works include: “(1) literary works; (2) musical works . . . (3) dramatic works . . . (4) pantomimes and choreographic works; (5) pictorial, graphic, and sculptural works; (6) motion pictures and other audiovisual works; (7) sound recordings; and (8) architectural works.”); see also 17 U.S.C. § 102(b) (setting forth that copyright protection does not extend to any idea, procedure, process, system, method of operation, concept, principle, or discovery).

³² *Williams Elecs., Inc. v. Artic Int'l, Inc.*, 685 F.2d 870, 875 (3d Cir. 1982) (holding that a video game, as a computer program run in a computer capable of reading its code and displaying interactive audiovisual content to its user, is eligible for copyright).

³³ *Midway Mfg. Co. v. Artic Int'l, Inc.*, 704 F.2d 1009, 1009 (7th Cir. 1983); see 17 U.S.C. § 101 (defining “audiovisual works” as “works that consists of a series of related images which are intrinsically intended to be shown by the use of machines or devices such as projectors, viewers, or electronic equipment, together with accompanying sounds, if any, regardless of the nature of the material objects, such as films or tapes, in which the works are embodied.”).

³⁴ In addition to being copyrightable as a “literary text,” the audio, sound effects, musical score, elements of game graphics, characters, and the game's story and setting may be subject to copyright protection. Lukas Ruthes Gonçalves, *Mechanical Licenses for Video Games*, 14 AM. U. INTELL. PROP. BRIEF 1, 5 (2022).

contemporary systems.³⁵ Additionally, the disappearance of physical copies has increased reliance on online marketplaces, where games can be delisted without warning, further complicating preservation efforts.³⁶

The 1998 Digital Millennium Copyright Act (“DMCA”) further shaped the copyright landscape for video games by criminalizing the circumvention of technological protection measures (“TPM”).³⁷ Although designed to align U.S. copyright law with international standards,³⁸ the DMCA has proven contentious in its application to video game preservation.³⁹ Recognizing the potential for these restrictions to hinder preservation, the DMCA allows for periodic reviews by the Library of Congress to consider exemptions for specific uses.⁴⁰ These exemptions have occasionally provided limited access for particular uses,⁴¹ though advocates argue that these carve-outs are insufficient and fail to address the broader need for accessible, long-term preservation strategies for video games.⁴² For instance, while exemptions may allow libraries to preserve digital copies of abandoned games, the lack of a permanent framework leaves preservation efforts vulnerable to shifting policies.⁴³

Organizations like the Video Game History Foundation are dedicated to the goal of preserving video game culture and history by advocating for legal reforms enabling libraries and archives to lend digital

³⁵ An example of such restriction of access will be discussed in greater detail in Part II.B.(2) of this Note. See *infra* notes 138–160 and accompanying discussion.

³⁶ See Announcement of Discontinuation of Online Services for Nintendo 3DS and Wii U Software, *supra* note 3.

³⁷ 17 U.S.C. § 1201(a); *Digital Millennium Copyright Act*, AM. LIBR.ASS’N, <https://www.ala.org/advocacy/copyright/dmca#:~:text=On%20October%2012%2C%201998%2C%20Congress,17%20of%20the%20U.%20S.%20Code> [https://perma.cc/LX4S-AUBP] (last visited Nov. 10, 2024).

³⁸ U.S. COPYRIGHT OFF., THE DIGITAL MILLENNIUM COPYRIGHT ACT OF 1998 SUMMARY 14 (Dec. 1998), <https://www.copyright.gov/legislation/dmca.pdf> [https://perma.cc/2UBJ-VMTP].

³⁹ See *infra* note 42.

⁴⁰ See 17 U.S.C. § 1201(a)(1)(C); see also U.S. COPY. OFF., THE TRIENNIAL RULEMAKING PROCESS, https://cdn.loc.gov/copyright/1201/1201_rulemaking_slides.pdf [https://perma.cc/X37R-YCRL] (last visited Nov. 10, 2024).

⁴¹ See 17 U.S.C. § 1201(d)(1) (exempting libraries, archives, and educational institutions from the DMCA); see also 17 U.S.C. § 1201(e) (providing a similar exemption for law enforcement); 17 U.S.C. § 1201(f) (exempting circumvention technologies).

⁴² Archivists are “frustrated and deeply concerned” regarding copyright policies related to software, and they charge the current legal environment of “imperiling the future of digital memory.” PATRICIA AUFDERHEIDE, BRANDON BUTLER, KRISTA COX, & PETER JASZI, THE COPYRIGHT PERMISSIONS CULTURE IN SOFTWARE PRESERVATION AND ITS IMPLICATIONS FOR THE CULTURAL RECORD 1, 3 (Feb. 9, 2018), <https://apo.org.au/node/132166> [https://perma.cc/4GKQ-5D2J]. See also Brad King, *Abandonware: Dead Games Live On*, WIRED (Jan. 19, 2002), <https://www.wired.com/2002/01/abandonware-dead-games-live-on/> [https://perma.cc/9R9B-XKFM] (outlining the underlying goals of a video game archiver not as a means of making-money but as a preservation hobbyist and gaming enthusiast).

⁴³ See AUFDERHEIDE ET AL., *supra* note 42, at 14 (arguing that the scope and language of 17 U.S.C. § 108(c) is too narrow to be of substantial benefit to software preservation activities); See *infra* notes 214–218 and accompanying text (discussing the temporary nature of DMCA § 1201 exemptions for video game preservation).

copies of video games, akin to eBook lending in libraries.⁴⁴ Conversely, industry groups have argued that developers are justified in withholding IP for potential re-releases or remasters, pointing to digital marketplaces as a potential revenue source for back-catalog titles that is undermined by unauthorized copying and distribution.⁴⁵ This tension highlights a critical divide between preservationist goals and the commercial priorities of developers as concerns about potential market harm may be invoked to justify restrictive practices.⁴⁶

Emulation continues to evolve alongside shifts in gaming technology and consumer behavior. For instance, the recent release of the Delta emulator on Apple's App Store signals a growing acceptance of emulators as legitimate tools, at least by the consumer,⁴⁷ driven in part by regulatory changes like the EU Digital Markets Act.⁴⁸ Meanwhile, the industry-wide transition to digital distribution—exemplified by services like Nintendo Switch Online (“NSO”)⁴⁹ and platforms like Steam—have altered how consumers access games.⁵⁰ These changes reflect a growing emphasis on convenience and accessibility but also highlight the limitations of digital ownership, where players often find themselves bound by restrictive licenses rather than true ownership; digital purchases of video games often represent the purchase of a license to play the game on a digital platform rather than ownership of an actual copy of the game itself.⁵¹ While this may surprise consumers who build massive libraries

⁴⁴ Jason Evangelho, *The Video Game History Foundation Launches Its Massive Digital Library*, FORBES (Feb. 3, 2025, at 12:38 ET), <https://www.forbes.com/sites/jasonevangelho/2025/02/03/the-video-game-history-foundation-launches-its-massive-digital-library/> [https://perma.cc/CFG3-KD95].

⁴⁵ Indeed, game piracy cost companies an estimated \$3 billion worldwide in 2001. See King, *supra* note 42 (discussing industry concerns that unauthorized copying and distribution of older video games—often marketed as “abandonware”—undermines legitimate markets for back-catalog titles and future re-releases).

⁴⁶ See AUFDERHEIDE ET AL., *supra* note 42, at 11 (noting that rightsholders’ primary concerns of “commercially significant activity” contribute to conservative access and preservation practices).

⁴⁷ See Craig Chapple, *Delta Game Emulator Hits No. 1 on the App Store Download Charts in 35 Countries*, POCKET GAMER (Apr. 19, 2024), <https://www.pocketgamer.biz/delta-game-emulator-hits-no-1-on-the-app-store-download-charts-in-35-countries/> [https://perma.cc/4JML-JHRQ].

⁴⁸ *Id.*

⁴⁹ NINTENDO, SECOND QUARTER FINANCIAL RESULTS AND CORPORATE MANAGEMENT POLICY BRIEFING FOR FISCAL YEAR ENDING MARCH 2024 51 (2024), <https://www.nintendo.co.jp/ir/pdf/2023/231108e.pdf#page=51> [https://perma.cc/59U5-ZK3U] (last visited Oct. 19, 2024) [hereinafter “NINTENDO SECOND QUARTER FINANCIAL RESULTS”]. Subscription services like NSO grant users access to libraries with select titles from older consoles, including the Nintendo Entertainment System, the Super Nintendo Entertainment System, and GameBoy system.

⁵⁰ Mitch Wallace, *Yes, a Digital-Only Gaming Future Is Coming. And We Can't Stop It*, FORBES (Oct. 22, 2023, 04:42 ET) <https://www.forbes.com/sites/mitchwallace/2023/10/13/yes-a-digital-only-gaming-future-is-coming-and-we-cant-stop-it/> [https://perma.cc/DD4J-H2AV] (“[D]igital game purchases account[ed] for over 70% of all game sales in 2022 . . .”).

⁵¹ In October 2024, the Steam digital marketplace began displaying a disclosure notice on checkout screens that “a purchase of a digital product grants a license for the product on Steam.” While the licensing scheme is not new, the explicit disclosure of the practice is likely motivated by California Assembly Bill No. 2426, aimed at combatting “disappearing” purchases of digital content by mandating that digital storefronts inform users that their purchase amounts only to a license for

of digital games, this distinction has been a persistent practice in the digital age.⁵²

Nintendo's role in the copyright legal arena serves as a valuable case study for understanding the conflicting copyright interests between rights holders and consumers.⁵³ Nintendo leverages its vast library of IP⁵⁴ as a cornerstone of its distribution model, frequently capitalizing on the demand for its legacy titles.⁵⁵ This approach allows Nintendo to monetize its extensive back catalog through initiatives such as the Nintendo Switch Online (NSO) subscription service, which offers access to select titles from classic consoles, including the Nintendo Entertainment System (NES), Super Nintendo Entertainment System (SNES), and GameBoy.⁵⁶ However, almost all of Nintendo's games are exclusively available on the company's proprietary consoles, unlike Xbox and PlayStation, which generally offer games on multiple platforms or through computer-based storefronts like Steam and Epic Games.⁵⁷

Nintendo's restrictive approach to their games mean consumers often turn to emulation, not only avoid the price for purchasing them, but to overcome the barriers posed by platform exclusivity.⁵⁸ While Xbox

particular digital media rather than ownership. Umar Shakir, *Steam Now Says the 'Game' You're Buying is Really Just a License*, VERGE (Oct. 11, 2024, 15:58 ET), <https://www.theverge.com/2024/10/11/24267864/steam-buy-purchase-license-digital-storefront> [<https://perma.cc/J4WV-PLSD>].

⁵² Amy Hebert, *Do You Really Own the Digital Items You Paid For?*, F.T.C.: CONSUMER ADVICE, <https://consumer.ftc.gov/consumer-alerts/2024/04/do-you-really-own-digital-items-you-paid> [<https://perma.cc/W3QF-2FMY>] (last visited Jan. 9, 2025) (explaining that consumers often purchase merely a license to access the content of a digital product rather than all of the rights to the product itself and that this distinction is typically explained in the terms of service, hidden from the view of the ordinary consumer).

⁵³ A closer examination of Nintendo's lawsuits against alleged infringers, which usually lead to settlements, can be found in Part II.

⁵⁴ For a list of Nintendo's published video games, see *List of Nintendo games*, NINTENDO WIKI, https://nintendo.fandom.com/wiki/List_of_Nintendo_games [<https://perma.cc/Z2RJ-8ESM>] (last visited Nov. 12, 2024).

⁵⁵ See *Nintendo Classic Mini NES Storefront*, NINTENDO, <https://www.nintendo.com/en-gb/Misc-/Nintendo-Classic-Mini-Nintendo-Entertainment-System/Nintendo-Classic-Mini-Nintendo-Entertainment-System-1124287.html> [<https://perma.cc/36B3-KFVB>] (last visited Oct. 20, 2024); *Nintendo Classic Mini Super Nintendo Entertainment System Storefront*, NINTENDO, <https://www.nintendo.com/en-za/Misc-/Nintendo-Classic-Mini-Super-Nintendo-Entertainment-System/Nintendo-Classic-Mini-Super-Nintendo-Entertainment-System-1238330.html> [<https://perma.cc/BS24-U9WD>] (last visited Oct. 19, 2024). For a discussion on Nintendo's use of old video game soundtracks, see also *infra* note 190.

⁵⁶ NINTENDO SECOND QUARTER FINANCIAL RESULTS, *supra* note 49.

⁵⁷ But see Justin Carter, *Microsoft Shuts Down Third-Party Emulation on Xbox Series X|S*, GAMEDEVELOPER (Apr. 7, 2023) <https://www.gamedeveloper.com/business/microsoft-shuts-down-third-party-emulation-on-xbox-series-x-s/> [<https://perma.cc/5JSA-M8ZU>] (reporting Microsoft's enforcement actions against third-party emulation despite broader cross-platform distribution practices); *Sony Comput. Ent. Am., Inc. v. Bleem, LLC*, 214 F.3d 1022 (9th Cir. 2000) (showing that Sony— whose PlayStation console released in 1994— similarly to Nintendo, has engaged in early lawsuits against emulators like the Connectix Video Game System and “Bleem!”).

⁵⁸ See, e.g., Karl Bode & Emanuel Maiberg, *Nintendo Makes It Clear that Piracy Is the Only Way to Preserve Video Game History*, VICE (Jan. 29, 2019, at 15:51 ET), <https://www.vice.com/en/article/nintendo-makes-it-clear-that-piracy-is-the-only-way-to-preserve-video-game-history/> [<https://perma.cc/K7MH-45W6>] (explaining that after Nintendo shut down the Wii Shop Channel service for the Wii, the only feasible ways to access games which were exclusive to the service are

and PlayStation users have the option to play older games on new systems or PCs, Nintendo fans face greater accessibility and quality issues due to the restrictions of platform exclusivity.⁵⁹ Exclusivity even causes issues when older games are re-released, as changes made to the original versions can alienate certain players, such as those who prefer specific features or mechanics removed in newer additions.⁶⁰ Consumers lacking access to older hardware and software are often left with no option but to turn to emulation to experience the games as they were originally released, highlighting a growing divide between preservation and innovation as nostalgia-driven demand for original gaming experiences often conflict with modern remakes or remasters.⁶¹ The existence of emulators to compete with larger game and console companies benefits the market by expanding consumer choice, by creating an incentive for such companies to “create a number of versions compatible with different platforms in order to preempt competing emulator software.”⁶² In addition to greater accessibility to their desired gaming platforms, consumers also benefit from an increase in quality of these emulator services as larger companies like Nintendo and Sony have superior resources and ability to create higher quality emulators compared to smaller, independent developers.⁶³

impractical or illegal. The games are accessible if a user has already downloaded the games to their console, but if the storage device used is destroyed, the game would be lost); *see also* Zack Zwiezen, *One Lone Nintendo Fan Has Been Keeping the 3DS Servers Alive for Months*, KOTAKU (Aug. 15, 2024), <https://kotaku.com/3ds-servers-offline-last-player-mario-kart-7-months-1851623578> [<https://perma.cc/3QDY-9AD8>] (reporting that a user under the alias of “Fishguy6564” was the last remaining person with connectivity to the 3DS online servers after it was officially shut down months earlier).

⁵⁹ *See* Umar Shakir, *Nintendo 64 Games on Nintendo Switch Are Not up to Snuff*, VERGE (Oct. 26, 2021, at 17:48 ET), <https://www.theverge.com/2021/10/26/22746897/nintendo-switch-online-n64-emulation-quality-bad> [<https://perma.cc/LZK8-CD5F>] (noting that while Nintendo’s release of N64 game through NSO has been met with criticism due to noticeable emulation quality issues such as missing fog, poor texture rendering, and input lag, some argue that these issues reflect differences in the original versions and the expectations of modern displays).

⁶⁰ Henry Stockdale, *What’s The Deal with Super Mario 64’s “Shindou Pak Taiou” Version, Anyway?*, NINTENDOLIFE (Sept. 9, 2020), https://www.nintendolife.com/news/2020/09/feature_whats_the_deal_with_super_mario_64s_shindou_pak_taiou_version_anyway [<https://perma.cc/8WWU-EBNP>]. Another example of a rerelease falling short of meeting consumer expectations is the *Super Mario 3D All-Stars*, a compilation of critically acclaimed 3D entries of the Super Mario franchise on the Nintendo Switch, among which is *Super Mario 64*. The version included in the collection was the “Shindou” version, which made several adjustments in the game including correcting several exploits that could be used to complete the game in an extremely short amount of time compared to a typical playthrough. The community of speedrunners (players who try to complete a game in as short a time as possible) use earlier versions of the game, where those exploits still exist. Because the version in the collection is not the desired version, many speedrunners without access to the physical N64 consoles and a *Super Mario 64* cartridge must turn to emulation.

⁶¹ *See id.*

⁶² Stan Karas, *Sony Computer Entertainment, Inc. v. Connectix Corp.*, 16 BERKELEY TECH. L.J. 33, 51 (2001).

⁶³ *Id.* at 51 (explaining that not only do manufacturers of the original consoles usually have greater resources than most emulation developers, but they have no need “to engage in the time-consuming and imperfect process of reverse engineering. With full access to both the source and object code

In this context, emulators also contribute to the appeal of developers like Nintendo to produce remakes and remastered games. By revealing a viable market of players seeking to reexperience games on updated hardware and software, emulators demonstrate the demand for accessible, improved versions of older titles.⁶⁴ This demand encourages developers to market remakes not only as a means of accessibility but as opportunities to deliver enhanced experiences that surpass the limitations of their original release.⁶⁵ The industry-wide response to emulation parallels past shifts in the music and film industries, where new technologies initially clashed with copyright holders' interests before being integrated into business models.⁶⁶ Similarly, the rise of emulation pressures video game developers to adapt their approaches, balancing copyright enforcement with the opportunity to capitalize on consumer interest in classic titles.⁶⁷

As the gaming industry continues to evolve, the tension between preservation and copyright enforcement remains a defining challenge. Nintendo is an example of how rights holders leverage copyright protection to exert control over access to their intellectual property, prioritizing their commercial interests in legacy content.⁶⁸ While initiatives like NSO and the practice of remastering older titles address consumer demand to a degree, they fall short of providing the comprehensive access consumers seek.⁶⁹ At the same time, the evolving role of emulation highlights the potential for new technologies to drive market innovation and expand accessibility, even if it challenges traditional copyright enforcement.⁷⁰ By examining these dynamics, it becomes clear that the legal and technological frameworks surrounding video games must adapt to better reconcile competing interests, ensuring that cultural and historical preservation is not left at odds with commercial interests.

of the original, original developers can improve the quality of emulator products.”).

⁶⁴ Conley et al., *supra* note 7, at 10 (“[E]mulators often add features absent in the real console, such as the ability to ‘fast forward’ the game or save the state of the game so that it can be resumed in midstream” as well as enabling “translation of games into foreign languages” which gives developers real competition to make improvements when re-releasing games).

⁶⁵ *Id.* at 8.

⁶⁶ *Id.* at 2.

⁶⁷ *Id.*

⁶⁸ See *infra* Part II.B.

⁶⁹ See Conley et al., *supra* note 7.

⁷⁰ *Id.* (explaining that emulators not only reveal consumer demand for older games but also pressure developers to explore ways of delivering high-quality experiences that preempt third-party alternatives).

PART II: LEGAL PRECEDENTS SHAPING THE BATTLE OVER EMULATION

A. Legitimizing “Reverse Engineering” Under Fair Use

Three cases that are often cited as holding that the development of emulators may be legal under copyright law are *Atari Games Corp. v. Nintendo of America, Inc.* (Federal Circuit 1992),⁷¹ *Sega Enterprises Ltd. v. Accolade Inc.* (9th Circuit 1992),⁷² and *Sony Computer Entertainment v. Connectix Corp.* (9th Circuit 2000).⁷³ In these cases, the courts applied the fair use doctrine based on the underlying rationale that a finding of copyright infringement “would stifle the very creativity which that law is designed to foster.”⁷⁴ Under fair use, four factors are weighed together equally,⁷⁵ and as is principal to copyright law, copyright protection is limited to the expression of a particular work rather than the underlying ideas embodied within it.⁷⁶

The following cases in particular contextualize emulation within the process of reverse engineering—the process of disassembling a finished product to uncover its functional components.⁷⁷ In software, reverse engineering involves decompiling the object code, in which software is distributed and translating it into source code, which programmers use to understand the functional elements of the program.⁷⁸ Certain methods of reverse engineering, such as simply reading about the program, are ineffective for the purposes of understanding code, while more direct methods, which require that a copyrighted program be copied into the user’s computer, may be actionable under copyright if unauthorized.⁷⁹ Thus, the issue turns to whether “the purpose of deciphering functional elements of the program falls within the fair use defense.”⁸⁰

⁷¹ *Atari Games Corp. v. Nintendo of Am., Inc.*, 975 F.2d 832 (Fed. Cir. 1992).

⁷² *Sega Enterprises Ltd. v. Accolade Inc.*, 977 F.2d 1510 (9th Cir. 1992).

⁷³ *Sony Comput. Ent., Inc. v. Connectix Corp.*, 203 F.3d 596 (9th Cir. 2000).

⁷⁴ *See* *Campbell v. Acuff-Rose Music, Inc.*, 510 U.S. 569, 577 (1994).

⁷⁵ *Id.* at 578; *see* 17 U.S.C. § 107. Again, the four factors are: (1) the purpose and character of the use, (2) the nature of the work being used, (3) the amount and substantiality of the work being used, and (4) the use’s effect on the market.

⁷⁶ *See* 17 U.S.C. § 102(b). The Act does not protect “any idea, procedure, process, system, method of operation, [or] concept . . .”; Karas, *supra* note 62 at 35 (“The unique position of computer code within the range of copyrightable material requires a unique approach to the determination of infringement.”).

⁷⁷ Karas, *supra* note 62, at 35.

⁷⁸ Greg Weiner, *Reverse Engineering as a Method of Achieving Compatibility in the Computer Industry*, 6 U. BALT. INTELL. PROP. J. 1, 2 (1997).

⁷⁹ *Sony Comput. Ent., Inc. v. Connectix Corp.*, 203 F.3d 596, 599 (9th Cir. 2000) (citing Andrew Johnson-Laird, *Software Reverse Engineering in the Real World*, 19 U. DAYTON L. REV. 843, 846 (1994)) (stating that reverse engineering of software takes many forms, including (1) reading about the program, (2) observing “the program in operation by using it on a computer,” (3) performing a “static examination of the individual computer instructions contained within the program,” and (4) performing a “dynamic examination of the individual computer instructions as the program is being run on a computer.”).

⁸⁰ Karas, *supra* note 62, at 36.

*Atari v. Nintendo*⁸¹ sets an early precedent for the legal boundaries of reverse engineering and third-party development in the video game industry. Examining the case through a historical lens helps place it in context with the contemporary issues of emulation. As the developers of the Atari 2600, a home video game console released in 1977,⁸² Atari Games Corp. (“Atari”) dominated the North America home console market in the late 1970s and early 1980s.⁸³ However, this success was drastically affected by the video game crash of 1983, caused by an influx of third-party video games flooding the market.⁸⁴ For Atari, this challenge arose from Activision, a rival company formed by former Atari employees.⁸⁵ Atari sued Activision in 1980, alleging that its former employees had committed copyright and patent infringement, which violated non-disclosure agreements and misappropriated trade secrets.⁸⁶ The lawsuit was settled out of court in 1982, with Activision agreeing to pay royalties to Atari.⁸⁷ However, Atari’s inability to block Activision from producing games for its consoles in that lawsuit ultimately legitimized the ability of third-party developers to create new games for existing consoles produced by other companies.⁸⁸

Nintendo entered the North American console market in 1985 with the NES.⁸⁹ To prevent an influx of third-party games from affecting its own console, Nintendo created a proprietary “lockout” chip called the “10NES” system (“lockout system”), which prevented game cartridges that did not have an authorized key from being playable on the NES.⁹⁰ While Nintendo issued Atari a license to produce certain games on the NES, Atari’s abilities to produce those games and access Nintendo’s technology were limited.⁹¹ Seeking to overcome the license’s limitations,

⁸¹ See *Sony*, 203 F.3d at 598.

⁸² Jamie Lendino, *The Atari 2600 at 45: The Console that Brought Arcade Games Home*, PC MAG. (Sept. 10, 2022), <https://www.pcmag.com/opinions/atari-2600-console-brought-arcade-games-home> [<https://perma.cc/2W7E-MFJN>] (explaining that the Atari 2600 was one of the most popular early home consoles and revolutionized gaming with interchangeable cartridges to bring arcade-hits like *Space Invaders* into households).

⁸³ Valeriy Bagrintsev, *Activisionaries: The Four Programmers Who Revolutionized the Gaming Industry*, CONSOLE CLASSICS (Sept. 16, 2024), <https://console-classics.com/retrogaming/activisionaries-the-four-programmers-who-revolutionized-the-gaming-industry/> [<https://perma.cc/LT79-H288>].

⁸⁴ *Id.*

⁸⁵ *Id.*

⁸⁶ Jeffrey Fleming, *The History of Activision*, GAMEDEVELOPER, (July 30, 2007), <https://www.gamedeveloper.com/business/the-history-of-activision> [<https://perma.cc/5VR5-KVD6>].

⁸⁷ Bagrintsev, *supra* note 83.

⁸⁸ *Id.*

⁸⁹ *Nintendo Entertainment System Video Game Console*, SMITHSONIAN INST., https://www.si.edu/object/nintendo-entertainment-system-video-game-console%3Anmah_1436726 [<https://perma.cc/ZNN7-BX4J>] (last visited Feb. 9, 2025).

⁹⁰ *Atari Games Corp. v. Nintendo of Am., Inc.*, 975 F.2d 832, 836 (Fed. Cir. 1992).

⁹¹ *Id.* (“Under the license, Nintendo would take Atari’s games, place them in cartridges containing the 10NES program, and resell them to Atari. Nintendo limited all licensees, including Atari, to five new NES games per year.”).

Atari independently replicated the lockout system's object code to create the "Rabbit program," capable of "unlocking" the NES.⁹²

After Nintendo filed suit in the Northern District of California alleging copyright infringement and related claims arising from Atari's replication of the 10NES lockout system, the district court granted a preliminary injunction barring Atari from further use of the Rabbit program, which the Federal Circuit subsequently reviewed and affirmed on appeal.⁹³ The Federal Circuit ultimately upheld a preliminary injunction preventing Atari's alleged infringement of Nintendo's object code and exploitation of the lockout program's copyright.⁹⁴ According to the court, Nintendo sufficiently showed their program contained protectable expression; therefore, Atari's Rabbit "substantially similar" program was an unauthorized reproduction of the lockout chip.⁹⁵ Furthermore, because Nintendo did not authorize Atari's possession of the object code of the lockout chip, the court found Atari's reverse engineering defense inapplicable.⁹⁶ This case emphasizes the importance of authorized access in reverse engineering, setting a significant precedent for how courts evaluate fair use claims in software-related disputes.

Following the foundational principles established in *Atari v. Nintendo*, *Sega v. Accolade* further clarified the role of reverse engineering in fostering competition and consumer access in the games industry.⁹⁷ This case involved a dispute between Sega Enterprises (Sega), the developer of the Genesis console and its respective game cartridges, and Accolade, Inc. (Accolade), the manufacturer of certain game software which included cartridges compatible with Sega's Genesis III.⁹⁸ In 1989, Accolade, by reverse engineering⁹⁹ Sega's game cartridges, was able to recreate the video display microprocessor in the Genesis III.¹⁰⁰ In 1990, Accolade subsequently announced a new game release for the console.¹⁰¹ After discovering the new game would be unplayable due to Sega's "trademark security system" ("TMSS" or "security system")¹⁰² at

⁹² *Id.* at 836–37.

⁹³ *Id.* at 837.

⁹⁴ *Id.* at 847.

⁹⁵ *Id.* at 844–45.

⁹⁶ *Id.* at 842–44.

⁹⁷ *Sega Enterprises Ltd. v. Accolade Inc.*, 977 F.2d 1510 (9th Cir. 1992).

⁹⁸ *Id.* at 1514.

⁹⁹ *Id.* at 1515. Accolade's reverse engineering process involved wiring a decompiler into the console's circuitry and generating printouts of the output source code, which were studied and experimented on by engineers to determine the requirements for a game to be compatible with the Genesis III console.

¹⁰⁰ *Id.*

¹⁰¹ *Id.* at 1516.

¹⁰² *Id.* The TMSS functioned similarly to Nintendo's 10NES lockout system, except when it accepted a game as having the valid code, it would display a message reading "PRODUCED BY OR UNDER LICENSE FROM SEGA ENTERPRISES LTD" and included the Sega logo.

the Consumer Electronics show in 1991, Accolade performed a second round of reverse engineering to copy the security system code to include it in its video game software.¹⁰³ After Accolade produced several Genesis-compatible games which were marketed with Sega's trademarks, Sega filed suit alleging trademark infringement, later amended to include a claim for copyright infringement, on which it prevailed.¹⁰⁴ Ultimately, the Ninth Circuit overturned the preliminary injunction entered in favor of Sega for Accolade's reverse engineering of the Genesis III's security system.¹⁰⁵ Acknowledging that the underlying purpose of the Copyright Act is to encourage the production of creative works for the public good by protecting the rights of an author or copyright owner, the court held that the Accolade's use of reverse engineering constituted fair use of Sega's copyrighted code.¹⁰⁶ The court agreed with Accolade's assertions that "disassembly is the only means of gaining access to [the] unprotected aspects of the program" and that they had a "legitimate interest in gaining such access" to determine how to make its cartridges compatible with the Genesis console.¹⁰⁷ Considering the limited copyright protection of the software, the court held that the "copying of an entire program is permissible if it is 'the only means of gaining access to . . . unprotected aspects of the program.'"¹⁰⁸

The Ninth Circuit clarified this holding in *Sony v. Connectix*,¹⁰⁹ in relation to the Sony PlayStation and Connectix's Virtual Game Station ("VGS") emulation software. The VGS was intended to be a PlayStation emulator, and thus needed to emulate both the PlayStation hardware and

¹⁰³ *Id.* After copying the code to its own games, the "PRODUCED BY OR UNDER LICENSE FROM SEGA ENTERPRISES LTD" message was displayed before playing Accolade's games despite not being produced under license by Sega, which Accolade admitted to be false.

¹⁰⁴ *Id.*

¹⁰⁵ *Id.* at 1517.

¹⁰⁶ *Id.* at 1520.

¹⁰⁷ *Id.* (finding that computer programs are in essence utilitarian articles, and thus the amount of creative expression in its software are limited by its function purpose). While Accolade prevailed on the grounds of fair use, it also argued that 17 U.S.C. § 117(1), which allows the lawful owner of a copy of a computer program to copy or adapt the program if the new copy or adaption "is created as an essential step in the utilization of the computer program in conjunction with a machine and . . . is used in no other manner," authorized them to disassemble the object code in copyrighted software. However, the court ultimately found that Accolade's assertion was not contemplated to be within the purpose of § 117, as it does not "purport to protect a user who disassembled object code, converts it from assembly into source code, and makes printouts and photocopies of the refined source code version." *Id.*; see also *Intellectual Property & Piracy FAQ*, NINTENDO OF AM., https://en-americas-support.nintendo.com/app/answers/detail/a_id/55888/~intellectual-property-%26-piracy-faq#s2q4 [<https://perma.cc/29TK-NA6L>] (last visited Oct. 5, 2024) (asserting the § 117 backup exception does not apply when a user backups a copy of a video game ROM as "[v]ideo games are comprised of numerous types of copyrighted works and should not be categorized as software only" and thus categorically fall outside of the backup/archival exception).

¹⁰⁸ Karas, *supra* note 62, at 43 (quoting *Sega*, 977 F.2d at 1510). Accolade was even able to overcome Sega's trademark claim, as the Court found that any resulting trademark confusion caused by the display of Sega's message was the result of the mandatory security system needed to access unprotected functional code. *Sega*, 977 F.2d at 1528.

¹⁰⁹ *Sony Comput. Ent., Inc. v. Connectix Corp.*, 203 F.3d 596, 598 (9th Cir. 2000).

its internal firmware, known as the Basic Input/Output System (BIOS).¹¹⁰ In its reverse engineering process, Connectix had its engineers repeatedly copy Sony's BIOS software onto their computers to study how it worked in conjunction with the VGS software, which was designed to emulate PlayStation hardware.¹¹¹ Sony then filed a complaint alleging copyright infringement and other causes of action against Connectix, and subsequently moved for a preliminary injunction to enjoin Connectix from continuing to copy and use Sony's BIOS software in the continued development of the VGS for Windows, and from selling it on any platform.¹¹² After the district court ruled in favor of Sony, the Ninth Circuit reversed, determining that the intermediate copies of the BIOS software made and used by Connectix in the reverse engineering process was protected under fair use, as it was necessary to allow it to develop the VGS software to function with Sony's PlayStation software, concluding that the use was non-infringing and transformative.¹¹³

The decision in *Sony* was heavily reliant on the "judicial endorsement of reverse engineering as a legitimate method of getting to the functional elements contained in computer object code" in *Sega*.¹¹⁴ *Sony* in particular illustrates the significant divide between users' interests in emulator availability and the developers' role in meeting that demand by emphasizing the importance of transformative uses in expanding consumer choice while navigating the boundaries of copyright law.¹¹⁵ The result of these cases is that smaller software companies are able to explore untapped markets where larger corporations are reluctant to invest in new platforms or technologies.¹¹⁶ Considering those aspects

¹¹⁰ *Id.* (noting that Sony specifically had a copyright on the BIOS software); *see id.* at 601 (noting that Connectix actively marketed the VGS as a "PlayStation emulator" at a convention showcasing technology for Macintosh computers, with its marketing materials stating that the VGS "permits users to play 'their favorite PlayStation games' on a computer 'even if you don't yet have a Sony PlayStation console.'").

¹¹¹ *Id.* at 601 (noting that representatives from both Sony and Connectix met during the development of the VGS, though Sony declined Connectix's request for assistance).

¹¹² *Id.*

¹¹³ *Id.* at 609–10; Karas, *supra* note 62, at 43–44 (explaining that the court refused to apply a strict necessity test for fair use in reverse engineering case, acknowledging caution in the court's role "in assessing complex technologies" and the court's "inability to create lasting legal tests for rapidly developing industries.").

¹¹⁴ Karas, *supra* note 62, at 43, 51–52 (concluding that the Ninth Circuit's analysis of fair use's four factors was justified as to the first three, considering software as utilitarian programs are owed lesser copyright protections, but unconvinced that the VGS was not transformative enough to compel a finding of fair use under the fourth factor given that the emulator was used for the same intrinsic purpose as the PlayStation based on its "functional identity.").

¹¹⁵ *Sony*, 203 F.3d at 599 (noting that the VGS does not play PlayStation games as well as the original console).

¹¹⁶ *See Sony Comput. Ent., Inc. v. Connectix Corp.*, 48 F. Supp. 2d 1212, 1214 (N.D. Cal. 1999) (stating that Sony spent over \$600 million developing the PlayStation); *see also Sony*, 203 F.3d at 601; Karas, *supra* note 62, at 39 (stating that Connectix spent approximately \$150,000 developing the VGS, a relatively cheap price compared to creating and developing a brand-new and cutting-edge console).

of these decisions, companies like Nintendo can adapt by embracing emulation as a part of their strategy; by responding to customer demand and innovating around the emulation phenomenon, companies can protect their IP while fostering goodwill and expanding their reach.¹¹⁷

B. Nintendo's Contemporary Lawsuits Against Emulators

Nintendo's contemporary lawsuits against emulators illustrate its strategic shift toward combating not only emulator developers, but also the sources that enable their use, such as ROM distribution sites and circumvention devices. By targeting these associated activities, Nintendo seeks to assert its intellectual property rights and control over its gaming ecosystem. This section explores key cases that demonstrate how Nintendo has employed legal tactics to limit the proliferation of emulators and protect its market.

i. ROM Distributors: RomUniverse.com and LoveROMs

Emulators alone are ineffective without the games they aim to emulate. Thus, while emulators themselves may be legal, part of the battle against emulation involves preventing users from gaining access to these games. Games are accessible on ROM sites, which serve as the primary method for distributing games for emulators.¹¹⁸

A notable example of this effort is Nintendo's lawsuit against LoveROMs.com and its sister-site LoveRETRO.com, (collectively "LoveROMs").¹¹⁹ The complaint characterized the two sites as "among the most open and notorious online hubs for pirated video games," apparently generating over 17 million visitors per month on the LoveROMs.com site alone,¹²⁰ and generating substantial revenue through advertising and revenue requests.¹²¹ Nintendo accused the defendant owners and operators of hosting thousands of unauthorized Nintendo games, BIOS software, musical works, and other copyrighted content, and prominently displaying Nintendo trademarks, such as its logo and iconic characters like Mario, to attract visitors.¹²²

¹¹⁷ Conley et al., *supra* note 7 at 4, 14–16 (suggesting that developers oppose emulation as it undermines planned obsolescence, controlled user experience and software sales, and potential revenue losses); *id.* at 19–20 (pointing to brand dilution and copyright infringement as reasons for not supporting consumer demand for emulation).

¹¹⁸ Conley et al., *supra* note 7, at 5.

¹¹⁹ Complaint, Nintendo of Am., Inc. v. Mathias, No. 18-cv-02282 (D. Ariz. 2018).

¹²⁰ *Id.* ¶¶ 1, 38.

¹²¹ *Id.* ¶ 38.

¹²² *Id.* ¶ 29. An archive of the original loveroms.com website can be found online, notably using a background in reference to Nintendo's Super Mario Bros. games while claiming to provide "a simple and intuitive way to download video game ROMs, with a touch of love[.]" LOVEROMS, <https://web.archive.org/web/20170823082042/http://www.loveroms.com/> [https://perma.cc/Y4E2-H8L5].

In its complaint, Nintendo argued that the defendants actively uploaded and maintained the infringing content, citing specific promotional announcements, including one declaring, “The complete Nintendo DS Collection has been uploaded, 5,000+ ROMs now readily available!”¹²³ The lawsuit concluded in a settlement, with the operators of LoveROMs agreeing to pay Nintendo \$12,230,000 in damages. Additionally, they were enjoined from operating the two sites, further engaging in any infringing activities, and ceasing all operations of any websites “which involve Nintendo materials.”¹²⁴

Another example of a lawsuit against these ROM websites was Nintendo’s case against ROMUniverse.com,¹²⁵ where Nintendo alleged direct, contributory, and vicarious copyright infringement due to the unauthorized copying and distribution of its games through the hosting of ROM files on the website and the displaying of each respective game’s box art image on individual download pages.¹²⁶ The defendant owner and operator of the site denied responsibility and defended the website, claiming that he had not personally uploaded any infringing files or verified the content that was uploaded to the website; that claim was later contradicted by the defendant’s own deposition testimony, in which he admitted to personally uploading ROM files to the website.¹²⁷

In defending against the secondary liability claims, the site owner was unsuccessful in invoking the Digital Millennium Copyright Act’s (DMCA) safe harbor provisions, which shield qualifying service providers from liability for user-generated content under specific conditions.¹²⁸ The court rejected this argument, finding that the website

¹²³ Complaint, *supra* note 119, ¶ 36.

¹²⁴ *Id.*; Order and Permanent Injunction at 4, *Mathias*, No. 18-cv-02282; Final Judgment at 1, *Mathias*, No. 18-cv-02282; see Owen S. Good, *Nintendo Reaches Settlement Shutting Down ROM Hosts for Good*, POLYGON (Nov. 15, 2018), <https://www.polygon.com/2018/11/15/18097081/nintendo-rom-lawsuit-loveroms-loveretro-emuparadise> [<https://perma.cc/JD6J-6CHP>]. An archive of LoveROMs’ message left for visitors of the site after its shutdown can be seen online. *Apology to Nintendo*, LOVEROMS.COM (Nov. 15, 2018, at 00:58 UTC), <https://archive.ph/rllXG> [<https://perma.cc/HQ8L-95PS>].

¹²⁵ *Nintendo of Am., Inc. v. Storman*, No. 19-CV-7818, 2021 WL 4780329 (C.D. Cal. 2021); ROMUNIVERSE, <https://web.archive.org/web/20190912000424/https://www.romuniverse.com/> [<https://perma.cc/2EM8-ML7Z>] (last visited Nov. 2, 2025). The ROMUniverse website background is of a similar design to that of LoveROMs, reminiscent of classic Super Mario Bros. games, and boasts “60,000 Roms” and “375,000 Members.”

¹²⁶ *Storman*, 2021 WL 4780329, at *2; Complaint, *Storman*, *supra* note 125, ¶ 1 (alleging that ROMUniverse.com was “among the most visited and notorious online hubs for pirated Nintendo video games.”).

¹²⁷ *Storman*, 2021 WL 4780329, at *2 n.1.

¹²⁸ 17 U.S.C. § 512(a)(1–4) (providing that service providers are immune from copyright infringement for: (1) transitory digital network communications; (2) system caching; (3) information residing on systems or networks at the direction of users; and (4) information location tools); 17 U.S.C. § 512(k) (defining a service provider as “an entity offering the transmission, routing, or providing of connections for digital online communications, between or among points specified by a user, of material of the user’s choosing, without modification to the content of the material as sent or received.”).

did not qualify as a service provider under the DMCA,¹²⁹ nor would it apply because the ROMs were not stored “at the direction of a user.”¹³⁰ According to the court, even if the website did qualify as a service provider, the defendant was engaged in marketing the website by offering unlimited downloads of “1000s of game [ROM]s, movies, [ISO]s, and e[B]ooks” for a \$30 premium subscription price.¹³¹

In light of the clear and overwhelming evidence, the California District Court concluded that there was no genuine dispute of material fact regarding the defendant’s knowledge and contribution to the infringing activity on his website.¹³² While the court granted summary judgment in Nintendo’s favor, awarding \$1,715,000 in copyright damages and an additional \$400,000 for trademark violations, it declined to issue the permanent injunction Nintendo sought to prevent further infringement.¹³³ The court reasoned that there was no ongoing threat to Nintendo’s copyrights because during the course of the lawsuit, the defendant had already abandoned the website and ceased its operations.¹³⁴

The key takeaway from these cases is the possible deterrent effect they have on ROM distribution.¹³⁵ The rapid closure of LoveROMs after the filing of Nintendo’s lawsuit is evidence of the company’s ability to intimidate smaller operators, forcing them offline even before the court can issue its ruling.¹³⁶ This reflects Nintendo’s powerful strategy of leveraging the strength of its brand to intimidate those involved in emulation piracy, and convince the court that enforcement of its copyright is justified because of its position in the industry.¹³⁷ Nintendo’s

¹²⁹ *Storman*, 2021 WL 4780329, at *3 (finding there was no evidence that the defendant complied with the statute’s notification and policy requirements or acted on any takedown requests).

¹³⁰ *Id.*; 17 U.S.C. § 512(c)(1)(B) (stating that service providers who store infringing material on their systems or network “at the direction of a user” are shielded from copyright liability if they “[do] not receive a financial benefit directly attributable to the infringing activity, in a case in which the service provider has the right and ability to control such activity.”).

¹³¹ *Storman*, 2021 WL 4780329, at *4 (noting that the advertisement explicitly referenced Nintendo games released for the Switch, Wii, and 3DS, who were the website’s primary audience).

¹³² *Id.*

¹³³ *Id.* (holding that the use of each game’s box art assets on the website and the display of other trademarks when the games are played after being downloaded from the website constitutes trademark infringement, of which there were 28 counts of willful infringement by the defendant).

¹³⁴ *Id.*; Kyle Orland, *ROM Site Owner Made \$30,000 a Year — Now Owes Nintendo \$2.1M*, ARS TECHNICA (June 1, 2021, at 12:14 ET), <https://arstechnica.com/gaming/2021/06/former-rom-site-owner-must-pay-2-1-million-to-nintendo/> [https://perma.cc/3PZA-34AF].

¹³⁵ *EmuParadise is Changing*, EMUPARADISE, <https://www.emuparadise.me/emuparadise-changing.php> [https://perma.cc/NZM3-AWZZ] (last visited Jan. 6, 2025) (showing a blog post published contemporaneously with the LoveROMs settlement stating, in relevant part, that the aspects of the website offering ROM downloads would cease, but the site would continue to offer downloads for emulators and community forums). Since the lawsuit, after being revived by a new owner, EmuParadise again offers ROM downloads but requires users to create an account to access each download page. EMUPARADISE, <https://www.emuparadise.me/> [https://perma.cc/2TGL-HZG7] (last visited Jan. 6, 2025).

¹³⁶ See *EmuParadise is Changing*, *supra* note 135.

¹³⁷ For an example of the typical language employed by Nintendo to leverage its position in the

enforcement practices may be justified given the massive and blatant infringement of its intellectual property, but their practices also reveal how the company has chosen to aggressively defend its market position.

ii. Cease-and-Desists: Dolphin, Project Slippi, and More

In addition to formal lawsuits, Nintendo also uses cease-and-desist letters to control emulation activities. These letters are a powerful tool to exert pressure on smaller operators and prevent the proliferation of emulation software, even when litigation is not involved.¹³⁸ Often, these letters aim to induce compliance by threatening the risk of legal action and significant financial penalties in the form of large-sum damage rewards.¹³⁹ Nintendo's strategic use of these letters allows it to address non-compliant websites before they can gain significant traction.¹⁴⁰

One notable instance of Nintendo's intervention in emulation activities involves the Dolphin emulator, an open-source emulator for Nintendo's GameCube and Wii consoles.¹⁴¹ While Nintendo has not directly challenged Dolphin's operations as an emulator, likely recognizing its legality as an emulation software created via reverse engineering,¹⁴² Nintendo has taken action by invoking the DMCA's Anti-Circumvention¹⁴³ and Anti-Trafficking provisions via a cease and desist

industry, see Complaint, *Nintendo of Am., Inc. v. Mathias*, No. 18-cv-02282 ¶ 14 (D. Ariz. 2018) ("For decades, Nintendo has been a leading developer and producer of video games and video game systems. In 1985, Nintendo released the Nintendo Entertainment System or 'NES,' which introduced millions of consumers to now-classic games like Super Mario Bros., Super Mario Bros. 3, The Legend of Zelda, and Donkey Kong. The NES console also introduced millions of consumers to some of Nintendo's most beloved characters, including Mario and Luigi, Link, and Samus Aran. Over the ensuing decades, Nintendo followed up the success of the NES console with the release of such groundbreaking home video game consoles as Super Nintendo Entertainment System (or 'SNES'), Nintendo 64 (or 'N64'), Nintendo GameCube, Wii, Wii U, and Nintendo Switch.").

¹³⁸ Paul Murty, *Nintendo Faces Backlash Over Cease & Desist Letters*, SMITH & HOPEN (Dec. 8, 2020), <https://smithopen.com/2020/12/09/nintendo-faces-backlash-over-cease-desist-letters/> [<https://perma.cc/9C5N-6T27>].

¹³⁹ Matthew Davis, *Cease and Desist Letter Guide: Purpose, Timing, and FAQs*, DAVIS BUS. L. (Nov. 15, 2023), <https://davisbusinesslaw.com/cease-and-desist-letter-guide/> [<https://perma.cc/5TPM-DCB4>].

¹⁴⁰ Murty, *supra* note 138.

¹⁴¹ See DOLPHIN, <https://dolphin-emu.org/> [<https://perma.cc/ZR3B-PG36>] (last visited Jan. 3, 2025) (describing that the Dolphin software "allows PC gamers to enjoy games for [the GameCube and the Wii] in full HD . . . with several enhancements" such as compatibility with controllers, turbo speed, and networked multiplayer. A text box at the top of the webpage also states, "[o]ur mission is to preserve video games.").

¹⁴² See *supra* Part II.

¹⁴³ 17 U.S.C. § 1201(a)(1) ("No person shall circumvent a technological measure that effectively controls access to a work protected under this title."); see also 17 U.S.C. § 1201(b) (providing additional violations for circumventing protection afforded by technological measures); U.S. COPYRIGHT OFF., SECTION 1201 OF TITLE 17: A REPORT OF THE REGISTER OF COPYRIGHTS 8 (2017), <https://www.copyright.gov/policy/1201/section-1201-full-report.pdf> [<https://perma.cc/JEC9-KWU6>] (stating that the purpose of DMCA § 1201(a)(1)(A) was to establish a new legal protection for copyright owners against the circumvention of technological prevention measures ("TPMs") which controlled access to their works, a feature which was required by the WIPO Internet Treaties).

letter it sent to Dolphin.¹⁴⁴ Both provisions were referenced in a second letter sent to Valve Software, the operator of the Steam platform, which demanded that Valve prevent Dolphin from being made available for download and distribution on Steam.¹⁴⁵ Compliance with Nintendo's demand would prevent Dolphin from being distributed through Steam, thereby cutting off access to platform-level features that facilitate ongoing development and broad user access.¹⁴⁶ One example is RetroArch, an emulator frontend distributed through Steam that supports modular emulation across multiple console systems and demonstrates how platform-based distribution can facilitate updates, consistency of features, and community-driven enhancements.¹⁴⁷

Similarly to the 10NES lockout system in the *Atari v. Nintendo* case, this dispute involved Dolphin's use of an authorization code, referred to as the "Wii Common Key," which is required to play game discs on a Wii console.¹⁴⁸ Dolphin claims that because "only a small fraction of what [Dolphin] do[es] involves circumvention" and because it is "circumventing Wii disc encryption for interoperability¹⁴⁹ with Wii software," it is subject to the DMCA's interoperability exception.¹⁵⁰ However, despite apparent confidence in the justified existence of the emulator, Dolphin wrote a blog post regarding the incident in which it conceded that, "[i]n the end, Valve is the one running the Steam store

¹⁴⁴ 17 U.S.C. § 1201(a)(2) (limiting the creation, distribution, or marketing of tools primarily designed to bypass DRM or other access controls on copyrighted works).

¹⁴⁵ According to the Dolphin team, Nintendo's letter to Valve stated "[w]e specifically request that Dolphin's 'coming soon' notice be removed and that you ensure the emulator does not release on the Steam store moving forward." *What Happened to Dolphin on Steam?*, DOLPHIN (July 20, 2023, at 10:18 ET), <https://dolphin-emu.org/blog/2023/07/20/what-happened-to-dolphin-on-steam/> [<https://perma.cc/28XT-S2Y7>] [hereinafter *Dolphin Blogpost*].

¹⁴⁶ *Advantages of Using Steam for PC Game Distribution*, JUEGO STUDIOS (Dec. 26, 2024), <https://www.juegostudio.com/blog/advantages-of-using-steam-for-pc> [<https://perma.cc/E2DV-45JT>] (explaining other benefits of the Steam platform including ease-of-use features like pushing automatic updates and cloud-syncing).

¹⁴⁷ See, e.g., RETROARCH, <https://www.retroarch.com/> [<https://perma.cc/CT5C-P73A>] (last visited Nov. 10, 2024) (showing the storepage of a software called RetroArch, describing it as a frontend application supporting multiple video game console emulators through downloadable "cores" enabling users to run and manage emulation for different systems within a single, consistent software environment).

¹⁴⁸ *Dolphin Blogpost*, *supra* note 145.

¹⁴⁹ *Id.*; Lisa Rapp, *What Is Interoperability? Definition, Importance & Benefits*, LIVERAMP (July 20, 2023), <https://liveramp.com/blog/what-is-interoperability-why-it-matters/> [<https://perma.cc/BR3L-UPY2>] (defining interoperability as the ability of different systems, devices, and/or software to work together and exchange information seamlessly). Here, Dolphin is, in essence, arguing that the circumvention of Wii disc encryption is necessary to enable the Wii software to function on different hardware, thereby qualifying for the DMCA's interoperability exception.

¹⁵⁰ 17 U.S.C. § 1201(f) (providing that "a person may develop and employ technological means to circumvent a technological measure, or to circumvent protection afforded by a technological measure, in order to enable the identification and analysis under paragraph (1), or for the purpose of enabling interoperability of an independently created computer program with other programs, if such means are necessary to achieve such interoperability, to the extent that doing so does not constitute infringement under this title."); *Dolphin Blogpost*, *supra* note 145.

front, and they have the right to allow or disallow anything they want on said store front for any reason.”¹⁵¹

While Dolphin’s developers maintain that they are protected by the DMCA’s interoperability exception,¹⁵² Nintendo’s action demonstrates how the company is willing to take aggressive action even against open-source projects that likely comply with certain legal exceptions, like the acceptance of reverse engineered emulators under fair use. Unlike the now-defunct ROM sites,¹⁵³ Dolphin distances its activities from Nintendo by stating on its frequently-asked-questions page that “Dolphin is not affiliated with Nintendo in any way,”¹⁵⁴ which includes a disclaimer denouncing the practice of downloading game files to use the platform, instead instructing users to dump¹⁵⁵ game discs they themselves own.¹⁵⁶ Nintendo’s actions to limit Dolphin illustrates the tension between emulation for preservation and Nintendo’s protection of its market interests. Although Dolphin is widely used for personal, non-commercial purposes and has a long history of providing a platform for players to enjoy classic titles, Nintendo’s refusal to tolerate circumvention of its DRM signals its prioritization of control over its intellectual property.

Fan remakes and modifications represent another significant area of contention.¹⁵⁷ While many of these projects are undertaken out of passion for preserving and revitalizing older games, they frequently face legal opposition from Nintendo. High-profile takedowns include the *Metroid*

¹⁵¹ *Dolphin Blogpost*, *supra* note 145 (claiming that “Dolphin is not primarily designed or produced for the purpose of circumventing protection” but is “designed to recreate the GameCube and Wii hardware as software, and to provide the means for a user to interact with this emulated environment.”).

¹⁵² See Rapp, *supra* note 149; JONATHAN BAND & MASANOBU KATOH, INTERFACES ON TRIAL 2.0 73–82 (Laura DeNardis & Michael Zimmer eds., MIT Press 2011).

¹⁵³ See *supra* Part II.B.i.

¹⁵⁴ *About Dolphin*, DOLPHIN, <https://dolphin-emu.org/docs/faq/> [<https://perma.cc/SEV6-N24E>] (last visited Jan. 3, 2025).

¹⁵⁵ In the context of game emulation, “dumping,” also called “ripping,” refers to the process of copying data from physical game media, such as cartridges, CDs, or DVDs, to create a digital file that can be used on a computer or other device). Dumping allows users to preserve games or play them on different platforms. However, doing so requires specific hardware and software tools to extract the game data accurately and legally. *Ripping Games*, EMULATION GEN.WIKI, https://emulation.gametechniki.com/index.php/Ripping_games [<https://perma.cc/6467-4UUG>] (last visited Jan. 3, 2025).

¹⁵⁶ See *About Dolphin*, *supra* note 154 (“Downloading commercial games is illegal and thus strongly frowned upon by the Dolphin developers. To prevent legal issues, this includes gray areas like downloading games which you purchased earlier. You don’t necessarily need to own a gaming console by yourself because you can buy a game disc and dump them with a friend’s console . . . [C]opying a friend’s game dump is considered illegal again.”). In addition to the disclaimer, the answer also instructs that to dump games with a Wii “you’ll want to install the homebrew channel and run an application like CleanRip” with a hyperlink to a CleanRip wiki-page. *Id.*

¹⁵⁷ Madeleine Higgs, *For the Love of the Game: Examining the Legality of Unofficial Fan Video Game Remakes*, 42 CARDOZO ARTS & ENT. L.J. 199 (2024) (examining the legal issues surrounding fan-made video game remakes to argue that remakes can promote cultural preservation for the benefit of both fans and the gaming industry, consistent with the congressional purpose of the Copyright Act).

II fan remake *AM2R*,¹⁵⁸ a fan remake of the classic *GoldenEye 007*,¹⁵⁹ and a modification of *Super Smash Bros. Brawl* called *Project M*,¹⁶⁰ all of which sought to modernize and expand upon existing works that were otherwise neglected by the company.

Another example is Project Slippi (Slippi),¹⁶¹ a modification of *Super Smash Bros. Melee* (Melee) designed to enable online play, which Nintendo targeted with cease-and-desist orders.¹⁶² Despite the mod's arguably transformative nature—enhancing a two-decade-old game with modern online capabilities¹⁶³—Nintendo's actions reflect its strict copyright enforcement, even in cases where fan projects fulfill demands left unaddressed by the company itself. *Melee*, released in 2001, has endured as a cornerstone of competitive esports,¹⁶⁴ but its lack of online functionality limited its accessibility in the modern gaming landscape. Slippi, launched in 2018, addressed this by enabling smooth online play and revitalizing the community¹⁶⁵—especially during the COVID-19 pandemic when in-person tournaments were not feasible.¹⁶⁶ Despite its transformative role, Nintendo issued a cease-and-desist order in 2020 against The Big House¹⁶⁷ tournament for using Slippi.¹⁶⁸

The broader implications of these takedowns reflect a direct tension between developers' interests in protecting their copyright and consumer-driven efforts to maintain accessibility. In particular, Nintendo's legal strategies reveal a preference for absolute control over its intellectual property rather than engaging with fan communities to foster goodwill engagement with its products and innovation. While protecting

¹⁵⁸ See Allegra Frank, *Metroid 2 Fan Remake Finally Released, Quickly Hit With Copyright Claims*, POLYGON (Aug. 8, 2016), <https://www.polygon.com/2016/8/8/12404100/metroid-2-fan-remake-am2r-copyright-claim> [https://perma.cc/2EK2-JPZF].

¹⁵⁹ Kris Holt, *A 'GoldenEye 007' Fan Remake is Dead After a Cease and Desist Demand*, ENGADGET (Aug. 11, 2020, at 12:33 EDT), <https://www.engadget.com/goldeneye-007-fan-remake-goldeneye-25-james-bond-163309378.html> [https://perma.cc/NPL8-A3UU].

¹⁶⁰ Jasmin Osman, *Super Smash Bros.: The History of Project M*, GAMERANT (Apr. 10, 2022), <https://gamerant.com/super-smash-bros-project-m/> [https://perma.cc/53K4-GTCC].

¹⁶¹ SLIPPI.GG, <https://slippi.gg/> [https://perma.cc/FV3A-X6S9] (last visited Feb. 9, 2025).

¹⁶² *Id.*

¹⁶³ Damian Majewski, *Videogame Streaming and Emulators — A Slippi Slope for Fair Use?*, 49 RUTGERS COMPUT. & TECH. L.J. 422 (2023) (arguing that while Nintendo's copyright claims may restrict streaming the use of Project Slippi under current copyright law, Slippi is sufficiently transformative of facilitating online play and accessibility so as to bring it under the protection of fair use).

¹⁶⁴ Robby Gee, *Why 'Super Smash Bros. Melee' Is the Game to Watch at Evo 2016*, VICE (July 7, 2016, at 14:00 ET), <https://www.vice.com/en/article/why-super-smash-bros-melee-is-the-game-to-watch-at-evo-2016-409/> [https://perma.cc/2HAF-WXZ9].

¹⁶⁵ Ricky Pusch, *Explaining How Fighting Games Use Delay-Based and Rollback Netcode*, ARS TECHNICA (Oct. 18, 2019, at 11:07 ET), <https://arstechnica.com/gaming/2019/10/explaining-how-fighting-games-use-delay-based-and-rollback-netcode/> [https://perma.cc/H597-UDPY].

¹⁶⁶ Majewski, *supra* note 163.

¹⁶⁷ *Id.*; *The Big House*, LIQUIPEDIA SMASH WIKI, https://liquipedia.net/smash/The_Big_House [https://perma.cc/MG5Y-YDNG] (last visited Feb. 9, 2025).

¹⁶⁸ The Big House (@TheBigHouse), X (Nov. 19, 2020, at 15:25 ET), <https://x.com/TheBigHouseSSB/status/1329521081577857036> [https://perma.cc/NRP6-MH4V].

proprietary content is a legitimate concern, a rigid approach to enforcement risks alienating dedicated fanbases and stifling efforts to the legacy of classic games.¹⁶⁹

iii. Aggressive Pursuit of Obvious and Harmful Infringement:
Circumvention Devices and Undermining the Market

Nintendo has also taken aggressive action against companies that sell circumvention devices—hardware designed to bypass security measures and facilitate piracy—which allow users to play pirated copies of games or run emulation software that otherwise would not be allowed by Nintendo’s systems.¹⁷⁰

In June 2024, Nintendo filed suit against the owner and operator of ModdedHardware.com, alleging that the company partakes in the selling of circumvention devices and offering services designed to bypass Nintendo’s technological protection measures (“TPMs”) on its Switch consoles and games in violation of the DMCA’s provisions prohibiting the trafficking of circumvention devices.¹⁷¹ According to Nintendo, Modded Hardware traffics devices like the “MiG Switch” and “MiG Dumper” which enables users to copy, distribute, and play pirated games on the Switch, effectively circumventing the Switch’s TPMs.¹⁷² The complaint also alleged a violation of the End User License Agreement (EULA) that governs the use of Switch consoles.¹⁷³

¹⁶⁹ Majewski, *supra* note 163.

¹⁷⁰ *Legal Information: Circumvention Devices*, NINTENDO, <https://www.nintendo.com/en-gb/Legal-information/Nintendo-s-Anti-Piracy-Programme/Hardware-Piracy/Circumvention-Devices/Circumvention-Devices-732247.html> [<https://perma.cc/C4XN-UCPL>] (last visited Nov. 8, 2024), (asserting that “[i]t is illegal to import, market, sell or distribute circumvention products (such as piracy cartridges, game copiers, USB piracy sticks, and mod chips) . . .” and notifying consumers that damages caused by the use of circumvention devices use are not covered by the company’s warranty).

¹⁷¹ Complaint & Demand for Jury Trial ¶¶ 21–23, *Nintendo of Am. Inc. v. Daly*, No. 24-CV-00958 (W.D. Wash. June 28, 2024). Nintendo’s TPMs function in the same way as the security measures involved in *Atari*, *Sega*, and *Sony*, acting as console-level authenticational checks (console TPM) and game-specific encryption protocols (game TPM) that prevent unauthorized access to its system such as preventing pirated games from being played on Switch consoles or preventing the console from operating altogether.

¹⁷² *Id.* ¶ 2. Modded Hardware also sells mod-chips which bypass other security features of the Switch and hacked consoles preloaded with unauthorized copies of Nintendo games. Modded Hardware also offers a mail-in service to install these mod-chips and circumvention software on Switch consoles. *Id.*

¹⁷³ *Id.* ¶ 7 (d). Nintendo’s EULA for the Switch and its various models provides under Section 1:

The Software is licensed, not sold, to you solely for your personal, noncommercial use on the Console. You may not publish, copy, modify, reverse engineer, lease, rent, decompile, disassemble, distribute, offer for sale, or create derivative works of any portion of the Software, or bypass, modify, defeat, tamper with, or circumvent any of the functions or protections of the Console, unless otherwise permitted by law. Content obtained through the use of an unauthorized device, or through the unauthorized modification of Console hardware or software, may be removed. You agree not to use the Console in an unlawful manner or to access the consoles, devices, accounts, or data of others (including Nintendo) without their (or our) consent.

Nintendo Switch: User Agreement, NINTENDO, <https://en-americas-support.nintendo.com/app>

Similarly, on February 26, 2024, Nintendo filed suit against Tropic Haze LLC, the company behind the Yuzu and Citra emulators for the Switch and 3DS, respectively.¹⁷⁴ The complaint alleged that Tropic Haze LLC facilitated widespread piracy, pointing to the illegal distribution of over one million copies of *The Legend of Zelda: Tears of the Kingdom* (“TOTK”) before its official release on May 12, 2023.¹⁷⁵ Nintendo further alleged that Tropic Haze circumvented its TPMs to make unauthorized copies of its games for use on its emulators, as well as providing on its website guides for illicit infringing activity, such as hacking Nintendo Switch consoles, creating unauthorized game copies, and obtaining decryption keys.¹⁷⁶

The case also highlighted Tropic Haze’s financial gains from these activities, including revenue from a Patreon¹⁷⁷ campaign with more than 7,000 supporters, generating roughly \$30,000 per month.¹⁷⁸ Additionally, Tropic Haze offered a free version of its emulator software on the Google Play Store for Android devices, alongside a paid “early access” version that was downloaded over 10,000 times and generated at least \$50,000.¹⁷⁹ On March 6, 2024, the Rhode Island District Court entered a final judgment in Nintendo’s favor, awarding \$2.4 million in damages and issuing a permanent injunction.¹⁸⁰ The injunction prohibited Tropic Haze from distributing or marketing Yuzu, circumventing Nintendo’s TPMs, or facilitating the unauthorized reproduction or distribution of Nintendo games.¹⁸¹

The most notable aspects of this case were the extent of the alleged piracy facilitated by the emulator and the financial incentives behind its distribution. Full copies of TOTK game ROM were available online as early as May 1, 2023, despite its May 12, 2023, release date.¹⁸² The

/answers/detail/a_id/48058/~/-nintendo-switch-family%3A-user-agreement [https://perma.cc/E8LN-ET5K] (last visited Jan. 3, 2024).

¹⁷⁴ Complaint & Jury Demand ¶ 2, Nintendo of Am. Inc. v. Tropic Haze LLC, No. 24-CV-00082 (D.R.I. Feb. 26, 2024).

¹⁷⁵ *Id.* ¶ 13; see also Chris Morris, *Nintendo sells 10 million copies of The Legend of Zelda: Tears of the Kingdom in 3 Days*, FORTUNE (May 17, 2023, at 10:37 ET), <https://fortune.com/2023/05/17/nintendo-legend-of-zelda-tears-of-the-kingdom-sales/> [https://perma.cc/8HY6-7AUL] (stating that TOTK sold over 10 million copies within three days, becoming the fastest-selling game in its franchise).

¹⁷⁶ Complaint, *supra* note 174, ¶ 13 (noting that without Tropic Haze’s provided circumvention tools, any encrypted ROMs would be unplayable on emulators).

¹⁷⁷ See *How Does Patreon Work? Your Complete Guide*, IFTTT (Feb. 26, 2025), <https://ifttt.com/explore/how-does-patreon-work> [https://perma.cc/EPY5-7P6J]. Patreon is a website where users can provide recurring contributions as subscribers it calls “patrons.” Tropic Haze’s Patreon page provided patrons with early access builds of Yuzu. *Id.* ¶ 38.

¹⁷⁸ Complaint, *supra* note 174, ¶ 38.

¹⁷⁹ *Id.*

¹⁸⁰ Final Judgment and Permanent Injunction at 2, 6, Nintendo of Am. Inc. v. Tropic Haze LLC, 1:24-cv-00082, (D.R.I. Mar. 06, 2024)

¹⁸¹ *Id.* at 15.

¹⁸² *Id.* at 21.

complaint also claimed that in that period, membership of defendant's Patreon doubled.¹⁸³ Circling back to Nintendo's goal of "pleasing customers,"¹⁸⁴ the complaint claimed that Tropic Haze's activities negatively affected lawful customers who want to avoid spoilers in anticipation of the game release.¹⁸⁵ The team's lead apparently also made it "blatantly clear" that a central goal of the project was to enable the unlawful playing of recently-released and high-demand titles like *TOTK* on the Yuzu emulator.¹⁸⁶ Based on these underlying elements, Nintendo's decision to pursue legal action against Tropic Haze underscores the company's commitment to maintaining control over its intellectual property and preventing the widespread unauthorized distribution of its games.

Overall, these cases highlight the legitimate growing concern of developers in the digital age: the rapid spread of pirated games can significantly undermine sales, particularly for highly anticipated titles at the detriment of both game publishers and legitimate consumers who support official releases. Thus, the commercial interests of publishers and the incentives created by copyright protection must also be retained when considering solutions for the underlying preservation issue in emulation; otherwise, the erosion of these protections could ultimately harm both consumers and game publishers.

PART III: MUSIC INDUSTRY SOLUTIONS FOR VIDEO GAME PRESERVATION

To effectively address the complex legal and preservation challenges facing video games, we can draw on lessons from IP law as it pertains to music, which has long been more rigorously scrutinized under copyright law, with clearer mechanisms in place for both protection and preservation than there are in video games.¹⁸⁷ While video games are distinct in their composition—incorporating a complex blend of audiovisual elements, interactivity, and code¹⁸⁸—applying aspects of the

¹⁸³ Complaint & Jury Demand ¶ 63, *Nintendo of Am. Inc. v. Tropic Haze LLC*, No. 24-CV-00082 (D.R.I. Feb. 26, 2024).

¹⁸⁴ *See, e.g.*, NINTENDO SECOND QUARTER FINANCIAL RESULTS, *supra* note 49, at 11 (explaining that one of the goals of Nintendo's IP initiatives is "establish[ing] positive, long-term relationships with each of [their] consumers . . .").

¹⁸⁵ Complaint & Jury Demand ¶ 64, *supra* note 183.

¹⁸⁶ *Id.* ¶ 71 (alleging that statements made by Tropic Haze's project lead, under the alias "Bunnei", were also in reference to other highly-anticipated titles of popular Nintendo franchises, like *Metroid Dread*, *Super Mario 3D World + Bowser's Fury*, *Pokémon Let's Go, Eevee! and Let's Go, Pikachu!*, and *Xenoblade Chronicles* which were all playable on Yuzu before or on the day of or before their official release date).

¹⁸⁷ Gonçalves, *supra* note 34, at 4; Jethro Dean Lord IV, *Would You Like to Play Again? Saving Classic Video Games from Virtual Extinction Through Statutory Licensing*, 35 SW. UNIV. L. REV. 405, 423–24 (2006).

¹⁸⁸ Gonçalves, *supra* note 34, at 5.

music industry's approach to video games could offer a possible model for preserving older titles while balancing the interests of developers and consumers.

Legal scholarship has already undertaken the task of exploring how certain features of the Copyright Act, applied to music, might be extended to video games. For instance, the video game *The Legend of Zelda: The Wind Waker* “was registered with the Copyright Office as a ‘visual material’ and, in a separate registration, as a ‘computer file,’” illustrating the possible breadth of copyright protection applicable to video games.¹⁸⁹ In a similar vein, *Nintendo Music* represents another example of intellectual property being leveraged for revenue and as a means of reintroducing legacy content.¹⁹⁰ By making older game soundtracks available through an official platform, the service caters to longstanding fan interest while also exposing Nintendo's legacy franchises to a broader audience. The availability of older soundtracks, previously unavailable to the public, serves not only to satisfy fan interest, but also helps to expose Nintendo's legacy franchises to a broader audience.¹⁹¹ These stored works have the potential to generate revenue for the company, even if they are not directly tied to contemporary product sales.¹⁹² This model of leveraging legacy content for ongoing revenue reflects the approach that major rightsholders like Nintendo advocate as an alternative to third-party preservation, premised on the idea that older titles can be preserved and monetized through digital re-releases or other accessible formats.¹⁹³

A potential solution to the complex issues surrounding video game preservation and emulation lies in adapting the mechanical and compulsory licensing schemes used in the music industry.¹⁹⁴ Unlike the direct prohibition against emulation seen in contemporary cases, licensing offers a compromise that allows companies like Nintendo to continue to protect their intellectual property while also satisfying public demand for access to older titles.¹⁹⁵ Licensing provides a way to allow consumers to enjoy games they can no longer purchase through legal

¹⁸⁹ *Id.* at 6.

¹⁹⁰ See generally *Nintendo Music*, NINTENDO, <https://www.nintendo.com/us/switch/online/nintendo-switch-online/nintendo-music/> [<https://perma.cc/44DD-BQRK>] (last visited Nov. 13, 2024). “Nintendo Music” is a mobile app allowing users with a Nintendo Online Subscription to access a library of soundtracks from various franchises, including older titles.

¹⁹¹ Derrick Rossignol, *The New Nintendo Music App Isn't Spotify, For Better and Worse*, UPROXX, (Oct. 31, 2024), <https://uproxx.com/music/nintendo-music-app-spotify/> [<https://perma.cc/2AT8-SG43>] (noting *Nintendo Music* provides an official option for listening to Nintendo's decades-old game soundtracks—previously accessible only through unofficial releases, obscure CDs, or user-generated uploads—thereby making legacy music more readily available).

¹⁹² *Id.*

¹⁹³ *Id.*

¹⁹⁴ Lord, *supra* note 187, at 405.

¹⁹⁵ Gonçalves, *supra* note 34, at 3–4.

means without completely bypassing the protections that developers wish to maintain.¹⁹⁶

For example, mechanical licensing allows third parties to reproduce and distribute a copyrighted work without direct permission, provided they adhere to specific legal conditions such as a payment of a statutory royalty.¹⁹⁷ In the music industry, a mechanical license serves a dual purpose: it allows songwriters and publishers to receive compensation for their work while also ensuring that music can be more widely distributed and preserved over time so long as the fundamental character of the work is not changed.¹⁹⁸ A compulsory license under 17 U.S.C. § 115 grants an automatic right to use any copyrighted musical work, but similarly requires that the basic melody or fundamental character of the work is not changed and that other statutory requirements, including a royalty payments, are met.¹⁹⁹ These concepts could be adapted to video games, allowing for an equivalent model where ROMs could be made available for legal download, offering compensation to the original developers while also allowing for the preservation and accessibility of older games.²⁰⁰

In the context of video games, the equivalent of “sheet music” would be the ROM files of the games themselves.²⁰¹ However, analogizing video game code to a musical work is imperfect. In the music industry, a statutory mechanical license permits a subsequent artist to reproduce and distribute a musical composition—typically from the copyright holder of the composition—to create derivative works such as cover recordings, provided the underlying melody and lyrics are preserved.²⁰² In contrast, licensing video game code alone would not be sufficient for creating a “cover game.”²⁰³ A game built using the same underlying code could still alter audiovisual elements, mechanics, and

¹⁹⁶ *Id.* at 15, 17.

¹⁹⁷ *Id.* at 12.

¹⁹⁸ 17 U.S.C. § 115 (“[a person may] obtain a compulsory license to make and distribute phonorecords of a nondramatic musical work, including by means of digital phonorecord delivery.”).

¹⁹⁹ 17 U.S.C. § 115(a)–(b).

²⁰⁰ Lord, *supra* note 187, at 430.

²⁰¹ Gonçalves, *supra* note 34, at 10, 18 (arguing that video games and musical works share enough similarities to extend the mechanical licensing scheme to games, as both contain copyrightable elements that can be reinterpreted while preserving the original’s look and feel, similar to a cover song under section 115); see John Baldrica, *Cover Songs and Donkey Kong: The Rationale Behind Compulsory Licensing of Musical Compositions Can Inform a Fairer Treatment of User-Modified Videogames*, 11 N.C. J.L. & TECH. 103, 103, 117–119 (2009) (“Because of . . . similarities, a compulsory licensing scheme would theoretically be a perfect match for video game mods . . .”).

²⁰² Gonçalves, *supra* note 34, at 11.

²⁰³ *Id.* at 6. (“The mention of characters and storylines as a protectable component is fundamental because this would allow for a better comparison between an original and a cover game. Therefore, when it comes to relevant elements of video games protectable by copyright, one must consider their code, audiovisual components, and narrative.”).

gameplay in a way that creates a new work entirely.²⁰⁴ Therefore, for a statutory licensing system to function effectively, it would need to distinguish between emulation that reproduces an existing game for purposes of access and preservation, and licensed uses that authorize the creation of new expressive implementations of a game's underlying code.²⁰⁵

One potential result of implementing such a licensing system is that websites could legally offer ROMs for a nominal per-download fee, allowing the public to access classic video games that are no longer available through traditional means.²⁰⁶ This system would not only give consumers a legal avenue to access preserved games but also provide video game developers with a new source of income for works that may have otherwise been considered outdated or "valueless."²⁰⁷ Even when games are no longer commercially viable in traditional markets, a licensing model would allow developers to benefit from the enduring popularity of their work.²⁰⁸ Furthermore, a structured licensing approach could foster innovation by providing modders and independent developers with a clear legal framework for creating derivative works.²⁰⁹ By aligning with fair use principles, this system could support a thriving community of game creators while ensuring that original developers receive fair compensation.²¹⁰

However, implementing a licensing framework for video games comes with significant challenges. Video game publishers have historically been highly protective of their intellectual property,²¹¹ with many developers viewing licensing as a potential threat to the control over their works, fearing it could undermine their exclusive rights.²¹² Moreover, because video games are more complex than music composition,²¹³ it is necessary to develop a more nuanced licensing

²⁰⁴ *Id.* at 6, 18.

²⁰⁵ *Id.* at 17 (explaining that, unlike musical works—where a statutory mechanical license permits the creation of cover recordings without altering the underlying composition—licensing video game code alone may allow creators to generate materially different audiovisual and narrative expressions, and therefore proposing that any compulsory licensing regime for video games distinguish between exact reproduction for access and licensed derivative creation, with limits to prevent market-substituting "cover games").

²⁰⁶ Lord, *supra* note 187, at 430 (proposing that a statutory licensing model for ROMs, modeled after the music industry's compulsory licensing system, will provide a new revenue source and reduce legal expenses associated with pursuing piracy of older titles).

²⁰⁷ *Id.* (arguing that statutory licensing would enable ROM distribution, giving fans access to classic games and preserving video game history without fear of legal action); Dennis W. K. Khong, *Orphan Works, Abandonware and the Missing Market for Copyrighted Goods*, 15 INT'L J.L. & INFO. TECH. 54, 55–56 (2007); *see also* Conley et al., *supra* note 7, at 279–80.

²⁰⁸ Gonçalves, *supra* note 34, at 11; Baldrica, *supra* note 201, at 138–39.

²⁰⁹ Baldrica, *supra* note 201, at 140–41.

²¹⁰ *Id.*

²¹¹ *Id.* at 125–28; Gonçalves, *supra* note 34, at 15; *see also supra* Part II.

²¹² Baldrica, *supra* note 201, at 128.

²¹³ Gonçalves, *supra* note 34, at 5–6. (In addition to being copyrightable as a "literary text," the

system that fairly compensates all rights holders. Thus, adapting licensing models from the music industry could offer a viable compromise for game preservation, but complexities of video game copyrights and resistance from major publishers serve as significant barriers to that solution.

Another possible solution is the establishment of a dedicated federal agency tasked with overseeing the preservation of culturally and historically significant video games. This proposal draws inspiration from the National Film Preservation Board (NFPB), a federal body within the Library of Congress that develops criteria for the National Film Registry and provides advisory services on the preservation of films.²¹⁴ Similarly to how the NFPB has been instrumental in ensuring the preservation of film, a video game preservation board could safeguard the legacy of video games and ensure their accessibility for future generations.²¹⁵

In its 2024 Register's Recommendation, the U.S. Copyright Office addressed the challenges surrounding video game preservation under the DMCA's anti-circumvention regime, emphasizing the continued uncertainty regarding how § 1201 applies to preservation activities undertaken by libraries, archives, museums, and educational institutions.²¹⁶ The Office acknowledged that video games present unique preservation difficulties and reiterated that § 108 of the Copyright Act offers useful guidance on the scope and purpose of lawful preservation.²¹⁷ Nevertheless, the Copyright Office declined to recommend a permanent exemption permitting circumvention of technological protection measures for video game preservation, instead reaffirming its preference for time-limited exemptions.²¹⁸ In rejecting a proposed exemption for

audio, sound effects, musical score, elements of game graphics, characters, and the game's story and setting may be subject to copyright protection.).

²¹⁴ White, *supra* note 5, at 596–97 (describing the National Film Preservation Board's role in selecting films for inclusion in the National Film Registry based on cultural, historical, or aesthetic significance, and coordinating federal preservation priorities to ensure long-term public access to at-risk works).

²¹⁵ *Id.* at 604.

²¹⁶ U.S. COPYRIGHT OFF., SECTION 1201 RULEMAKING: SEVENTH TRIENNIAL PROCEEDING TO DETERMINE EXEMPTIONS TO THE PROHIBITION ON CIRCUMVENTION 3–5, 163–66 (2024) [hereinafter 2024 Recommendation]; *see also* Gonçalves, *supra* note 34, at 10 (“[S]ection 1201 exemptions have been illuminated as insufficient to assure preservation and access to older video game titles, mainly due to copyright holders wanting to maintain all of their rights even if they are not utilizing them to their full potential.”); 17 U.S.C. § 1201(d)(1)–(2) (“A nonprofit library, archives, or educational institution which gains access to a commercially exploited copyrighted work solely in order to make a good faith determination of whether to acquire a copy of that work for the sole purpose of engaging in conduct permitted under this title shall not be in violation of subsection (a)(1)(A)” and applies only when an identical copy of that work is not reasonably available in another form.).

²¹⁷ *Id.* at 165–167 (acknowledging the distinctive technical and legal challenges associated with preserving video games and noting that § 108 provides guidance on the objectives of lawful library and archival preservation, while not directly resolving § 1201 issues).

²¹⁸ *Id.* at 168–170 (declining to recommend a permanent preservation exemption for video games

video game museums and archives, the Office relied in part on opposition from rightsholders, including industry groups such as the Entertainment Software Association, which argued that broader circumvention authority could facilitate piracy and undermine existing and future markets for video games.²¹⁹

Preservation proponents have advocated for greater flexibility, arguing that libraries and archives should be permitted to provide controlled remote access to legacy media and software through emulation, subject to safeguards that prevent downloading or duplication, in order to facilitate research and preservation where rights-holders no longer offer meaningful access to older works.²²⁰ The limitation persists even when games are re-released by publishers, where they are often altered or remastered in ways that reduce their historical or cultural value for research purposes, thus undermining the study of unaltered games that reflect a particular point in time in gaming history.²²¹

Despite these arguments, the Library of Congress has approached these issues with caution. In response to the proposed exemption, it concluded that proponents of broader access did not sufficiently demonstrate that off-premises access to video games would be non-infringing.²²² Furthermore, the Library of Congress expressed concern about the risk of market harm that could arise from relaxing the DMCA's restrictions. In particular, the agency was concerned that removing the premises limitation, which restricts the lending of games to physical

and reaffirming that exemptions under § 1201 must remain temporary and subject to triennial review).

²¹⁹ *Id.* at 171–175 (summarizing rightsholder opposition—including submissions by the Entertainment Software Association—arguing that expanded preservation exemptions could facilitate piracy and negatively affect current and future markets for video games); see also *ESA Statement on the U.S. Copyright Office's Triennial Rulemaking on Section 1201 of the Digital Millennium Copyright Act (DMCA)*, ENT. SOFTWARE ASS'N (Oct. 25, 2024), <https://www.theesa.com/esa-statement-on-the-u-s-copyright-offices-triennial-rulemaking-on-section-1201-of-the-digital-millennium-copyright-act-dmca/> [<https://perma.cc/L7YN-HH7B>] (“We recognize the importance of preserving video games and protecting game hardware given their significance in culture and society. With today’s decision, the U.S. Copyright Office confirms that the current level of video game preservation is appropriate and recognizes that video games present unique copyright concerns that should always be taken into consideration.”).

²²⁰ AUFDERHEIDE ET AL., *supra* note 42, at 14–15 (describing preservation advocates’ support for remote access to legacy software through controlled emulation environments that prevent downloading and duplication, and noting that legal uncertainty—rather than technological infeasibility—limits broader access).

²²¹ *Id.* at 5; see also Exemption to Prohibition on Circumvention of Copyright Protection Systems for Access Control Technologies, 89 Fed. Reg. at 85445 (“Proponents argued that researchers could make non-infringing uses of the exemption even if the single-user limitation and the premises limitation were removed. This position was based in part on their view that proposed uses would be transformative and would not affect the potential market for or value of the copyrighted works because only works that are no longer reasonably available in the commercial marketplace would be subject to the exemption.”).

²²² Exemption to Prohibition on Circumvention of Copyright Protection Systems for Access Control Technologies, 89 Fed. Reg. at 85445.

locations, could threaten the market for legacy video games²²³ such as those sold on digital storefronts or through services like Nintendo Switch Online.

Given the complexities of video game copyrights and the strong resistance from major industry players, a licensing framework—though conceptually appealing—is unlikely.²²⁴ Instead, the establishment of a federal agency dedicated to video game preservation appears to be the most viable long-term solution. Such an agency could oversee exemptions for preservation institutions, standardize best practices for archiving games, and work with developers to ensure legacy titles remain accessible.²²⁵ However, this initiative currently faces significant hurdles, as Congress remains hesitant to challenge industry-backed opposition, which has repeatedly argued that broader exemptions could undermine commercial markets.²²⁶ To overcome this obstacle, greater public and institutional support is needed to advocate for the importance of video game preservation. Without stronger advocacy and legislative backing, preservation efforts may be set aside in favor of commercial interests.

CONCLUSION

In the evolving landscape of video game preservation and emulation, the tension between IP rightsholders and the public interest in cultural preservation remains unresolved. Copyright law, in its current form, provides inadequate solutions for the preservation of older video games, particularly as new technologies and consumer expectations evolve.²²⁷ Nintendo's aggressive legal strategies highlight the commercial interests that dominate the gaming industry and underscore the shortcomings of the existing framework in accommodating both copyright protection and the preservation of cultural works.²²⁸ While potential solutions exist, greater public and institutional advocacy to push for stronger legislative backing is necessary to ensure that video game preservation is not left entirely to commercial interests.²²⁹

While video games are undoubtedly valuable commercial assets, they are also reflective of and are an essential part of the Nation's evolving digital and technological culture. In pursuit of a framework that fosters both creative incentives and long-term public access, a more

²²³ *Id.*

²²⁴ Baldrice, *supra* note 201, at 129.

²²⁵ White, *supra* note 5, at 591–92.

²²⁶ Exemption to Prohibition on Circumvention of Copyright Protection Systems for Access Control Technologies, 89 Fed. Reg. 85437, 85445 (Oct. 28, 2024) (to be codified at 37 C.F.R. § 201)

²²⁷ *See supra* Part I.

²²⁸ *See supra* Part II.

²²⁹ *See supra* Part III.

comprehensive, forward-thinking approach is necessary—one that prioritizes both innovation and preservation. By reconciling the competing interests of developers and the public, these solutions could pave a future in which video game history is both protected and accessible to all.

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