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Keywords

Cloud computing, centralized computer, entertainment content, content streaming

WORK WITH YOUR HEAD IN THE CLOUDS: THE IMPACT OF CLOUD COMPUTING AND CONTENT STREAMING ON COPYRIGHT IN THE ENTERTAINMENT INDUSTRY

by Tamara Céline Winegust*

I. INTRODUCTION

Marc Aaron Melzer observes that entertainment consumers “want and expect all content to be accessible everywhere, all the time.”¹ To meet this desire and demand, many consumers turn to downloading or uploading digital copies of copyrighted content to their personal computers and portable devices without permission from copyright owners. The entertainment industry attempted to stem its financial losses from such unauthorized duplication through litigation,² legislation,³ technology,⁴ and the market,⁵ with limited success: from 2004 to 2010 recorded music revenue declined thirty-one percent globally,⁶

and in 2005, the movie industry lost an estimated \$2.306 billion worldwide, including \$447 million in the United States to online piracy.⁷ Cloud computing offers an alternative means for content owners and creators to protect their creative works in digital settings. Under the current “personal” model of computing, wherein individuals store their personal files on their computers, access to digital works requires that a local copy of the work reside on that person’s device. Alternatively, the “cloud computing” model, like the older “mainframe” computing model, is based on a centralized computer system whose information is accessible by many people, for their individual needs, through individual network-connected devices that do not locally retain the accessed information.⁸

The centralized nature of the cloud computing model affords entertainment content owners and creators new opportunities and methods to control consumer access, experience, and use that are unavailable in the personal computing context.⁹ By forgoing traditional distribution in favor of making new works exclusively available through cloud services, content creators and owners could ensure stronger protection of their work. Particularly, because granting access to a work through the cloud arguably falls outside the Copyright Act’s definition of “publication,”¹⁰ exclusive use of cloud computing and content streaming extends

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1. Marc Aaron Melzer, *Copyright Enforcement in the Cloud*, 21 FORDHAM INTELL. PROP. MEDIA & ENT. L.J. 403, 409 (2011).

2. *Metro-Goldwyn-Meyer Studios, Inc. v. Grokster*, 545 U.S. 913 (2005) (suing an online service facilitating illegal downloads); *BMG Music v. Gonzalez*, 430 F.3d 888 (7th Cir. 2005) (suing an individual infringer for illegally downloading more than 1,370 songs); *see, e.g., A & M Recording Inc. v. Napster Inc.*, 239 F.3d 1004 (9th Cir. 2001) (suing an online service facilitating illegal downloads).

3. *Stop Online Piracy Act*, H.R. 3261, 112th Cong. (2011); *Preventing Real Online Threats to Economic Creativity and Theft of Intellectual Property*, S. 968, 112th Cong. (2011); *see* Digital Millennium Copyright Act, 17 U.S.C. §§ 1201–1205 (2006).

4. *See, e.g., Universal City Studios, Inc. v. Reimerdes*, 111 F. Supp. 2d 294 (S.D.N.Y. 2000) (showing encryption technologies embedded in DVDs allowing them to only be played, but not copied, by machines containing the licensed decryption program), *aff’d*, 273 F.3d 429 (2d Cir. 2001).

5. For example, services such as iTunes provide consumers the opportunity to purchase a digital copy of a musical or cinematic work at a low cost. *iTunes A to Z*, APPLE, <http://www.apple.com/itunes/features/#purchasing> (last visited June 14, 2012).

6. Frances Moore, *IFPI Digital Music Report 2011: Music at the Touch of a Button*, INT’L FED’N OF THE PHONOGRAPHIC INDUS., 14 (2011), www.ifpi.org/content/

[library/DMR2011.pdf](#) (last visited June 14, 2012).

7. L.E.K. Consulting, *The Cost of Movie Piracy*, MOTION PICTURE ASS’N, 5 (2005), <http://ia600407.us.archive.org/3/items/MpaaPiracyReort/LeksummarympaRevised.pdf> (last visited June 14, 2012).

8. Melzer, *supra* note 1, at 406; *see* Mark Weiser and John Seely Brown, *The Coming Age of Calm Technology*, XEROX PARC, 2, 3 (Oct. 5, 1996), <http://johnseelybrown.com/calmtech.pdf> (last visited June 14, 2012).

9. *See* Christopher Soghoian, *Caught in the Cloud: Privacy, Encryption, and Government Back Doors in the Web 2.0 Era*, 8 J. TELECOM. & HIGH TECH. L. 359, 364 (2010).

10. Digital Millennium Copyright Act, 17 U.S.C. § 101 (2006).

a work's term of protection. Additionally, because such a business model avoids sale of physical objects in the marketplace, owners could circumvent the "first sale" doctrine,¹¹ and thus control the value of their content by eliminating the secondary market for that content. Granting access to new creative works through the exclusive use of cloud computing and content streaming can therefore revive aspects of pre-digital controls, facilitate strong anti-infringement measures, and perhaps begin to stem the industry's recent financial losses.

II. WHAT ARE CLOUD COMPUTING AND CONTENT STREAMING?

Cloud computing enables "ubiquitous, convenient, on-demand network access to a shared pool of configurable computing resources . . . that can be rapidly provisioned and released with minimal management effort or service provider interaction."¹² At its core, cloud computing diffuses computing power across millions of devices by using centralized computer "servers," located in data processing centers throughout the world, to process and store user accessible data.¹³ Like the mainframe computer model, cloud computing allows individuals with "dumb," content-less terminals to access the "smart," content-full mainframe through a vast communication network.¹⁴ Using the Internet to connect the terminals (personal devices) with the mainframe (the cloud servers), cloud computing permits users to instantly

access data from anywhere in the world through network-enabled devices without formally needing to "possess" that data on the device itself.¹⁵

Because of the substantial availability of Internet networks and the proliferation of portable computing devices, including laptops, tablets, and smartphones, cloud computing has become a normative, widespread means of computing.¹⁶ Although consumers are accustomed to having their documents, music, photos, and movies residing on their own personal devices, "[o]ver the last few years, consumers, corporations, and government have rushed to move their data to 'the cloud' . . . [and now] over 69% of Americans . . . store data online . . . , [and t]his trend is only going to continue"¹⁷

While cloud computing refers to an information storage method, "content streaming" is a means of communicating cloud-stored information to connected devices and their users. Unlike downloading, which preserves a completed file for later access, streaming transmits individual data packets to users for their consumption, which the users' computers discard as the content is viewed or heard. Content streaming thereby facilitates user experience of dynamic content, such as music or movies, without requiring a permanent copy of the content to reside on the user's personal computer.¹⁸

Generally, streams are either "live," like a live broadcast, only available through certain channels at certain times, or "on-demand," which allows consumers to elect to receive content of their choice at any time.¹⁹ For example, services that stream television shows and films upon user request, such as Hulu, are "on-demand" since they provide users with a selection of content that can be accessed at any time.²⁰ Alternatively, "live stream" services, such as C-SPAN's content streaming, provide users the opportunity to access

11. *Id.* § 202.

12. Peter Mell & Timothy Grance, DEP'T OF COMM., NAT'L INST. OF STANDARDS and TECH., Special Pub. 800-145, *The NIST Definition of Cloud Computing 2* (2011) [hereinafter *NIST Definition*]. "Clouds" of content can be private, community, public, or a mix. Private clouds are generally owned and operated by one organization and are designated for use by specific individuals within a group. Similarly, community clouds are designed for exclusive use by several groups sharing common concerns, and can be owned or operated by one of multiple organizations. Alternatively, public clouds are open to use by the general public, exist on the premises of the provider, and are owned or managed by a business, academic, or government organization. *Id.* at 3.

13. Soghoian, *supra* note 9, at 363-64.

14. Melzer, *supra* note 1, at 406; Erica Naone, *Conjuring Clouds: How Engineers Are Making On-Demand Computing a Reality*, 112 MIT TECH. REV. 53 (July/Aug. 2009), available at <http://www.technologyreview.com/computing/22606/page1/>.

15. Soghoian, *supra* note 9, at 361.

16. *Id.*

17. *Id.* at 360-61, 363.

18. Jay Anderson, *Stream Capture: Returning Control of Digital Music to the Users*, 25 HARV. J.L. & TECH. 159, 167 (2011).

19. *Id.* at 166.

20. About, HULU, <http://www.hulu.com/about> (last visited June 14, 2012).

an already playing stream of video, but not to access previously streamed content.²¹

Cloud computing and content streaming thus provide content owners and creators unprecedented control over access to, and use of, their digital content. By avoiding content storage on personal computers, these methods make it substantially more difficult for users to copy content. More importantly, however, they reduce the need to copy, since the “on-demand” nature of streaming renders access functionally equivalent to when the same content is stored locally.²² Additionally, because cloud content providers can require a user to register with the provider and “log-in” to access the cloud, these providers can deny access to troublesome users by revoking user authorization.²³ Controlling access also allows owners, creators, and providers to control user experience and to maintain quality control over their content.²⁴

Furthermore, users benefit from these technologies: because cloud information is available from any point of access, a user with an Internet connection could experience the content on any Internet-capable device, anywhere in the world.²⁵ Combining cloud computing and content streaming technologies could thus reduce online piracy of entertainment content by providing the consumer with value—the ability to access content from almost anywhere—while providing content owners, creators, and providers with an unprecedented means to control their digital works.²⁶

III. IMPACT OF CLOUD COMPUTING AND CONTENT STREAMING ON COPYRIGHT LAW

Copyright Law gives authors exclusive rights over their “original works of authorship that are fixed in any tangible medium of expression . . .”²⁷ including the right to

reproduce, distribute, publish, and publicly perform those works, and to transfer these rights by ownership, rental, or license.²⁸ Anyone who executes one of these rights without permission of the copyright owner is an infringer and is subject to common law or statutory sanctions.²⁹

Traditional digital reproduction occurs when individuals copy digital information from one medium or location to another. The Copyright Act defines “copies” as “material objects, other than phonorecords, in which a work is fixed . . .”³⁰ Fixation requires that embodiment of the work be “sufficiently permanent or stable to permit it to be perceived, reproduced, or otherwise communicated,” and that the embodiment be “for a period of more than transitory duration.”³¹ Pure digital copying thus constitutes infringement because it allows information to remain fixed in the original host medium while the identical information is reproduced and fixed in a second medium or place for unlimited on-demand recall.³² Alternatively, cloud computing and streaming technologies allow users to access content without needing to “fix” the information on their personal device, since the information is embodied in the user’s device for a period of less than transitory duration. Thus, communication of cloud-stored works through streaming mechanisms falls outside the Copyright Act’s definition of a “copy.”

Cloud content accessed through a stream is not “fixed” within the meaning of the Copyright Act for two reasons. First, the legislative history surrounding the “transitory duration” language in the § 101 definition of “fixation” states that information “captured momentarily in the ‘memory’ of the computer,” is not “fixed” for the purposes of the definition.³³ Second, recent case law supports this history by

21. *C-SPAN Networks Live*, C-SPAN, <http://www.c-span.org/Live-Video/C-SPAN/> (last visited June 14, 2012).

22. Soghoian, *supra* note 9, at 364.

23. *Id.* at 364–65.

24. *Id.* at 365; Horacio E. Gutiérrez, *Peering Through the Cloud: The Future of Intellectual Property and Computing*, 20 FED. CIR. B.J. 589, 606 (2010–2011).

25. Soghoian, *supra* note 9, at 366.

26. George Jiang, *Rain or Shine: Fair and Other Non-Infringing Uses in the Context of Cloud Computing*, 36 J. LEGIS. 395, 414 (2010).

27. Digital Millennium Copyright Act, 17 U.S.C. §

102 (2006).

28. *Id.* § 106.

29. *Id.* § 501.

30. *Id.* § 101.

31. *Id.*

32. See *In re Aimster Copyright Litig.*, 334 F.3d 643, 645 (7th Cir. 2003) (finding that online music swapping through services like Napster or Grokster were infringements because they involved making and transmitting a digital copy of copyrighted music that then resided on the downloader’s hard drive).

33. H. Rep. No. 89-2237, at 45 (1966).

suggesting that streamed digital information may not be a “copy” embodied in a tangible medium “for a period of more than transitory duration,” since such data is automatically overwritten as soon as it is communicated.³⁴ Therefore, even if streaming entails some embodiment of the file on the user’s computer, it should avoid “fixation” since the file becomes erased upon actual use.

In *Cartoon Network*, the Second Circuit ruled that information embodied in a buffer for 1.2 seconds was not “fixed” for a period of “more than transitory duration.”³⁵ In that case, Cartoon Network argued that CSC infringed its copyrights when CSC buffered Cartoon Network programming to allow consumers to experience the broadcast live or chose to divert it to CSC-owned remote servers for later viewing.³⁶ The Second Circuit explained that “fixation” under the Copyright Act requires the expression’s embodiment be both (1) capable of reproduction or perception, and (2) embodied for a period of more than transitory duration.³⁷ The court recognized that the first criteria was satisfied, since the information was copied from the buffer to CSC’s servers and thus showed the content to be capable of reproduction. The court ultimately held, however, that because no bit of data remained in the buffer for more than 1.2 seconds before being automatically overwritten, the buffer copy did not meet the “duration” requirement, was not “fixed,” and could therefore not be a “copy.”³⁸

Furthermore, several cases from the 1980s dealing with how the dynamic audio-visual components of video games are “fixed” for the purposes of copyright suggest that mere screen displays of audio-video works are not copies, since they are communicated directly from the hard drive in which they are permanently fixed as a copyrightable computer program.³⁹ Under this line of cases, aspects of

creative works expressed by a single, authorized version of a copyrightable computer program are not “copies” of that creative work. As such, where multiple displays simultaneously express a single version of a program, none of those displays is a “copy,” even if each display contains a different expression of the program.

Similarly, in the context of cloud computing and content streaming, cloud servers—like hard drives—house one version of a creative work that it communicates, on demand, to an infinite number of devices connected to that single source. Combining the outcomes in the video game cases with the ruling in *Cartoon Network* that buffer copies are not “fixed” confirms that audio and video content streamed from the cloud to networked devices are not “copies” since networked devices do not “fix” the work, and since all displays emanate from a single source—the cloud server.

When used in combination, exclusive of other means of communication, cloud computing and content streaming technologies transform the nature of copyright protection in the entertainment industry in three important ways. First, because granting access to a single version of a work is not publication, works could gain additional protections, including a longer term of copyright. Second, because streaming precludes secondary product markets by destroying the “first sale doctrine,” creators could increase revenues otherwise lost to such secondary markets. Last, because only a single version of the content exists, content owners could assert their *de facto* “right of control” over creative works, normally checked by publication and first sale. By embracing these new technologies in a transformative business strategy, the entertainment industry could create an effective strategy to strengthen their copyrights, reduce piracy, and capture new revenue.

34. *Cartoon Network LP v. CSC Holdings, Inc.*, 536 F.3d 121, 129–30 (2d Cir. 2008).

35. *Id.*

36. *Id.* at 124.

37. *Id.* at 129–30.

38. *Id.*

39. *See Williams Elecs., Inc. v. Artic Int’l, Inc.*, 685 F.2d 870, 874 (3d Cir. 1982) (ruling no “new” images or sounds were created each time the game was played because the information used to create those images and sounds permanently resided on the same machine used to

display those images and sounds); *Midway Mfg. Co. v. Artic Int’l, Inc.*, 547 F. Supp. 999, 1007 (N.D. Ill. 1982) (finding the audio-visual portions of the videogame were nevertheless copyrightable because they were fixed as a computer program, which permanently resided on a ROM embedded in the game console); *see also Stern Elecs., Inc. v. Kaufman*, 669 F.2d 852, 856 (2d Cir. 1982) (holding that the audio-visual components of a video game were copyrightable because the program hosting the game was “permanently embodied in a material object, the memory devices . . .”).

A. PUBLICATION

“Publication” is the “distribution of copies . . . of a work to the public by sale or other transfer of ownership”⁴⁰ Thus, to “publish,” the owner has to offer to “distribute copies . . . to a group of persons for purposes of further distribution, public performance, or public display.”⁴¹ Content stored on a cloud server is undoubtedly a “copy,” as the information permanently resides on that server. Additionally, on-demand content streaming is plainly both a “display”—since a “copy” of the work is shown—and a “performance”—since the work is recited or rendered directly by a device.⁴² Nevertheless, providing a cloud service with a version of the content to place on their server and making communications of that version available to an indefinite number of individuals falls outside the definition of “publication” for two reasons.

First, providing a single version or copy to a cloud service falls outside the scope of the statute’s plain language. The provision requires that to be “published,” “copies” of the work must be given to a “group of persons.” Since a content creator need only provide the cloud service with *a* copy, rather than *multiple* copies of the work, it is not published. Furthermore, no “group of people” receives this single copy, since the content is either directly uploaded to an inanimate computer, or is provided to a corporation, which is considered a single legal entity.⁴³

Second, making the content available via streams to innumerable individuals through the cloud is not publication. While streaming plainly creates a display and performance of the work, the statute is clear that “a public performance or display of a work does not of *itself* constitute publication.”⁴⁴ Furthermore, the display or performance of an on-demand streamed work is not “public” in nature.⁴⁵ To

qualify as “public” under the Copyright Act, the performance or display must be “at a place open to the public” or be communicated to the public “in the same place or in separate places *and* at the same time, or at a different time.”⁴⁶

The Second Circuit recently held that in considering whether a performance is public, the court should focus on the “people capable of receiving a *particular* ‘transmission’ or ‘performance,’ and not of the potential audience of a particular ‘work.’”⁴⁷ Thus, even if the same underlying performance is transmitted to the “public,” that transmission may not be sufficiently “public” unless the *particular* transmission in question was capable of receipt by the “public.”⁴⁸ In *Cartoon Network*, the capture of a formerly public broadcast from a remote DVR and subsequent transmission to an individual user requesting the transmission was not a “public performance” because the “the universe of people capable of receiving [that particular transmission was] the single subscriber.”⁴⁹ Similarly, on-demand transmissions of cloud content are only capable of receipt by the one person/device/account requesting content access. It therefore cannot be a “public” transmission within the meaning of *Cartoon Network*’s interpretation, since a “publication” requires the distribution of copies, while streaming does not produce “copies.” Furthermore, even if public availability of streamed content was considered “public display” or “performance,” those methods of transmission are not “publication” of a work by themselves. Therefore, a work exclusively maintained on the cloud and exclusively made available through content streaming can avoid “publication.”

By not “publishing” a work, content owners can increase their copyright protection in two ways. First, since the owner has not

40. Digital Millennium Copyright Act, 17 U.S.C. § 101 (2006).

41. *Id.*

42. *Id.*

43. See *Santa Clara Cnty. v. S. Pac. R. Co.*, 118 U.S. 394, 396 (1886) (establishing the Fourteenth Amendment applies to corporations as well as natural persons).

44. 17 U.S.C. § 101 (emphasis added).

45. “Live” streams may fall within the scope of

“public performance” because, like broadcast television, the stream simultaneously transmits the same performance to multiple people; however, since “publication” precludes such broadcasting, without more, to not be “publication,” the distinction between “live” and “on-demand” streams for the purposes of “publication” is moot.

46. 17 U.S.C. § 101 (emphasis added).

47. *Cartoon Network LP v. CSC Holdings, Inc.*, 536 F.3d 121, 135 (2d Cir. 2008) (emphasis added).

48. *Id.* at 136.

49. *Id.* at 137.

exercised her publication or distribution rights, she has an additional cause of action under sections 106 and 501 against people who download or distribute unauthorized copies of their work. Second, and more importantly, where works are made for hire, not “publishing” a work can extend the term of protection from ninety-five years to 120 years.⁵⁰

This position may currently be untenable for those industries—such as movie, television, and publishing—that rely on traditional public transmission and publication to disseminate content and generate revenue. Changing business strategies, however, may make these results more tenable. For example, in the future, movie studios could maintain their films on a central server, requiring that theater companies stream these films through a device at agreed upon times to screen them at a local theater. Furthermore, independent musicians could incorporate themselves, maintain their own website, and use on-demand stream technology to control access to their works. As cloud computing and content streaming become commonplace, and internet speeds accelerate to facilitate transmission of larger information packets, the entertainment industry could transform its business strategies and secure additional copyright protection.

B. FIRST SALE DOCTRINE

Similarly premised on the distribution of physical copies of a work, the “first sale doctrine” distinguishes rights to use the copyrighted expression from rights to use the physical medium in which the expression is fixed.⁵¹ Under the doctrine, “[t]ransfer of ownership of any material object, including the copy . . . in which the work is first fixed, does not of itself convey any rights in the copyrighted work embodied in the object.”⁵² For example, an individual purchasing a CD could transfer or lend that physical CD to as many friends as he or she wants: the copyright owner has no right to control the physical item in which the expression is fixed once it leaves the copyright

owner’s possession. Conversely, the purchaser cannot create reproductions of the work to give away to her friends and simultaneously retain the original purchased copy because the copyright owner maintains a legal interest in distributing copies of that expression. Hence, the “first sale doctrine” operates as a bar on the author’s ability to control the particular object in which his expression is embodied “after these copies have been sent into the stream of commerce with the author’s permission.”⁵³

Because a purchaser could sell, lease, or rent the physical embodiment of the work, and therefore, the work itself, the first sale doctrine effectively creates a secondary market for the work. Additionally, this secondary market’s existence necessarily reduces the potential revenue streams to copyright owners, since it provides an alternative means for consumers who would otherwise purchase the work in the primary market. Conversely, owners can avoid the secondary market by not authorizing the production of any material objects containing the expression. By making content only available through streams, copyright owners can forgo the distribution of *any* copies to the public, avoid the “first sale doctrine” entirely, and thus eliminate the secondary market, establishing effective control over the primary market for that content and increasing revenue streams.

C. RE-ESTABLISHING THE RIGHT TO CONTROL

By using cloud computing and content streaming to regain power over access to, and use of, copyrighted works, copyright owners can reestablish what David Nimmer argues is an unenumerated copy-right: the “right to control.”⁵⁴ Nimmer observes that before copyright owners published their works in

50. 17 U.S.C. § 302(c).

51. *Id.* § 202.

52. *Id.*

53. David Nimmer, *Brains and Other Paraphernalia of the Digital Age*, 10 HARV. J.L. & TECH. 1, 18–19 (1996). Importantly, the “first sale doctrine” does not require the sale of any actual material good containing the expression: ownership transference of an authorized copy is enough. Thus, when the rights holder transfers title of the material object housing the authorized copy, the doctrine only entitles the transferee to dispose of, but not reproduce, his copy. *UMG Recordings, Inc. v. Augusto*, 558 F. Supp. 2d 1055, 1059 (C.D. Cal. 2008).

54. Nimmer, *supra* note 53, at 14.

material objects capable of public distribution—such as records, VHS, CD, DVD, and other like media—owners retained the right, or at least the *de facto* ability, to control the public’s experience of their work.⁵⁵ For example, from the 1930s through the 1970s, most film companies controlled theatrical releases of their product, supplementing them with limited time television broadcasts. Thus, millions of people repeatedly experienced Disney’s “Snow White” in theatres or on television and, Nimmer postulates, could recall particular scenes from the film in their minds for enjoyment; yet that audience had little control over their experience of that work since no commercial quality copies were publicly available for personal consumption.⁵⁶ Such power over “experience” affords copyright owners control over when, where, and for how long the public can access the copyright work, requiring that users repeatedly engage the owner’s services as a pre-condition to experiencing the product.

Jay Anderson explores this historical dichotomy between entertainment experienced through services—like radio, television, and film—and entertainment experienced through products—such as cassettes, DVDs, and iPods. When entertainment is a “product,” it is something that consumers can take wherever they go and access without the aid of another person.⁵⁷ Alternatively, when entertainment is a “service,” the consumer requires another provider’s actions or permission to access the entertainment. For example, music was historically experienced as a service: consumers who wanted to enjoy a composition required musicians to read sheet music and play notes, or required a radio station to play records. Once the consumer could purchase a mechanical or electronic device to play back the music, such as a record or CD player, music became a “product” based experience.⁵⁸ Conversely, books or other literary works have historically been “product” based entertainment experiences, since the copyright owner necessarily relinquished control over physical embodiments of the work to allow

consumers to read and experience that work.⁵⁹

Where an entertainment experience is located on what Anderson calls the “service-product spectrum” depends on who has control over the consumer experience, and particularly over the storage and playback or performance of the entertainment work.⁶⁰ When consumers control storage and playback, the entertainment experience falls closer to the “product” end of the spectrum. Alternatively, stronger copyright owner control places it closer to the “service” end.⁶¹ Thus, users gain control over experience of an entertainment work when creators fix a work in a tangible medium capable of distribution to, and playback by, the public. Alternatively, creators can maintain experiential control by withholding fixed copies of their work from the public or by controlling playback methods.

Internet streaming and cloud computing arguably push all entertainment experiences toward the “service” end of the spectrum.⁶² Under these models, product accessibility depends on whether the content owner provides a service: access to the cloud that houses the desired product. For example, in 2009, Amazon summarily erased an unauthorized version of George Orwell’s *1984* from the Kindle e-books network at the behest of the rights holder, removing the book from users’ devices.⁶³ Therefore, even though Kindle owners “purchased” a “copy” of the book on Amazon’s website to “download” to their device, Amazon, as the Kindle service provider, could nevertheless remove that book from user devices by blocking access to the product on the cloud. As books are increasingly digitized, more power is granted to the authors and publishers to control public access to the book, allowing authors to “take back” their work from a consumer for whatever reason, by removing their product from the network.⁶⁴

55. *Id.* at 16.

56. *Id.* at 15–16.

57. Anderson, *supra* note 18, at 162.

58. *Id.*

59. Nimmer, *supra* note 53, at 16–17.

60. Anderson, *supra* note 18, at 162.

61. *Id.*

62. *See id.*

63. Brad Stone, *Amazon Erases Orwell Books from Kindle*, N.Y. TIMES, July 17, 2009, <http://www.nytimes.com/2009/07/18/technology/companies/18amazon.html> (last visited June 14, 2012).

64. *See* Nick Scharf, *Digital Rights Management and Fair Use*, 1 EUR. J.L. & TECH. 1, 8 (2010), <http://www.ejlt>.

The movie industry already employs such strategies to control user access to works. For example, Netflix—an Internet based service that provides streaming movies and television shows from the company’s central servers to individual users requesting content—constantly adds new content and removes older content from its streaming service. Although users have spent \$7.99 to access the service, Netflix has discretion and control over *what content* is available on its network.⁶⁵ Thus, while “content creators have not traditionally been able to impose broad terms of use against the public,”⁶⁶ technological realities and limitations may effectively work to compel such terms.

enabled device. Cloud computing and content streaming technologies thus provide content creators and owners with a new and uniquely potent tool to increase their copyright protections, mediate consumer experience and use, and control their content.

IV. CONCLUSION

Looking to the future, the proliferation of digital communications networks could eliminate entertainment experienced through products, requiring consumers to engage copyright owner controlled services to access a desired copyrighted work. Therefore, by centralizing creative works on the cloud and granting access to such works through unfixable content streams, copyright owners can establish a new level of control and power over how consumers use and experience the owner’s works. Cloud computing and content streaming also eliminate the need to create and distribute tangible objects in which the copyrighted expression is fixed, permitting copyright owners to eliminate secondary markets for entertainment products and increase their revenues in the primary market. Finally, without needing to actually publish a work to disseminate it to the public, copyright owners can extend the term of protection to 120 years after creation. Because works communicated through content streams are not locally fixed on personal computers, no “copies” of that work are ever made; yet, the consumer’s desire to experience entertainment works is nevertheless satiable since that content can be readily available to a user connected to the host server through a network-

org/article/download/22/51 (last visited June 14, 2012).

65. *Company Overview*, NETFLIX, <https://account.netflix.com/MediaCenter/Overview> (last visited June 14, 2012).

66. Jiang, *supra* note 26, at 397.