QUIBBLES 'N BITS: MAKING A DIGITAL FIRST SALE DOCTRINE FEASIBLE

Victor F. Calaba[*]

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I. INTRODUCTION

Suppose you are an avid Stephen King enthusiast and seek to purchase a copy of his recently released novella, RIDING THE BULLET.[1] After poking your head in a few bricks and mortar stores and doing a little internet surfing, you soon realize that RIDING THE BULLET was not

* Victor F. Calaba is an incoming associate at the law firm of Gray Cary Ware & Freidenrich, LLP in Palo Alto, California.

1. STEPHEN KING, RIDING THE BULLET (2000).

released in hard-copy form but rather was released exclusively as a digital eBook that can only be purchased online.

Not too familiar with this format, you decide to give it a try. You visit www.SimonSays.com (Simon and Schuster's website), add RIDING THE BULLET to your shopping cart, charge it to your credit card and then download the eBook to the hard drive of your desktop PC. You also download Adobe Acrobat eBook Reader, the software necessary to read RIDING THE BULLET on your computer. As you click on the icon to install the reader software you just downloaded, an end-user license agreement pops up, requiring you to click the "Yes" box, stating that you agree to the terms of the license agreement.

Once downloaded onto your Windows PC, suppose you want to transfer RIDING THE BULLET to your other computer, which happens to be an Apple iBook laptop. In the alternative, suppose you finish reading the eBook and want to donate it to your local library or resell it on eBay. Given the restrictions programmed into Adobe's eBook software, you will find that the desired actions are functionally infeasible. Further, should you attempt to crack the eBook reader software so RIDING THE BULLET can be read on your iBook or so the local library can open the copy you tried to transmit, you will be violating the license agreement you consented to as well as acting unlawfully under the Digital Millennium Copyright Act (hereinafter "DMCA").[2]

What happened to the privileges you have traditionally enjoyed under the 1976 Copyright Act (the "Copyright Act"), you ask? Why could you resell or donate that hardbound version of DON QUIXOTE but can't do the same with the eBook you just purchased online? Whereas the first sale doctrine historically permitted the transfer and resale of copyrighted works, license agreements used by software companies and the DMCA's strict rules prohibiting tampering with access control devices frustrate exercise of the first sale doctrine with respect to many forms of digital works.

The use of eBooks is one of many instances where functional and legal impediments prevent exercise of the first sale doctrine. Other scenarios include the resale of installation disks for software that contains encryption permitting only one installation per purchase; the transfer of software you installed after purchasing it on the internet or in a brick and mortar store; the transfer of software that came preinstalled on your new computer; and reinstallation of your Windows operating system without being able to find the product key shipped with the software.

Enacted in 1998 to protect copyright in the digital era, the DMCA mandated that the Register of Copyrights and the Assistant Secretary for

2. 17 U.S.C. § 1201 (2001).

Communications and Information of the Department of Commerce submit to Congress no later than two years after the DMCA's enactment a report evaluating the DMCA.[3] Accordingly, on June 5, 2000, the United States Copyright Office solicited comments from interested parties on the effects of the DMCA and the development of electronic commerce and associated technology on the operation of Sections 109 (the first sale doctrine) and 117 (Computer Maintenance Competition Assurance Act) of the Copyright Act, and the relationship between existing and emergent technology and the operation of those sections.

Compiling responses to these questions and providing an analysis of the issues at hand, the Copyright Office prepared the DMCA Section 104 Report and delivered it to Congress in August of 2001.[4] While the first sale doctrine has always been a point of contention between copyright owners and copyright users, unparalleled tension between these parties currently exists. On the one hand lays copyright owners' concerns about protecting their intellectual property. On the other is the public's desire to apply traditional first sale privileges to digital works. Overarching both of these positions is a technological landscape presenting piracy concerns never before seen in the history of copyright.

This article explores the first sale doctrine as it pertains to digital works and proposes ways to make a digital first sale doctrine feasible. Part II describes the first sale doctrine as it has traditionally been applied to non-digital works. Part III discusses modern technology's impact on the distribution and use of copyrighted material. Part IV explores the means by which the first sale doctrine has grown inapplicable to digital works, addressing the use of license agreements, uncertainty as to the Copyright Act, and the DMCA provisions that render the first sale doctrine incompatible with digital works. Part V discusses the impacts on commerce resulting from frustration of the first sale doctrine. Part VI suggests technological methods to protect copyright owners' interests if a digital first sale doctrine were enacted. Part VII concludes by arguing that Congress should implement a digital first sale doctrine.

II. THE FIRST SALE DOCTRINE AS TRADITIONALLY APPLIED TO NON-DIGITAL WORKS

Under the Copyright Act, copyright owners enjoy six exclusive rights: reproduction, preparation of derivative works, distribution, public

3. 17 U.S.C. § 104(b) (2001).

4. US Copyright Office, DMCA Section 104 Report (Aug. 2001) (hereinafter Section 104 Report).

performance, public display, and digital transmission performance.[5] The first sale doctrine, as codified in Section 109 of the Copyright Act, limits a copyright owner's distribution right such that he can exploit the copyrighted work only through the point of first sale.[6] The first sale doctrine serves to balance copyright owners' rights with the public's interest in trading and alienating works and allows users, in effect, to partially participate in the distribution of copyrighted material. Under the doctrine, after the first sale has occurred, subsequent owners lawfully obtaining the work may freely alienate it.[7]

It is the first sale exception that has historically permitted owners of CDs, books and records to resell the works, give them to friends and family or donate them to libraries.[8] It is also the first sale exception that enables used CD stores and bookstores, such as Amazon.com's Z-shops, to capture the entire gain from reselling used versions of copyrighted works without having to share any of the money with the authors or publishers.[9] Finally, the first sale doctrine lets libraries freely lend books to anyone with a library card, again without any residual payment obligations to the author or publisher.[10]

The first sale exception originated from a judicially created doctrine rooted in the policy of prohibiting restraints on alienation of tangible property.[11] In 1908, the U.S. Supreme Court upheld the first sale doctrine in *Bobbs-Merrill Co. v. Straus*,[12] holding that although a copyright owner had an exclusive right to reproduce a copyrighted work, the owner could not restrict the market for resale of the work by imposing mandatory price constraints.[13]

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5. 17 U.S.C. § 106 (1999).

6. Section 109(a) states in relevant part: "Notwithstanding the provisions of section 106(3), the owner of a particular copy or phonorecord lawfully made under this title, or any person authorized by such owner, is entitled, without the authority of the copyright owner, to sell or otherwise dispose of the possession of that copy or phonorecord." 17 U.S.C. § 109(a) (1994).

7. 17 U.S.C. § 109 (1999).

8. Julie Hilden, *Letting Public Libraries Down: The Recent Copyright Office Report Misses A Chance to Support A Digital First Sale Doctrine for Libraries*, *at* http://writ.corporate.findlaw.com/hilden/20010906.html (Sept. 6, 2001).

9. *Id.*

10. *Id.*

11. Section 104 report, *supra* note 4, at 20.

12. Bobbs-Merrill Co. v. Straus, 210 U.S. 339 (1908). In *Bobbs-Merrill*, the plaintiff copyright owner of a book placed the following notice in copies of the book: "[t]he price of this book at retail is one dollar net. No dealer is licensed to sell it (the copies) at a less price, and a sale at a less price will be treated as an infringement of the copyright." *Id.* at 341. The defendant disregarded the plaintiff's notice and sold the books for eighty-nine cents. *Id.* at 342.

13. *Id.* at 350.

One year following the *Bobbs-Merrill* decision, Congress codified the first sale doctrine in the Copyright Act of 1909.[14] Intending to balance a copyright owner's right to control distribution of his work with the public's interest in alienating copies of the work,[15] Congress provided for the following in Section 27 of the 1909 Copyright Act:

> The copyright is distinct from property in the material object copyrighted, and the sale or conveyance, by gift or otherwise, of the material object shall not itself constitute a transfer of the copyright, nor shall the assignment of the copyright constitute a transfer of the title to the material object; but nothing in this title shall be deemed to forbid, prevent, or restrict the transfer of any copy of a copyrighted work the possession of which has been lawfully obtained.[16]

Section 109(a) of the Copyright Act preserves the 1909 statutory first sale doctrine by establishing a two-prong test.[17] In order to receive the privileges of the first sale doctrine in an infringement suit, the defendant must establish both prongs.[18] First, the defendant must own the copy of the work in question (e.g., a DVD, CD, book, etc.).[19] Ownership can be achieved either by virtue of a sale, gift, bequest or other transfer of title.[20] Ownership can also be achieved by nonconsensual transfer of title, such as when a creditor acquires a work through a judicial sale or court-compelled assignment.[21]

Because the first sale exception rests upon the principle that copyright owners receive full value for the work when it is first sold,[22] people with anything less than full "ownership" may not exercise the doctrine.[23] Merely possessing, works, therefore, "regardless of whether that possession is legitimate, such as by rental, or illegitimate, such as by theft,"[24] is insufficient for purposes of the first sale doctrine. A library patron that steals a checked out book and then sells it, therefore, would not only be converting the book itself, but would also be infringing the author's copyright in the book.

14. 17 U.S.C. § 109 (1999) (originally enacted as 17 U.S.C. § 27 (1977)).

15. Keith Kupferschmid, *Lost in Cyberspace: the Digital Demise of the First-Sale Doctrine*, 16 J. MARSHALL J. COMPUTER & INFO. L. 825, 832 (1998).

16. 17 U.S.C. § 27 (1977) (corresponds to 17 U.S.C. § 109 (1999)).

17. Section 104 Report, *supra* note 4, at 22.

18. 17 U.S.C. § 109(a) (1999).

19. *Id.*

20. MELVILLE B. NIMMER & DAVID NIMMER, NIMMER ON COPYRIGHT § 8.12[B][1] (2002) (hereinafter "NIMMER"); Section 104 Report, *supra* note 4, at 22.

21. CRAIG JOYCE ET AL., COPYRIGHT LAW 479 (4th ed. 1998).

22. PAUL GOLDSTEIN, COPYRIGHT: PRINCIPLES, LAW AND PRACTICE § 5.6.1.1 (1989).

23. *Id.*

24. NIMMER, *supra* note 20, § 8.12[B][1]; Section 104 Report, *supra* note 4, at 23.

The first sale doctrine's second prong requires that the defendant's copy have been lawfully made.[25] The copyright owner or the law, therefore, must have authorized the making of the copy in question.[26] Illegal copies, regardless of whether or not the owner has knowledge of piracy, do not receive the benefit of the first sale doctrine.[27] An unsuspecting holder of a pirated CD, therefore, cannot legally resell it to a used CD store without violating the copyright owner's distribution right.[28]

A. *Limitations on the First Sale Doctrine*

The first sale doctrine has several important limitations. First, the doctrine applies only to the distribution right.[29] It does not protect users from liability in instances involving unauthorized reproduction, public performance, or adaptation of a copyrighted work.[30] Thus, even though the first sale doctrine may permit the resale of a copyrighted work, a person could face copyright infringement liability for reproducing, publicly performing or adapting the work without authority.[31]

Second, the first sale doctrine permits transfers only with respect to the "particular" copy of the work in a person's possession.[32] The doctrine grants no rights to the user in the work itself.[33] Thus, while a person could resell his copy of a book, he has no rights to copies of the work owned by others nor to any rights in the story reflected on the book's pages.[34]

The final limitation exhibits Congress' fear of applying the first sale doctrine in instances where practical circumstances threaten the ability of a copyright owner to receive full value for sale of a work.[35] As codified in Section 109(b) of the Copyright Act, owners of phonorecords and software may not dispose of such works via rental, lease or lending.[36] Section 109(b) is the statutory response to concerns that the rental of sound recordings and software permitted users to inexpensively rent

25. 17 U.S.C. § 109(a) (1999).
26. NIMMER, *supra* note 20, § 8.12[B][4]; Section 104 Report, *supra* note 4, at 23.
27. *Id.*
28. Kupferschmid, *supra* note 15, at 833.
29. 17 U.S.C. § 109(a) (1999).
30. Kupferschmid, *supra* note 15, at 833.
31. *Id.*
32. 17 U.S.C. § 109(a) (1999).
33. Kupferschmid, *supra* note 15, at 833.
34. *Id.*
35. *See* Goldstein, *supra* note 22, at 601–03.
36. 17 U.S.C. § 109(b) (1999).

works and then make an illegal copy, thereby reducing purchases of new works.[37]

III. MODERN TECHNOLOGY'S IMPACT ON COPYRIGHT

Modern technology affects our daily lives in innumerable ways, including how we work, communicate, consume goods and services, and relax.[38] The growth rate of e-commerce is staggering. Whereas in the fourth quarter of 1999 retail e-commerce sales were $5.48 billion, $11.17 billion in e-commerce sales were generated in the fourth quarter of 2001, an increase of 104% over the two-year period.[39] Further, according to estimates made in 2000 by Forrester Research, online business-to-consumer sales of digitally downloaded products will increase from $100 million, or 3% of all online sales in 2000 to $2.9 billion, or 22% of total online sales by 2004.[40] The most dramatic growth in digitally-downloaded products will likely be in the music sector, where sales from digital downloads could rise from one-million dollars, or .1% of all online music sales in 1999 to one billion dollars, or 25% of all music sold online by 2004, followed by software (rising from $87 million, or 7% of all online software sales to $1.3 billion, or 40% by 2004) and digital books (rising from $12 million, or 1% of online sales in 1999 to $426 million, or 13% of all online book sales by 2004).[41]

While modern technology presents innumerable benefits, including ease of access to and rapid transmission of information, it poses considerable challenges to traditional copyright law. Modern technological developments drastically alter the methods by which copyrighted works are used as well as disrupt the economics of prior distribution models. Due to the ease of pirating copyrighted works, digital technology potentially exposes copyright owners to tremendous losses.

In the past, pirates found it difficult to duplicate and distribute copyrighted works. A century ago the only way to copy a book was to own a printing press or hand copy the work, both requiring considerable skill,

37. *See* S. REP. NO. 98-162, at 4 (1983) (noting that "[t]he first sale doctrine was originally adopted by the courts to give effect to the early common law rule against restraints on alienation of tangible property . . . The Committee concludes that the first sale doctrine was never intended to allow or to sanction commercial record rentals which lead inevitably to widespread and unauthorized home taping.").

38. National Telecommunication and Information Administration DMCA Rep., *at* http://www.ntia.doc.gov/ntiahome/occ/dmca2001/104gdmca.htm (March 2001).

39. *See* U.S. Census Bureau, Economics and Statistics Administration, Fourth Quarter 2001 Release, *at* http://www.census.gov/mrts/www/current.html (last revised Nov. 22, 2002).

40. Forrester Research, *Spectacular Growth for Digital Delivery*, Nua Internet Surveys, *at* http://www.nua.com/surveys/index.cgi?f=VS&art_id=905355577&rel=true (Feb. 7, 2000).

41. *Id.*

money and time.[42] Once copied, distributing the book was equally labor intensive, involving physical delivery of each copy to its destination. Distribution of traditional works thus involved numerous transaction costs that were in most instances directly proportional to the size of the work and the geographic distance between the distributor and the recipient. Such impediments to piracy continued throughout history until even as recently as the last decade. While technology available in the 1980s such as the photocopier and VCR reduced the cost, skill and time required to pirate a book or movie, distribution of the pirated material still involved costly physical delivery of each copy.

Modern day pirates have a much easier job. Unlike traditional copyrighted material, digitized works can be readily and mass copied by the effortless stroke of a key or click of a mouse. Once copied, users can log onto the internet and share files with their neighbors as well as with people located on different sides of the globe for the same virtually free price. Limited only by the speed of one's internet connection, users can distribute unlimited quantities of pirated copies to a virtually unlimited number of users.

Further, copying digital files does not result in degradation of the file's quality.[43] Thus, unlike the limited life of a book or a cassette that erodes with each use, a digital file, barring accidental erasure or corruption from a virus, can be used indefinitely.[44] Once transferred, a copy exists in perpetuity and permanently threatens to dilute the value of the original work.[45]

Finally, the compactness of works in digital form presents new concerns.[46] Digitized works "are essentially an invisible string of stored electrical voltages (the high voltage corresponding to an encoded '1,' the low to '0,' which are binary representations of the individual elements of the work, whether they be letters or numbers or a point on a bit map)."[47] Unlike traditional media, which required vast storage space, the contents of an entire library can be stored on a single hard drive if converted to digital form.[48] A billion bits of data occupying merely one gigabyte of hard-drive space would require a stack of paper three stories tall if it were to be typed in double spaced format.[49] Users can thus maintain

42. Pamela Samuelson, *Digital Media and The Changing Face of Intellectual Property Law*, 16 RUTGERS COMPUTER & TECH. L.J. 323, 324 (1990).

43. Kupferschmid, *supra* note 15, at 848.

44. *See id.*

45. *Id.*

46. Samuelson, *supra* note 42, at 334.

47. *Id.*

48. *Id. at* 335.

49. *Id.*

mass quantities of digitized works, thereby increasing the pool from which works can be accessed and selected for piracy.

These attributes not only facilitate piracy but also undermine the ability of copyright law to prevent and deter it. Given that in most cases computers are required to enjoy works in digital format, each user has the proverbial printing press at his disposal.[50] Gone are the days where a copyright owner could successfully eradicate piracy by focusing his efforts on shutting down renegade printing presses that were already scarce due to the time, expense and skill they required to operate.[51] Now, every person with a computer has the ability to pirate copyrighted works in his living room and transmit them anywhere in the world at the touch of a key.

IV. WHY THE FIRST SALE DOCTRINE CEASES TO EXIST WITH RESPECT TO DIGITAL WORKS

Why doesn't the first sale doctrine apply to the copy of RIDING THE BULLET you purchased? A combination of three factors limits application of the first sale doctrine to digital works: first, license agreements imposed by software manufacturers typically prohibit exercise of the first sale doctrine; second, traditional copyright law may not support application of the first sale doctrine to digital works; finally, the DMCA functionally prevents users from making copies of digitized works and prohibits the necessary bypassing of access control mechanisms to facilitate a transfer.

A. *License Agreements Limit Application of the First Sale Doctrine*

Responding to a landscape fraught with danger for copyright owners, the software industry turned to contract law in its sales of software to avert unauthorized copying. Rather cleverly, software companies attempted to structure the purchase of software as the grant of a license rather than a sale that transferred ownership.[52] Titled "shrink-wrap licenses" because they were deemed executed upon the consumer's opening of the shrink-wrap around the box containing the software,[53] the

50. *Id*. at 326.

51. *Id.* at 327.

52. As an example, the click-wrap license agreement accompanying Microsoft Reader 2.1 states "The software product is licensed, not sold."

53. *See* Mark A. Lemley, *Intellectual Property and Shrinkwrap Licenses*, 68 S. CAL. L. REV. 1239, 1241–42 (1995). A typical shrink-wrap license states the following: "[Vendor] is providing the enclosed materials to you on the express condition that you assent to this software license. By using any of the enclosed diskette(s), you agree to the following provisions.

license typically "imposes restrictions on use, reproduction, transfer and modification of the software program by the consumer."[54] Similar licenses, called "click-wrap" and "web-wrap" licenses, require users to click the "Yes" box at the bottom of the license agreement before permitting installation of software purchased in a store or over the internet.[55]

The use of such licenses attempts to accomplish two objectives. First, it provides software makers with contract remedies in addition to copyright law remedies when users breach license agreements by pirating or making unauthorized copies. Second, shrink-wrap licenses attempt to eliminate the first sale doctrine by reducing a copyright user's status from that of owner to a mere possessor, thereby rendering the user unable to meet the doctrine's ownership requirement.[56] By preventing the ability of users to transfer licensed works, software firms alleviate concerns that used versions of the work might displace purchases of new versions.

Shrink-wrap licenses, however, fail to entirely serve their objectives. The licenses have become widely ignored by users who copy and share the software with others in spite of the license terms.[57] As for attempting to preclude consumers from exercising the first sale doctrine, the legal profession considered shrink-wrap licenses and their progeny "largely, if not completely, unenforceable."[58] Many courts deemed transactions involving shrink-wrap licenses sales rather than licenses,[59] thereby preserving application of the first sale doctrine to the work. The courts held that in order to qualify as a valid license and legally exclude first sale privileges, the licensee must sign the agreement rather than click the "Yes" box.[60]

The use of license agreements to abrogate consumers' rights raised concerns that the software industry was obtaining too much power and becoming unduly repressive. In response to these issues, Representatives Rick Boucher (R-VA) and Thomas Campbell (R-CA) proposed H.R.

If you do not agree with these license provisions, return these materials to your dealer, in original packaging within three days from receipt, for a refund." Daniel J. Caffarelli, *Crossing Virtual Lines: Trespass on the Internet*, 5 B.U. J. SCI. & TECH. L. 6, at ¶ 35 (1997) (quoting language from license agreement at issue in Vault Corp. v. Quaid Software, Ltd., 847 F.2d 255, 257 n.2 (5th Cir. 1988)).

54. Batya Goodman, *Honey, I Shrink-Wrapped the Consumer: The Shrink Wrap Agreement as An Adhesion Contract*, 21 CARDOZO L. REV. 319, 332 (1999).

55. *See id.* at 334.

56. *See* Goodman, *supra* note 54, at 332.

57. *See* Samuelson, *supra* note 42, at 327–28.

58. *Id.*

59. *See e.g.*, Vault Co. v. Quaid Software Ltd., 847 F.2d 255 (5th Cir. 1988).

60. *See* MARY BRANDT JENSEN, DOES YOUR PROJECT HAVE A COPYRIGHT PROBLEM?: A DECISION-MAKING GUIDE FOR LIBRARIANS 77 (1996).

3048 to the 105th Congress.[61] Entitled the Digital Era Copyright Enforcement Act, the controversial bill aimed to prevent copyright owners from using nonnegotiable license terms to revoke or narrow rights and usage privileges otherwise allowed under the Copyright Act.[62]

While Congress did not enact H.R. 3048, the bill would have rendered unenforceable non-negotiable license terms that "limit the reproduction, adaptation, distribution, performance, or display, by means of transmission or otherwise, of material that is uncopyrightable . . . or [terms that] abrogate or restrict the limitations on exclusive rights specified in sections 107 through 114 and sections 117 and 118."[63] Essentially, the bill would have overruled *ProCD, Inc. v. Zeidenberg*,[64] a seventh circuit case upholding the enforceability of a shrink-wrap license that prohibited the copying of uncopyrightable telephone book listings.[65] In addition, the bill would have eradicated the software industry's practice of using license agreements to reduce fair use rights and first sale privileges.

B. *Confusion as to Whether the First Sale Doctrine Applies to Digital Works*

On its face, the first sale doctrine as codified in the Copyright Act does not distinguish between digital and non-digital works.[66] Strong arguments exist on both sides of the spectrum as to whether the first sale doctrine applies to digital works.

a. Arguments that the First Sale Doctrine Does Not Apply to Digital Works

Three arguments assert that the first sale doctrine does not apply to digital works. First, transmitting a digitized work to another user requires that the transferor make a duplicate of the original copy, which is then passed on to the recipient.[67] As a result of the copying necessary to facilitate the transfer of digitized works, the copyright owner's reproduction right may be implicated—a right to which the first sale exception does not apply.[68]

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61. Digital Era Copyright Enhancement Act, H.R. 3048, 105th Cong. (1997).

62. *See* Introduction of the Digital Era Enforcement Act, 105th Cong. (1997) (statement of Rep. Boucher), *available at* http://rs9.loc.gov/cgi-bin/query/C?r105:./temp/~r105HPo0y4 (last visited May 6, 2002).

63. Digital Era Copyright Enhancement Act, *supra* note 61, § 7.

64. *See* ProCD, Inc. v. Zeidenberg, 86 F.3d 1447 (7th Cir. 1996).

65. *Id.*

66. 117 U.S.C. 109.

67. Kupferschmid, *supra* note 15, at 838.

68. *Id.*

How the duplicate copy is stored on the recipient's computer potentially impacts the analysis of whether the creation of a copy has occurred. If the file is stored in the computer's Read Only Memory ("ROM"),[69] then it is held in the computer's memory for an indefinite period of time.[70] If a user saves a file such as an MP3 in his computer's hard drive, the file remains stored until it is deleted. If, however, rather than downloading the MP3 the user merely clicks on a link enabling him to hear a streaming version of the song, the work is stored in the computer's Random Access Memory ("RAM"). Unlike ROM or a hard drive, RAM is a temporary storage medium that retains data only until the program using the data is closed or the computer is switched off.[71]

Whether reproduction of a copyrighted work made in a computer's hard drive, ROM or RAM falls within the Copyright Act's definition of "copies" requires a close examination of the statute and caselaw. If, in transmitting a copyrighted work to a friend under the first sale doctrine, the duplicate copy created qualifies as a "copy" under the Copyright Act, then the process infringes the copyright owner's exclusive reproduction right.[72] Section 101 of the Copyright Act defines "copies" as: "[M]aterial objects, other than phonorecords, in which a work is fixed by any method now known or later developed, and from which the work can be perceived, reproduced, or otherwise communicated, either directly or with the aid of a machine or device."[73]

Starting with the most ephemeral of the three storage media, RAM chips are "electronic integrated circuits, etched and deposited on a wafer of semiconducting material (such as silicon), which are capable of storing binary information in the form of electrical impulses."[74] As such, there is little question as to whether a RAM chip is a "material object."[75] With the aid of a computer, works stored in RAM can be "perceived, reproduced, or otherwise communicated."[76] Of critical importance, therefore, is whether a reproduction made in RAM is "fixed."[77]

69. Unlike RAM, once data has been written onto a ROM chip, it cannot be removed and can only be read. Webopedia, *at* http://www.webopedia.com/Term/r/rom.html (last visited Dec. 01, 2002). ROM typically stores critical programs such as the program that boots the computer, and also stores data associated with printers such as fonts. *Id.*

70. *See* Section 104 Report, *supra* note 4, at 107; *see also* Apple Computer v. Formula Int'l, Inc., 594 F. Supp. 617, 621–22 (Dist.Ct.C.D.Cal. 1984).

71. *See* Section 104 Report, *supra* note 4, at 107–08.

72. *See* 17 U.S.C. 106.

73. 17 U.S.C. § 101 (1999).

74. Section 104 Report, *supra* note 4, at 109.

75. 17 U.S.C. § 101 (1999).

76. *Id.*

77. *Id.*

Section 101 of the Copyright Act provides clarification as to whether a work is "fixed" by requiring that the embodiment of the work in a copy be "sufficiently permanent or stable to permit it to be perceived, reproduced, or otherwise communicated for a period of more than transitory duration."[78] While intuitively a copy made into the RAM of a computer would seem to lack the requisite permanence and thus fail to qualify as a "copy," the Federal Government and much of the copyright community concludes that RAM copies are "fixed" in a manner sufficient to qualify as a copy for the purposes of the law.[79] The executive branch, in a report entitled "Intellectual Property and the National Information Infrastructure,"[80] clarified its position on the issue by stating "when a work is placed into a computer, whether on a disk, diskette, ROM, or other storage device or in RAM for more than a very brief period, a copy is made."[81]

The legislative branch takes a similar position, asserting that "because works in a computer storage may be repeatedly reproduced, they are fixed and, therefore, are copies."[82] Further, Congress' enactment of Section 117 of the Copyright Act permitting users to make archival copies in RAM "necessary" to run a computer program may impliedly confirm Congress' view that RAM copies are "fixed" for the purposes of copyright law.[83]

The judiciary likewise holds that RAM copies fall within the Copyright Act's definition of copies.[84] Numerous cases have held that RAM copies are sufficiently fixed.[85] In 1993, the ninth circuit in *MAI Computer*

78. *Id.*

79. Kupferschmid, *supra* note 15, at 840.

80. BRUCE A. LEHMAN, Statement of Bruce A. Lehman on S. 1284 and H.R. 2441, INTELLECTUAL PROPERTY AND THE NATIONAL INFORMATION INFRASTRUCTURE: THE REPORT OF THE WORKING GROUP ON INTELLECTUAL PROPERTY RIGHTS, *available at* http://www.uspto.gov/web/offices/com/doc/ipnii/nii-hill.html (Sept. 1995).

81. Kupferschmid, *supra* note 15, at 841–42 (citing Lehman, *supra* note 80).

82. National Commission on New Technological Uses of Copyrighted Works ("CONTU"), Act of Dec. 31, 1974, Pub. L. No. 93-573, tit. 2, 206(b), 88 Stat. 1873, *codified as amended* in 2 U.S.C. § 206(b) (Supp. IV 1974), *reprinted in* 1974 U.S.C.C.A.N. 6849.

83. Lemley, *supra* note 53, at 197.

84. Kupferschmid, *supra* note 15, at 843.

85. *See e.g.* Stenograph L.L.C. v. Bossard Assocs., Inc., 144 F.3d 96 (D.C. Cir. 1998); Vault Corp. v. Quaid Software, 847 F.2d 255, 260 (5th Cir. 1998) (noting that "the act of loading a program from a medium of storage into a computer's memory creates a copy of the program"); Marobie-Fl., Inc. v. Nat'l Ass'n of Fire Equip. Distribs. & Northwest Nexus, Inc., 983 F. Supp. 1167 (N.D. Ill. 1997); *In Re* Indep. Serv. Orgs. Antitrust Litig., 910 F. Supp. 1537 (D. Kan. 1995); Advanced Computer Servs. of Mich., Inc. v. MAI Sys. Corp., 845 F. Supp. 356 (E.D. Va. 1994); Final Report of the National Commission on the New Technological Uses of Copyrighted Works, at 13 (1978) (indicating that "the placement of a work into a computer is the preparation of a copy"); NIMMER, *supra* note 20, § 8.08 (noting that "[i]nputting a computer program entails the preparation of a copy.").

Systems Corp. v. Peak Computer, Inc. addressed this issue as it pertained to the loading of diagnostic software into a computer's RAM.[86] There, the defendant owned a legitimate copy of plaintiff's software.[87] In using the software, defendant loaded it into the RAM of its clients' many computers. Because the loading of plaintiff's software into a computer's RAM enabled the defendant technicians to view the software's systems error log, the court held that the RAM copy was "sufficiently permanent or stable to permit it to be perceived, reproduced, or otherwise communicated for a period of more than transitory duration."[88] Accordingly, the court held that the loading of software into RAM creates a copy under the Copyright Act.[89]

If the determination is correct that RAM copies are sufficiently "fixed," then copies of works stored in a computer's ROM as well as works stored on a hard drive should likewise qualify as "fixed" due to the relative permanence of these media. The process of making a duplicate copy of a work, therefore, even for a limited period of time, implicates the copyright owner's reproduction right irrespective of how the copy is transmitted and irrespective of whether the copy is stored in the computer's hard drive, its ROM or its RAM.[90] The first sale doctrine is not an exception to the reproduction right. Thus, lacking authorization from the owner or any other exemption in the Copyright Act, the placement of the duplicate copy into the receiving computer's memory would constitute copyright infringement.[91]

The second argument that the first sale doctrine does not apply to digital works is that in transferring a digitized work, the user is not transmitting her "particular" copy.[92] Rather, the original copy remains on the user's computer while the duplicate copy is sent to the recipient.[93] This "second-generation" copy is clearly separate from the copy residing on the transmitting computer.[94] As such, the first sale doctrine's require-

86. MAI Computer Sys. Corp. v. Peak Computer, Inc., 991 F.2d 511 (9th Cir. 1993).

87. *Id.* at 519.

88. *Id*. at 518.

89. *Id.*

90. Kupferschmid, *supra* note 15, at 838.

91. *Id.*; The Section 104 Report, in addition to addressing a digital first sale doctrine and fair use, addresses the issue of temporary buffer copies stored in RAM. Section 104 Report, *supra* note 3, at 106–148. After conducting a fair use analysis and examining the interests at hand, the Section 104 Report concludes by suggesting that "Congress enact legislation amending the Copyright Act to preclude any liability arising from the assertion of a copyright owner's reproduction right with respect to temporary buffer copies that are incidental to a licensed digital transmission of a public performance of a sound recording and any underlying musical work." *Id.* at 142–43.

92. Kupferschmid, *supra* note 15, at 843.

93. *Id.*

94. *Id.* at 844–45.

ment that the transmitted work be the user's particular copy is not satisfied when a digital work is transferred.

Finally, application of the exception to digital works could undermine the purpose of the first sale doctrine itself.[95] The first sale exception serves to promote the alienation and trade of copyrighted works while balancing the commercial exploitation interests of the copyright owner.[96] Where the first sale exception has impaired the copyright owner's legitimate interests in exploitation, Congress has limited the scope of the doctrine codified in the Copyright Act.[97] Application of the first sale doctrine to digital works clearly creates potential for piracy that could dramatically interfere with copyright owners' ability to commercially exploit their works. As such, application of the first sale doctrine to digital works could upset the delicate balance historically achieved by the first sale doctrine.

In addition to potentially interfering with the purpose of the first sale doctrine, application of the exception to digital transmissions could inhibit rather than promote alienation and trade in copyrighted works.[98] Because digital works can be readily copied, copyright owners may fear piracy and limit distribution of their works to traditional methods.[99] A reduction in the number of works released digitally would deny the public of easy and instant access to works via the internet—the primary benefit that modern technology presents.[100]

b. Arguments that the First Sale Doctrine Does Apply to Digital Works

Strong arguments can also be made that the first sale doctrine applies to digital works. The Library Associations[101] vigorously asserted these views in their reply comments to the Copyright Office's solicitations on the effects of the DMCA.[102] The arguments take a broad

95. *Id.* at 852.

96. *Id.*

97. *Id.* at 852. *See also* discussion on § 109(b) of the Copyright Act, *infra* Part II.A.

98. Kupferschmid, *supra* note 15, at 852–53.

99. *Id.* at 853.

100. *Id.*

101. The library associations submitting reply comments regarding the DMCA included the American Library Association, the American Association of Law Libraries, the Association of Research Libraries, the Medical Library Association, and the Special Library Association. *See* Index of Reply Comments: Joint Study on 17 U.S.C. Sections 109 and 117 Required Pursuant to DMCA Section 104, *available at* http://www.loc.gov/copyright/reports/studies/dmca/reply/ (last modified Apr. 22, 2002).

102. Reply Comments of the Library Associations Before the Library of Congress, The United States Copyright Office and The Department of Commerce, National Telecommunications and Information Administration, Washington, D.C., *available at* http://www.arl.org/info/frn/copy/letter060500.html (Sept. 5, 2000) (hereinafter "Reply Comments of Library Associations").

approach, urging a more principled application of the Copyright Act and first sale doctrine rather than a strict formalistic one.[103] As stated by the Library Associations, a "[f]ormalistic application of the exclusive reproduction right must not prevent consumers from utilizing new technologies, and it must not prevent traditional user rights [such as the first sale doctrine] from being replicated in new technological environments."[104] Supporting this position are United States Supreme Court cases such as *Twentieth Century Music Corp. v. Aiken*[105] and *Fortnightly Corp. v. United Artists Television, Inc.*,[106] which illustrate the Supreme Court's willingness to adapt the Copyright Act to technological changes.

The issue before the Supreme Court in *Aiken* provides a close analogy to the state of the first sale doctrine with respect to current technology. There, plaintiff copyright owners sued a storeowner, alleging that by receiving a radio station broadcast of plaintiffs' copyrighted songs the storeowner infringed the plaintiffs' exclusive right to perform the work themselves.[107] In holding that the reception of a radio broadcast by the storeowner did not infringe the copyright owners' performance right, [108] the Court reasoned that while the legislative history of the 1909 Copyright Act aimed to prevent unauthorized performances of copyrighted material in public places such as concert halls and theaters, "it was never contemplated that the members of the audience who heard the composition would themselves also be simultaneously 'performing,' and thus also guilty of infringement."[109]

The *Aiken* decision is of particular significance due to the manner in which the court dealt with the implications of radio broadcast technology on the performance right. In reconciling the new technology with the seemingly incongruous statute, the court adapted the Copyright Act to the circumstances at hand, stating:

> [A] statute may be applied to new situations not anticipated by Congress, if, fairly construed, such situations come within its intent and meaning . . . . While statutes should not be stretched to apply to new situations not fairly within their scope, they should

103. *See id.*

104. *Id.*

105. Twentieth Century Music Corp. v. Aiken, 422 U.S. 151, 158 (1975).

106. Fortnightly Corp. v. United Artists Television, Inc., 392 U.S. 390 (1968) (stating that "our inquiry cannot be limited to ordinary meaning and legislative history, for this is a statute that was drafted long before the development of the electronic phenomena with which we deal here . . . . In 1909 radio itself was in its infancy, and television had not been invented. We must read the statutory language of 60 years ago in the light of drastic technological change.").

107. Aiken, 422 U.S. at 153.

108. *Id.* at 162–64.

109. *Id.* at 157.

> not be so narrowly construed as to permit their evasion because of changing habits due to new inventions and discoveries.[110]

Adhering to the court's reasoning in *Aiken*, the creation of digital technology should not alter application of the Copyright Act. The first sale doctrine aims to balance the reward to copyright owners with the policy of promoting unrestricted alienability of property throughout society. Although using modern technology to transmit a digital copyrighted work results in a copy being transferred that may not be the user's "particular copy," and although such disposition may implicate the copyright owner's reproduction right, the Copyright Act must not be read so narrowly as to disregard the first sale doctrine.

Another reason that the first sale doctrine arguably applies to digital works is that the first sale doctrine focuses on the scope of the property interest being transferred rather than "the nature of the land or chattel that is the object of that property interest."[111] That the record rental amendment as codified in Section 109(b) of the Copyright Act distinguishes between ownership and possession by stating that the first sale doctrine does not "extend to any person who has acquired possession of the copy or phonorecord . . . without acquiring ownership of it" supports the contention that "the first sale doctrine applies according to the scope of the property interest that has been transferred, rather than according to the object of that interest."[112] Denying application of the first sale doctrine to a work that is rightfully owned merely because of its embodiment as a digital object, therefore, is inconsistent with the spirit of the first sale doctrine.[113]

The final argument that the first sale doctrine should apply to digital works is that the underlying objective of the first sale doctrine—to facilitate the continued flow of copyrighted works throughout society—should prevail over concerns about protecting intellectual property rights.[114] The manner in which the first sale doctrine has been treated by U.S. courts "has consistently reflected the belief that the public benefit derived from the alienability of creative works outweighs the increased incentive to create that would stem from granting authors perpetual

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110. *Id.* at 158 (citing Jerome H. Remick & Co. v. American Automobile Accessories Co., 5 F.2d 411, 411 (6th Cir. 1925).

111. Reply Comments of Library Associations, *supra* note 102.

112. *Id.*

113. *Id.*

114. *See* Register's Report on the General Revision of the U.S. Copyright Law (1961) (explaining the purpose of public interest limitations on author's rights), *reprinted in* NIMMER, *supra* note 20, at App. 14.

control over copies of a work."[115] Where the interests of copyright owners and the public conflict, it has been recognized that "the public interest must prevail."[116] As stated by the Supreme Court in *Aiken*,

> [T]he immediate effect of our copyright law is to secure a fair return for an 'author's' creative labor. But the ultimate aim is, by this incentive, to stimulate artistic creativity for the general public good. 'The sole interest of the United States and the primary object in conferring the [copyright] monopoly,' this Court has said, 'lie in the general benefits derived by the public from the labors of authors.' When technological change has rendered its literal terms ambiguous, the Copyright Act must be construed in light of this basic purpose.[117]

Copyright policy thus mandates application of the first sale doctrine with respect to digital works.[118] At a minimum therefore, if the first sale doctrine as drafted in the Copyright Act does not apply to digitized works, some method of facilitating a first sale doctrine must be created.

C. *The DMCA's Provisions Prohibit Application of the First Sale Doctrine to Digital Works*

Assuming that the first sale doctrine does apply to digital works, were a shrink or click-wrap license deemed unenforceable, or were a user able to successfully refuse to consent to such a license by clicking the "Yes" box and subsequently sending notice to the software manufacturer that he reserves his rights under the Copyright Act, the DMCA would further obstruct exercise of the first sale doctrine.

In response to modern technology and the corresponding concerns about piracy in the digital era, Congress enacted the DMCA. By 1998, the year of the DMCA's enactment, concerns arose that traditional copyright law would be rendered inadequate for the changing technological landscape due to the public's growing use of the internet, digital media, and personal computers capable of copying digital works.[119] The DMCA

115. *See id.* (citing Burke & Van Heusen, Inc. v. Arrow Drug, 233 F. Supp. 881, 884 (E.D Pa. 1964); Blazon, Inc. v. Deluxe Game Corp., 268 F. Supp. 416, 434 (S.D.N.Y. 1965) (quoting MELVILLE B. NIMMER, NIMMER ON COPYRIGHT § 103.31 (1976) for the proposition that "[after the first sale], the policy favoring a copyright monopoly for authors gives way to the policy opposing restraints of trade and restraints on alienation."); C.M. Paula Co. v. Logan, 355 F. Supp. 189, 191 (N.D. Tex. 1973)).

116. Register's Report on the General Revision of the U.S. Copyright Law (1961) (explaining the purpose of public interest limitations on author's rights), *reprinted in* NIMMER, *supra* note 20, at App. 14.

117. Aiken, 286 U.S. at 156 (citing Fox Film Corp. v. Doyal, 286 U.S. 123, 127 (1932)).

118. *See* Reply Comments of the Library Associations, *supra* note 102.

119. See *generally* H.R. Rep. No. 105-551, pt. 2, at 21 (1998).

"was designed to facilitate the robust development and world-wide expansion of electronic commerce, communications, research, development, and education" by "mak[ing] digital networks safe places to disseminate and exploit copyrighted materials."[120] The DMCA serves "to advance two mutually supportive goals: the protection of intellectual property rights in today's digital environment and the promotion of continued growth and development of electronic commerce."[121]

In attempting to accomplish these objectives, the DMCA takes a sweeping approach. Section 1201 of the DMCA, known as the "anti-circumvention provision," prohibits copyright users from circumventing technological measures controlling access to a copyrighted work.[122] Under the DMCA, "to 'circumvent a technological measure' means to descramble a scrambled work, to decrypt an encrypted work, or otherwise avoid, bypass remove, deactivate, or impair a technological measure, without the authority of the copyright owner."[123]

Section 1201 essentially divides technological measures into two categories: "measures that prevent unauthorized *access* to a copyrighted work and measures that prevent unauthorized *copying* of a copyrighted work."[124] With respect to the act of circumvention itself, Section 1201 permits the latter but prohibits the former.[125] The distinction between unauthorized access and unauthorized copying attempts to preserve fair use rights with respect to digital copyrighted works by permitting circumvention of anti-copying software to make back up copies.[126]

Although the DMCA does not expressly forbid exercise of fair use with respect to digital works, its provisions render fair use functionally infeasible. Digitized works contain anti-copying encryption software that must be cracked in order to make a copy.[127] Section 1201 (a)(E)(2) of the DMCA prohibits the making or selling of devices or services that are used to circumvent access or anti-copying encryption if the devices or services are primarily designed or produced to circumvent; have only limited commercially significant purpose or use other than to circumvent; or they are marketed for use in circumventing.[128] Because such devices or services cannot lawfully be provided, users wishing to

120. S. Rep. No. 105-190, at 1–2 (1998).

121. H.R. Rep. No. 105-551, pt. 2, at 23 (1998).

122. 17 U.S.C. § 1201(a) (2001).

123. 17 U.S.C. § 1201(a)(3)(A) (2001).

124. The Digital Millennium Copyright Act of 1998, U.S. Copyright Office Summary, Dec. 1998 at 3–4.

125. *Id.* at 4.

126. *Id.*

127. Ken Arromdee, Reply Comments to DMCA Section 104 Report, at 4, *available at* www.loc.gov/copyright/1201/comments/reply/056arromdee.pdf (Mar. 29, 2000).

128. *Id.*; 17 U.S.C. § 1201(a)(E)(2) (2001).

exercise their fair use rights and copy an encrypted digital work must do so without enlisting the help of others. By virtue of the fact that few consumers possess the necessary skills and willingness to write their own decryption software, fair use is an illusory right under the DMCA.

Application of the DMCA to eBooks provides a striking illustration of this phenomenon. When a user purchases an eBook, the file is stored onto the hard drive of the computer used to download the file. Should the user at any point wish to make a digital copy of the file or even print the eBook out onto paper, Adobe's eBook Reader anti-copying software prevents him from doing so. Although making a copy is perfectly legal under the DMCA, the user will most likely lack the skills necessary to crack the anti-copying mechanism. Barring the user's ability to find some sort of illegal software that enables copying, the user cannot exercise his fair use rights. The same is true with respect to software programs installed on a computer. An unwitting consumer using a Windows operating system, for example, would find that attempts to copy the desired program by dragging the icon to the floppy drive results merely in the shortcut to the program being copied rather than the software itself.

In addition to preventing fair use, the DMCA's provisions frustrate exercise of the first sale doctrine. Unlike digital works stored on portable media such as CDs and DVDs that can be readily disposed, works residing on a computer's hard drive (such as an eBook or software program) cannot be transferred without either transferring the actual computer or making a copy of the work.[129] In addition to the requirement that the transferor have the ability to make a copy of the work, exercise of the first sale doctrine also requires that the recipient of the work be able to access the work once it is received. Assuming a user successfully hacks the file's anti-copying software and then transfers the work, the DMCA continues to prevent exercise of the first sale doctrine by prohibiting circumvention of the work's access control device.

Given that most if not all digital works that are sold (e.g., authorized mp3s, e-books, and software) contain encryption devices that deny access to anyone other than the purchaser, the recipient of a transferred copy would lack authority to access it. In the case of an eBook, the eBook cannot be read by the recipient unless the certificate to his reader software matches that of the computer on which the eBook was downloaded.[130] Software programs possess similar access restrictions,

129. *See* Kupferschmid, *supra* note 15, at 838.

130. *See* Adobe Acrobat eBook Reader Version 2.2 for Windows Read Me File; *see also* Microsoft Reader 2.0 Activation FAQ, *available at* http://www.microsoft.com/reader/pc_activation.asp (last visited Dec. 1, 2002).

requiring the input of a product key or code. Microsoft employs encryption called Product Activation with its Windows XP and Office XP software that requires users to contact a Microsoft operated clearinghouse.[131] Once in touch with the user, the clearinghouse enables the user to access the software by providing her with an installation ID that is tied to her hardware configuration.[132] If users install the software without obtaining the installation ID from the clearinghouse, the software stops working after 14 days has elapsed (or after the software is opened 50 times in the case of Office XP) and directs users to the clearinghouse's internet site.[133] Were a user to transfer the software to a friend, therefore, the clearinghouse would not recognize the friend's hardware configuration and the encryption device would prevent the friend from accessing the software.

Essentially, the DMCA eliminates the practical means by which the fair use and first sale doctrines can be used in connection with many digital works. For those that violate the DMCA's provisions, Congress empowered the courts to impose both criminal and civil liability.[134] Plaintiffs in a civil suit may seek temporary and permanent injunctions, damages, recovery of costs, reasonable attorney's fees, and the destruction of any device or product involved in the violation that is in the custody or control of the violator.[135] Defendants violating the DMCA willfully and for purposes of commercial advantage or private financial gain face criminal penalties of up to $500,000 in fines and/or five years imprisonment.[136]

V. EFFECTS OF FRUSTRATING THE FIRST SALE DOCTRINE

The incompatibility of the first sale doctrine with digital works enables copyright owners to extend their rights beyond the first sale of a digital work to preclude copyright users from reselling or transferring digital works. As such, by employing copyright protection technology that prevents copying and denies access to everyone but the original purchaser, copyright owners can essentially remove used versions of the digital work from the market, thereby forcing interested consumers to

131. Mary Jo Foley, *Microsoft bolsters anti-piracy measures*, CNET News.com, *available at* http://news.com.com/2009-1001-250936.html?legacy=cnet (Jan. 12, 2001).

132. Joe Wilcox, *Microsoft's XP: Hardware changes a turnoff*, CNET News.com, *available at* http://news.com.com/2100-1001-269085.html?legacy=cnet (June 27, 2001); Foley, *supra* note 131.

133. *Id.*

134. 17 U.S.C. §§ 1203, 1204 (2001).

135. 17 U.S.C. § 1203 (2001).

136. 17 U.S.C. § 1204 (2001).

purchase new versions of the digital work. Further, in the case of Adobe's Acrobat eBook Reader software, the inability of a user to transfer one eBook between multiple computer platforms may in some instances result in users purchasing more than one copy.

As stated by Jack Valenti, the longtime president of the Motion Picture Association of America (the "MPAA"), "[i]f you can't protect what you own, you don't own anything."[137] Microsoft shares this view, stating, "[p]iracy is not a question of 'if,' but 'when.' No technology is immune to it. The key is having a comprehensive plan in place to counter it at every level and minimize the threat."[138] Accordingly, the major film studios, record labels, and software firms encrypt all of their digital content.

The encryption methods used are extensive. For instance, the film industry uses an encryption scheme known as the Contents Scrambling System ("CSS"), which codes the data on a DVD such that it can only be accessed using an authorized DVD player with a licensed descrambling chip or software.[139] As a result, film studios can prevent DVDs containing their content from being copied and can control the devices on which the DVDs can be played. The music industry employs analogous technology with respect to MP3s. Pursuant to the Secure Downloadable Music Initiative, an effort sponsored by a consortium of major record labels, compliant MP3s are encrypted with watermarks that prevent copying and control access.[140]

Encryption, restrictive licenses, and Section 1201 of the DMCA have impacted commerce tremendously. Various groups of opponents to the DMCA have set forth these concerns in the Copyright Office's Section 104 Report. For instance, some assert that the market for used DVDs is harmed by the inability to play DVDs on devices other than those equipped with a CSS descrambling chip.[141] Being that playback is possible only on such machines, users must purchase not only the DVD itself, but also a special machine on which to play them.[142] Were it not for the DMCA's anti-circumvention provision, users could decode the CSS system with an unauthorized decryption program that would enable the DVDs to be accessed and viewed on devices other than authorized play-

137. Sam Allis, *Internet Acts as Major Battleground Over Intellectual Property Rights*, Boston Globe, March 26, 2000.

138. Declan McCullagh, *Memo on Microsoft's position on eBook encryption, anti-piracy efforts* (quoting Dick Brass, Vice President of eMerging Technologies, Microsoft), *available at* http://www.politechbot.com/p-02352.html (Aug. 6, 2001).

139. Arromdee, *supra* note 127, at 1.

140. *See* Clare Saliba, *Digital Music Crackers Awarded Top Prize,* NewsFactor Network, *at* http://www.ecommercetimes.com/perl/story/5593.html (Nov. 30, 2000).

141. Arromdee, *supra* note 127, at 2.

142. *Id.*

ers.[143] Commentators argue the market for used DVDs is impaired because DVDs cannot be watched unless users also purchase a licensed DVD player.[144]

Similar concerns are presented by the film industry's region coding of DVDs.[145] Region coding is a technological measure that prevents DVDs manufactured for sale in one region of the world from playing on a machine that was not manufactured for sale in the same region as the DVD.[146] DVDs manufactured for sale in the United States, for instance, cannot play on a DVD player manufactured for sale in Japan.[147] Because movie titles are released in the United States often exclusively and in many cases prior to being released in other countries, consumers would benefit substantially from the ability to purchase used DVDs released in other countries.[148] The DMCA, however, prohibits the circumvention of region coding that is necessary to view a DVD purchased in a foreign country.

Frustration of the first sale doctrine due to licenses and the DMCA has perhaps the most profound effect upon libraries. Due to the inability to exercise first sale privileges with digital works, owners of digital works stored in fixed media cannot donate them to libraries without donating their entire computer or its hard drive. The only means by which libraries can reasonably acquire donated works, therefore, is to rely on donations of hard copies. Given the ease by which copyright users can license a work online rather than traveling to a bricks and mortar store to purchase a hard copy, and given the software industry's increasing use of licenses,[149] however, the number of hard copies purchased is declining.[150] Every work licensed rather than purchased in hard-copy format correspondingly reduces the pool of copyrighted works that can be donated to libraries. Traditional donation channels, therefore, may logically subside to a point of infeasibility for libraries such that libraries will be unable to maintain a collection of current works large enough to support public demand.[151]

The inability to transfer digitized works also substantially impairs library lending to patrons and between libraries. Assuming that libraries are able to acquire digital works, which under current law can only be

143. *Id.*
144. *Id.*
145. *See* Section 104 Report, *supra* note 4, at 35.
146. *Id.* at 36
147. *See id.*
148. *See* Arromdee, *supra* note 127, at 3.
149. *See* discussion *infra* Part IV.A.
150. *See* Section 104 Report, *supra* note 4, at 42.
151. *See id.*

done if the library purchases the work itself or receives a donation of the hard drive on which the work is stored, use of the library's digital copy is severely limited. Because of encryption restricting copying and access, librarians cannot transfer works purchased online (e.g., an eBook) to different computers within the same library or to computers in other libraries.[152] Absent a library's purchase of multiple copies of the work, therefore, the material can be viewed only on the computer where the work was initially downloaded. Loans to library patrons are therefore impossible as are interlibrary loans.[153]

Copyright owners' use of licenses further complicates matters for libraries. Simply obtaining a license to use a digital work requires that libraries be knowledgeable in license terms.[154] Libraries must also be prepared to negotiate with publishers and other owners of copyrighted content,[155] thus forcing libraries to incur additional costs to consult with or maintain sophisticated personnel knowledgeable with respect to such negotiations. Moreover, license agreements often require payment of a fee each time the work is accessed, thereby increasing the cost to libraries of using digital works.[156] Where libraries lack the ability to pay license fees so that its patrons can access the work, some patrons may have the means to pay for individual access while others may not, potentially creating an informational divide.[157]

Once licensed, use of the digital work is often severely limited. License terms frequently prohibit the making of copies for archival and preservation purposes.[158] Whereas libraries make duplicate copies of works that are rare or valuable, the need to make a back-up copy becomes particularly important with respect to works that a library owns in digital form. Such works can be easily damaged by virus, user error or system failure. License terms and encryption restricting copying and access, however, render preservation impossible.[159]

Additionally, license terms often restrict the number of times that a work can be accessed and limit access to patrons on the library premises,

152. *See id.* at 39.

153. *See id.*

154. Arnold P. Lutzger, *Primer on the Digital Millennium: What the Digital Millennium Copyright Act and the Copyright Term Extension Act Mean for the Library Community*, Association of Research Libraries Web Site, *available at* http://www.arl.org/info/frn/copy/primer.html#part3 (last modified Mar. 8, 1999).

155. *Id.*

156. *See* Laura N. Gasaway, *Values Conflict in the Digital Environment: Librarians Versus Copyright Holders*, 24 COLUM.-VLA J.L. & ARTS 115, 134 (2000).

157. *Id.*

158. *Id.*; *see also* Section 104 Report, *supra* note 4, at 39; *see also* Lutzger, *supra* note 154.

159. *See* Gasaway, *supra* note 156, at 142.

thus excluding offsite patrons.[160] Further, many licenses prohibit libraries from retaining a hard copy after the license expires, thereby leaving libraries empty handed after paying expensive license fees.[161]

Compounding the problem for libraries is copyright term extension legislation that was enacted in the same year as the DMCA. Entitled the "Sonny Bono Copyright Term Extension Act,"[162] the legislation extends copyright protection for covered works by an additional twenty years, thereby prolonging the time it takes a work to enter the public domain.[163] Because unrestricted access to non-copyrighted works is crucial to research and scholarship, libraries face potentially severe impacts.[164]

In an effort to appease library interests,[165] the Sonny Bono Copyright Term Extension Act provides an exception for libraries, reducing restrictions on copyrighted works during the last twenty years of the copyright term.[166] In particular, libraries may copy, distribute, display and/or perform a work in digital or facsimile form for purposes of preservation, scholarship, or research, provided the library determines on the basis of a reasonable inquiry that the work is not subject to normal commercial exploitation and that a copy or phonorecord cannot be obtained at a reasonable price.[167] In addition, libraries are prohibited from exercising the exception where the copyright owner or its agent provides notice through the Copyright Office that the work is being exploited or can be obtained at a reasonable price.[168] This exception thus only partially addresses the library community's interest in having works revert to the public domain as quickly as possible. Functionally speaking, the only works copyright owners will not exploit for the full copyright term will be those that are unprofitable, which in all likelihood will be unpopular and of no interest to the public anyway.[169]

160. *See id.* at 142, 154.

161. *Id.* at 142.

162. 17 U.S.C. § 304(a) (2001).

163. *Id.* Copyrightable works now receive copyright protection for the life of the author plus seventy years. *Id.* In the case of works made for hire the copyright term lasts the life of the author plus ninety-five years. *Id.*

164. *See* Gasaway, *supra* note 156, at 123.

165. The libraries argued that while copyright owners rarely exploit works or make them readily available in the marketplace during the last twenty years of the work's copyright term, such works are of critical importance to scholars and researchers. Lutzger, *supra* note 154.

166. 17 U.S.C. § 108(h) (2001).

167. *Id.*

168. *Id.*

169. As an additional matter, anti-copying and access-control software may "allow copyright owners to control use and disposition of copies of digital works long after the copyrights have passed into the public domain." Reply Comments of Library Associations, *supra* note 102.

In aggregate, the DMCA's provisions combined with the use of restrictive licenses impede commerce substantially. In addition to consumers being unable to sell or transfer software and eBooks, libraries bear a substantial portion of this impediment by failing to readily enjoy the benefits that digital technology has to offer. Being that libraries are one of the segments of commerce standing to benefit substantially from modern technology, the incompatibility of the first sale doctrine with digital works poses an ironic twist. The use of digital works such as eBooks could save libraries considerable time and money in that works could be more cheaply and easily stored, retrieved and distributed to library patrons. As is, however, use of eBooks is prohibitively cumbersome, expensive, and impractical due to encryption software and the DMCA's anticircumvention rules. Moreover, licensing digital works such as periodicals often requires libraries to submit to overly restrictive terms that render use of the digital work cost ineffective.

VI. MAKING A DIGITAL FIRST SALE EXCEPTION FEASIBLE

The first step towards creating a digital first sale doctrine is to amend the Copyright Act so that confusion is resolved as to whether such an exception exists. As noted by one commentator, "[t]he public interest and the evolution of the marketplace often are better served by laws that clearly address and define the rules for a new technological environment."[170] The amendment must make it perfectly clear that the first sale doctrine applies to copyrighted works irrespective of the media in which they are fixed, whether it be digitized media, traditional print media, or other media. As proposed by the Library Associations, Section 109(a) of Title 17 of the United States Code should be amended as follows:

> [n]otwithstanding the provisions of section 106(3), the owner of a particular copy or phonorecord lawfully made under this title, *or the owner of any right of access to the copyrighted work*, or any person authorized by such owner, is entitled, without the authority of the copyright owner, to sell or otherwise dispose of the possession of that copy, phonorecord, *or right of access*.[171]

As a companion to a Copyright Act amendment, technological measures must be developed to enable copying and transmission of digital works while preventing piracy. To this end, several objectives must be achieved. First, the measures taken must preserve the balance between

170. Reply Comments of the Digital Media Association, *available at* http://www.loc.gov/copyright/reports/studies/dmca/reply/Reply016.pdf (Sept. 5, 2000).

171. Reply Comments of Library Associations, *supra* note 102.

copyright owners and copyright users that the first sale doctrine has traditionally attempted to establish. Tipping the scale in either direction, as we have experienced with the DMCA's favorable treatment of copyright owners, can have dramatic economic and social effects.

The second objective that must be achieved is that the measures taken must be commercially feasible. In other words, software that furthers the spirit of the first sale doctrine must not be so expensive that it adversely affects the demand for the copyrighted work itself. Doing so would undermine the incentive to create original works and reduce the market for used works. At the extreme, prohibitively expensive technological measures intended to protect copyright owners' rights could result in a market shift away from digitized works back to traditional hard copies.

Finally, technological measures must provide sufficient assurance to copyright owners that piracy will not occur. Because copyright owners bear all risks of piracy that could potentially ensue if the new technological measures fail, copyright owners will simply refuse to adopt the measures unless such assurance is obtained. The measures must therefore be developed pursuant to a broad consensus of copyright owners and other relevant industry representatives so that copyright owners feel confident in the technology.[172]

A. *The Simultaneous Destruction Proposal*

One proposal aimed at facilitating a digital-first sale doctrine is the concept of simultaneous destruction. Representatives Boucher and Campbell proposed this idea to the 105th Congress in H.R. 3048.[173] As the name implies, the simultaneous destruction method requires that the person transmitting the copyrighted work immediately erase his particular copy after the transfer is complete.[174] The rationale underlying this proposal "is that by destroying the source copy, the conduct more closely resembles a traditional distribution (to which the first sale exception would apply) because the same number of copies exist at the end of the transaction as at the beginning of the transaction."[175]

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172. *See* Section 104 Report, *supra* note 4, at App. 9, 59.

173. Digital Era Copyright Enhancement Act, H.R. 3048, 105th Congress (1st Sess.1997).

174. *See* Ken Wasch, SIIA Reply Comments Relating to the Joint Study by the Copyright Office and NTIA on Sections 109 and 117 of the Copyright Act (letter from Ken Wasch, President of Software and Information Industry Association, to Jesse Felder and Jeffrey E.M. Joyner, Senior Counsel, National Telecommunications and Information Adminstration), *available at* http://www.siia.net/sharedcontent/govt/issues/ip/9-5-00.html (Sept. 5, 2000).

175. *Id.*

While this proposal follows the spirit of the first sale doctrine as it has traditionally been applied, it is potentially impractical due to piracy concerns. First, it ignores some of the characteristics of digital media that could result in used works competing directly with new versions of the same work even if the source copy were simultaneously destroyed.[176] Whereas the quality of a book or analog cassette deteriorates over time, the integrity of digital content remains perfect throughout the life of the work irrespective of how many times it is read or transferred.[177] Consumers will thus be indifferent between purchasing a new copy of the work and obtaining a used copy.[178] For example, when a particular copy of a paper back book is continually read and then sold to used bookstores, there reaches a point in the chain of transfer where "the integrity and appearance of the paperback becomes so deficient that the next reader in line will opt to purchase a 'new' copy of the same paperback."[179]

The innate ability of digital works to remain in "mint" condition over time potentially pushes the boundaries of the traditional first sale doctrine by enabling users to enjoy a digital work for an indefinite period of time rather than a limited one.[180] At the extreme, one copy of a work could be passed between every user who demanded it, thus potentially serving the entire market for that work.[181]

This concern becomes particularly prevalent with respect to peer-to-peer technology, such as Napster or Gnutella. Such software provides a centralized exchange for file swapping and enables users from all over the world to meet online, search each other's hard drives for a desired file, and then upon locating it, download the file.[182] Using peer-to-peer software "permits one copy of a work potentially to serve millions" in that the work can be copied and shared with an innumerable quantity of users.[183] Few copyright owners would derive income from their works if the market for copyrighted works became usurped by a handful of copies transferred between an infinite quantity of users.[184]

Further, the simultaneous-destruction proposal is impractical because it does not address the potential for widespread distribution of copied digital works.[185] The impact of the first sale doctrine on the mar-

176. Kupferschmid, *supra* note 15, at 848.
177. *Id.*
178. *See id.*
179. Wasch, *supra* note 174.
180. *See id.*
181. *Id.*
182. *See generally* Webopedia, *at* http://www.webopedia.com/ (last visited Dec. 1, 2002).
183. Wasch, *supra* note 174.
184. *Id.*
185. *See id.*

ket for the original work has historically been limited by virtue of the fact that distribution of traditional media "was restricted by the geography and circle of people known to the holder of that copy, as well as the time and effort necessary to re-distribute the copy."[186] Such constraints, however, do not apply to digitized works.[187] Digitized works, unlike hard copies (or digital works fixed in hard copy media such as CDs or DVDs), can be effortlessly re-distributed anywhere around the world to millions of people unknown to the user.[188] As a result, the number of times that a perfect copy of the digitized work is transferred between parties would increase dramatically. Millions of consumers would no longer have the need or the desire to purchase the original work.[189] Accordingly, the market for the original work would suffer substantial impairment.[190]

Perhaps of greatest concern are the evidentiary and procedural concerns presented by the simultaneous destruction proposal.[191] First, barring any technological improvements, there is no way of verifying that a user destroyed his source copy upon transferring a copy.[192] Secondly, even if there was a way of proving that the source copy was discarded, it is impossible for the courts or the copyright owner to verify that it was done so simultaneously.[193] Thus, copyright users could freely distribute pirated copies of the work and then upon being discovered dispose of the original copies in order to claim the first sale defense at trial.[194]

B. *Accommodating the Simultaneous Destruction Proposal*

The simultaneous destruction proposal, in effect, bridges the gap created by applying the traditional first sale doctrine to modern technology. Although the proposal presents piracy concerns, it embodies the fundamental approach of the first sale doctrine. Were piracy concerns associated with the simultaneous destruction proposal addressed, therefore, the first sale doctrine as applied to digital works could successfully mesh with traditional copyright law.

Technological measures must resolve these piracy concerns. Essentially, a technological device must destroy or render the transferor's copies useless once the device discovers that a copy of the work has been

186. *Id.*
187. *Id.*
188. *Id.*
189. *See* Kupferschmid, *supra* note 15, at 848.
190. *Id.*
191. *Id.* at 845.
192. *Id.*
193. *Id.*
194. Wasch, *supra* note 174.

transferred. For instance, if the device detects that transmission of a copy of the work from the original computer to an external source is in progress, the device would instantaneously destroy the original copy and all other copies residing on the computer's hard drive upon completion of the transfer. In other words, the device would permit "file copy" but would be triggered to delete all remaining copies upon "file move."

In determining what constitutes an external source, this classification should be constructed very broadly, such that copies moved to any location other than the computer's own hard drive would trigger the simultaneous destruction device. For instance, if a copy has been moved to a floppy disk, CD-ROM, or has left the computer via e-mail or by means of peer-to-peer software, then the device would begin destroying the original and all copies residing on the transmitting computer.

C. *A Central Registration System for Digital Copyrighted Works*

Another technological means of facilitating a digital first sale doctrine is the use of a registration system that records both the serial number of the work and the serial number of the computer's processor used to open the file. To use the digital work, a user would log on to the system whereupon the registry would check to make sure that the serial number of the work matches the processor number. Upon making this determination, the system would then grant the user an access key to view, play or use the work.

Upon transferring the work, the recipient would register with the registration web site, which would link the new user's processor identification number to the serial number of the work. The registration system would then replace the old user with the new user, in effect transferring the old user's right of access to the recipient such that the transferor would no longer be able to use the work.

To avoid the inconvenience of having to log on to the internet each time a user wished to use the work, a short-term access key could be used. This key would degrade after a certain number of uses or after a specified period of time has elapsed.[195] If a user transferred the work during the active period under such a system, the access key to the work would soon expire anyway, thus creating a near simultaneous destruction. If the original user wished to continue use of the work after the key expired, he would simply log on to the internet and obtain an extension.

195. Microsoft employs a similar scheme with Windows XP and Office XP. *See* discussion *infra* Part IV.B.c.

D. *Preservation/Restoration of Fair Use With Digital Works*

For simultaneous destruction software or a registration scheme to facilitate the transfer of copies, copyright owners would first need to lift copyright protection devices that prohibit copying. While in the past, copyright owners have feared that the ability to copy works would result in piracy, effective technological measures would alleviate these concerns. With simultaneous destruction software, piracy would not be an issue if the original copy and all duplicate copies residing on a user's computer are destroyed once a single copy is transferred. The quantity of copies that a user could make, therefore, would bear no relation to the quantity that could be distributed. A registration system would likewise alleviate concerns about copying, since copies could not be accessed by more than one user per ownership period. Copyright owners should thus have no qualms with permitting a user to exercise fair use rights provided the copyrighted work were protected by a simultaneous destruction device or registry system.

Assuming copyright owners removed anti-copying software, exercise of the fair use doctrine with digital works would require that the new technological measures permit users to make at least one back-up copy of the digital work on removable media (e.g., CD-ROM or floppy disk). To protect against piracy, the technological measures would need to detect that a user was making a back-up copy.

In the case of simultaneous destruction software, upon making the determination that a back-up copy had been made, the software would encrypt the back-up copy with traditional anti-copying software. This encryption would prevent the user from making further generational copies. After one back-up copy was made, the simultaneous destruction software would then proceed to destroy or disable all copies (but for the encrypted back up copy if it were made onto the computer's hard drive) if any copy were subsequently moved from the computer's hard drive. A registration system would work in a similar fashion, providing a unique access key for use only with that particular back-up copy. Combined with anti-copying software embedded in the back-up copy, copying and access to the copy would be restricted.

E. *Special Measures for Libraries*

Making a digital first sale doctrine feasible for libraries and suitable for copyright owners requires special technological measures. Unlike consumers, who upon transfer of a work usually do not intend to receive the work back at any point in the future, libraries transfer works to patrons only temporarily. During the course of this temporary transfer,

libraries run the risk that patrons may steal, damage, or expose the library's copy of the digital work to virus while the work is checked out. Simultaneous destruction software appropriate for consumers would therefore not work for libraries.

So as to minimize the effect of library operations upon the retail market for original works, technological measures must preserve the manner in which the first sale doctrine has traditionally applied to library operations. In particular, several attributes of traditional library lending must be carried forward in the lending of digitized works. First, the integrity and appearance of books over time degrade. A library's ownership of a book, therefore, does not extend indefinitely. At a certain point in time, which is dependent upon the extent of use, libraries will replace a worn-out work with a new copy that has either been purchased or donated. Digitized versions of a work, however, can last forever such that the digitized version could theoretically undermine the market for the original work in perpetuity. Copies of digital works sold directly to libraries, therefore, should be programmed to self-destruct after a predetermined time that is roughly commensurate with the life of a hard copy of the book. In the alternative, prices of works sold to libraries could be increased to reflect increased usage.[196]

Second, the number of times that the hard copy of a book can be checked out in a given time period is limited by the fact that only one person at a time can check out a single copy. As a result of this scarcity, library lending does not flood the market with free versions of the work that can be accessed by anyone at any time. Consequently, patrons desiring to use a work immediately rather than waiting for the library's copy to become available will purchase it.

Were libraries permitted to lend out multiple digital copies to a large number of patrons by mere virtue of the fact that they held the source copy, a potentially endless supply of free versions of the work would exist such that nobody would want to purchase a new version. One could envision a situation where consumers, rather than purchasing the most recent John Grisham eBook instead merely paid a visit to the library, where a copy was guaranteed to be waiting for the consumer. Legal or technological measures must therefore require that libraries can only lend only one copy at a time.

196. To compensate for increased usage by library patrons, works licensed to libraries typically require payment of a fee each time the work is accessed. *See* Arnold P. Lutzger, *In the Curl of the Wave: What the Digital Millennium Copyright Act and Term Extension Act Mean for the Library and Education Community*, Association of Research Libraries Bimonthly Report, *available at* http://www.arl.org/newsltr/203/curl.html (last modified April 15, 1999).

Because libraries and universities lend works out to the public, an additional window for piracy is opened. Note that a library patron merely possesses a work when he checks it out from the library. The patron thus lacks the requisite "ownership" to exercise the first sale doctrine. As a result, he cannot lawfully transfer the work without infringing the copyright owner's distribution right. Further, any copies made would violate the copyright owner's reproduction right. Technological measures must therefore prohibit both copying and transfer of the work while in the patron's possession.

F. *Enforcement of Technological Measures*

Whatever technological methods were employed to enable exercise of first sale privileges with digital works, be it a registration system, simultaneous destruction measures, and/or special technological devices for libraries, the DMCA as currently drafted would protect against the circumvention of these measures. Because the measures would serve to prevent mass transfer of digital works and protect copyright by restricting access, the measures would fall under Section 1201's definition of a "technological measure" controlling access to a copyrighted work.[197] As such, users or library patrons that hacked the technological measures controlling access would face civil and criminal liability.[198]

Anti-copying devices imposed on back-up copies for consumers and checked-out copies for library patrons would likewise receive sufficient protection from the DMCA. Although the DMCA permits users to crack anti-copying encryption to make a fair use copy,[199] a majority of consumers lack the necessary skills to do so. Those having such skills are prohibited by the DMCA from providing devices or services that facilitate circumvention of anti-copying software.[200]

VII. CONCLUSION

Technological advances provoke changes in society and affect our every day lives.[201] Such advances shape how we as a society consume goods and services in the marketplace and can ultimately influence how we as individuals interact with each other. These changes "generate demand for new legal regimes" capable of protecting rights traditionally

197. 17 U.S.C. § 1201(a)(3)(B) (2001).
198. 17 U.S.C §§ 1203, 1204 (2001).
199. *See* 17 U.S.C. § 1201(a)(1)(A) (2001).
200. 17 U.S.C. § 1201(a)(2) (2001).
201. JOYCE ET AL., *supra* note 21, at 44.

recognized.[202] Copyright law, in particular, has always been forced to adapt to developments in the technological status quo that have rendered its current structure inapplicable to current circumstances.[203] Although the DMCA Section 104 Report concludes by recommending that Congress not alter Section 109 of the Copyright Act,[204] the perpetual evolution of Copyright law must continue with respect to the first sale doctrine.

As the quantity of content released in digital form increases, absence of a digital first sale doctrine will result in substantial harm not only to consumers and the market for used copyrighted works, but also to owners of copyrightable works themselves. Stated insightfully by one industry commentator,

> [Consumers] have for decades bought physical CDs, bought physical books, and have been able to do with them as they wish. When a time comes, and we hope the time never comes that a consumer bumps smack up against a restriction imposed on them because the first sale doctrine was not updated, there is going to be a tremendous human cry and the human cry is not necessarily going to be first to Congress. It's going to be a backlash against e-commerce companies that are selling them something that they think is insufficient, inadequate, and does not deliver to them the full value and flexibility that they expect from CDs, from books, and from hard copies of goods, as well as from digital media which inherently people view as being more flexible and capable.[205]

Through a combination of legislative amendment and development of technological measures protecting copyright owners' rights, a first sale doctrine must be applied in the digital era. After all, given the restrictions associated with eBook use, most consumers would likely opt to purchase RIDING THE BULLET in hard-copy form rather than digital—wouldn't you?

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202. *Id.*

203. *Id.*

204. The Report states, "[i]n the final analysis, . . . harm to the market as a result of the ease of distribution, and the lessened deterrent effect of the law that could promote piracy, outweigh the pro-competitive gains that might be realized from the creations of a digital first sale doctrine." Section 104 Report, *supra* note 4, at 100.

205. Seth Greenstein, Digital Media Associates, Summaries of Testimony of Nov. 29, 2000 Public Hearing, Copyright Office Hearing Transcript, at 268–269, *available at* http://www.loc.gov/copyright/reports/studies/dmca/sec-104-report-vol-3.pdf (last visited Dec. 1, 2002).