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The Technological Transformation of Copyright Law

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INTRODUCTION

The Copyright Clause in the United States Constitution empowers Congress to "secur[e] for limited Times to Authors . . . the exclusive Right to their respective Writings" to "promote the Progress of Science and useful Arts."[1] This provision recognizes the value of providing an incentive for creation and dissemination of expression. That incentive is the justification for granting "rights" to creators and marks the constitutional limit of those rights. The Copyright Clause requires the government to carefully tailor those rights to not provide excessive incentive to the creation and dissemination of expression or allow those rights to extend beyond the "writing" itself to underlying facts or ideas. Doing otherwise would exceed the authority granted by the Copyright Clause, conflict with that provision's purpose, and likely violate the First Amendment's prohibition on laws "abridging freedom of speech."[2]

Both statutory and case law clearly recognize the constitutional interest in promoting, not restricting, expression. As the Supreme Court has written, copyright is "the engine of free expression. By establishing a

1. U.S. Const. art. I, § 8, cl. 8.
2. Id. amend. I.

marketplace right to the use of one's expression, copyright supplies the economic incentive to create and disseminate ideas."[3] Neither the Copyright Clause nor the First Amendment would be served if copyright law interfered with the marketplace of ideas. Therefore, lawmakers and courts limit the monopoly provided by copyright law by time, subject matter, statutory licenses such as the compulsory copyright license for cable television and special provisions for libraries, and the statutory defense to copyright infringement of "fair use."

The most important limit, however, is that copyright law protects *expression* only. No matter how original or creative, there is no protection for facts and ideas, procedures, processes, systems, methods of operation, concepts, principles, or discoveries.[4] The Supreme Court has repeatedly stressed that "[t]he most fundamental axiom of copyright law is that '[n]o author may copyright his ideas or the facts he narrates.' . . . [C]opyright assures authors the right to their original expression, but encourages others to build freely upon the ideas and information conveyed by a work."[5] As a result, copyright law will not even protect expression if that expression provides the only means of conveying an idea, concept, or fact, or is essential to the execution of an idea or concept.[6]

Moreover, under U.S. copyright law, any member of the public may access the content of a copyrighted work that she possesses. For example, the purchaser of a book needs no permission from the copyright holder to read it. Buyers of paintings or cassette tapes need no permission to look at or listen to their purchases. Even one who borrows or finds a copyrighted work may view it or listen to it without violating copyright law. Consistent with both the Copyright Clause and the First Amendment, the law does not restrict access to copyrighted works or the use of the facts and ideas those works contain.

Digital technologies are rapidly changing the application of copyright law to prohibit access, protect ideas and facts, and dramatically expand the monopoly granted to copyright holders. Whether on a disk or network, digital expression cannot be accessed without being copied into computer memory, as well as onto a hard drive, floppy disk, or magnetic tape if it is to be retained after the computer is switched off. This necessarily violates the exclusive right of reproduction that copyright law grants to copyright holders. Moreover, to read or view digital expression on a computer screen or to listen to it through computer speakers, the digital work must be "displayed" or "performed" within the meaning of copyright law. If that digital expression was downloaded from a computer network, the display

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3. Harper & Row Publishers, Inc. v. Nation Enters., 471 U.S. 539, 558 (1985).

4. 17 U.S.C. § 102(b) (1994).

5. Feist Publications, Inc. v. Rural Tel. Serv. Co., 499 U.S. 340, 344-45, 349 (1991) (quoting *Harper & Row*, 471 U.S. at 556).

6. *See* Final Report of the Nat'l Commission on the New Technological Uses of Copyrighted Works 20 [hereinafter CONTU Final Report] (explaining the doctrine of merger as it applies to computer programs).

or performance is "public" and violates the copyright holder's exclusive rights to publicly display and perform her copyrighted work.

In short, the very nature of the new technological environment causes current copyright law to protect facts and ideas, not merely expression. The law restricts subsequent use of those facts and ideas without the copyright holder's permission by forbidding access altogether. Technology is turning the law on its head.

Rather than counteracting this technological transformation, federal regulators are seeking to expand it and codify it into law. The Clinton Administration's Information Infrastructure Task Force Working Group on Intellectual Property has recommended that Congress amend the Copyright Act to make electronic transmission another exclusive right of the copyright holder. Any effort to access a copyrighted work on the Internet or other network—a necessary step to reading the work—would violate not only the exclusive rights of reproduction and public display or performance, but also the new right of transmission.

Concerns about the application of copyright law to digital expression are not ethereal. Electronic information has already supplanted printed and other forms of information in the global economy. According to the National Telecommunications and Information Administration, the creation, manipulation, and transmission of digital information constitute the world's largest economic sector.[7] In the United States, the Clinton Administration reports that between one-half and two-thirds of U.S. employees work in information-based jobs.[8] The International Telecommunication Union predicts that by the turn of the century the sector will account for $3.5 trillion in revenue.[9]

This Article examines the technological transformation of U.S. copyright law. Part I describes the constitutional commitment to a rich, unfettered marketplace of ideas and examines the extent to which current copyright law advances that purpose.[10] Part II explores the application of existing copyright law to digital information and efforts by the Clinton Administration to amend the law to increase the monopoly power conveyed by copyright law.[11] Part III recommends a renewed focus on the constitutional mandate to tailor the monopoly conveyed by copyright law to the incentive necessary for creation and dissemination of ideas.[12] In the digital information context, this would require amending or interpreting the law to prevent its use as a barrier to public access to information. This Article concludes that the historical expansion of copyright law, combined

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7. National Telecommunications and Information Administration Fact Sheet, May 30, 1995, at 2 [hereinafter NTIA Fact Sheet].

8. Ronald H. Brown, Remarks at the Museum of Television and Radio, New York 3 (Jan. 6, 1994); Al Gore, Remarks at the National Press Club, Washington, D.C. 4 (Dec. 21, 1993).

9. Ted Bunker, Is it 1984?, LAN, Aug. 1994, at 40.

10. *See* infra notes 14-106 and accompanying text.

11. *See* infra notes 107-231 and accompanying text.

12. *See* infra notes 232-90 and accompanying text.

with explosive changes in both technologies and markets, will require Congress or the courts to revise modern U.S. copyright law substantially to return it to its constitutional origins.[13]

I. COPYRIGHT LAW CONTEXT

A. The Statutory Expansion of Copyright Law

In 1976 Congress concluded more than a decade of hearings and debate by passing a new Copyright Act (1976 Act)[14] that substantially rewrote U.S. copyright law. Under the prior law enacted in 1909 (1909 Act),[15] federal copyright protection applied only to limited categories of works and then only if the work was published.[16] The 1909 Act also required strict compliance with a variety of formalities[17] and the copyright lasted for only twenty-eight years (fifty-six years, if the copyright was renewed).[18]

The 1976 Act substantially broadened and extended federal copyright protection. Rather than protecting only specified categories of works, Congress applied copyright law to all works of authorship,[19] provided they were "fixed"[20] and "original,"[21] regardless of whether they were published. These requirements are deliberately broad and easy to satisfy. Because the 1976 Act eliminated publication as a prerequisite for federal copyright protection, the Act preempted all state copyright-like

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13. *See* infra notes 291-312 and accompanying text.

14. Pub. L. No. 94-553, 90 Stat. 2541 (1976) (codified as amended at 17 U.S.C. §§ 101-803 (1994)).

15. Act of March 4, 1909, ch. 320, 35 Stat. 1075 (codified as amended at 17 U.S.C. §§ 1-215 (1970) *repealed by* 1976 Act, supra note 14).

16. 17 U.S.C. § 2 (1970) *amended by* 17 U.S.C. § 301 (1976). The 1909 Act provided exceptions from the publication requirement for certain works "not reproduced for sale" and common-law provided copyright-like protection for many unpublished works. 17 U.S.C. § 12 (1970) *amended by* 17 U.S.C. § 408 (1976).

17. These formalities included registration with the Copyright Office and publication with appropriate copyright notice. 17 U.S.C. § 10 (1970) *amended by* 17 U.S.C. § 401 (1976).

18. 17 U.S.C. § 24 (1970) *amended by* 17 U.S.C. §§ 203, 301-305 (1976).

19. 17 U.S.C. § 102(a) (1994). Works subject to copyright include, but are not limited to, literature, music, drama, pantomime, choreography, photography, graphic art, sculpture, film, computer software, sound recordings, or architecture. Id.

20. A work is "fixed" when it is embodied, by or with the permission of its creator, in "any tangible medium of expression," no matter when invented, from which the work can be "perceived, reproduced or otherwise communicated, either directly or with the aid of a machine or device . . . for a period of more than transitory duration." 17 U.S.C. §§ 102(a), 101 (1994). Under the 1976 Act, "copies" and "phonorecords" describe the entire universe of physical objects in which copyrighted works may be fixed. A "phonorecord" is not limited to a vinyl LP or other single technology. *See* id. § 101 (failing to make such a limitation). In this Article, the term "copies" includes both copies and phonorecords.

21. A work is "original" if it "was independently created by the author (as opposed to copied from other works), and . . . possesses at least some minimal degree of creativity." Feist Publications, Inc. v. Rural Tel. Serv. Co., 499 U.S. 340, 345 (1991).

protection.[22] As a result, copyright law now protects every letter, memo, note, home video, answering machine message, e-mail, and doodle.

Moreover, unlike other areas of intellectual property, the 1976 Act, as amended in 1988,[23] does not require compliance with statutory formalities or application to the government as a condition for protection.[24] Protection begins as soon as the work is "fixed"—regardless of whether the author wishes the work to be protected—and lasts for fifty years past the life of the author. If the author is an organization, protection lasts for one hundred years after creation or seventy-five years after publication, whichever expires first.

The rights protected under current law are equally expansive. The 1976 Act gives a creator, or in some circumstances, a creator's employer,[25] five exclusive rights: the right to reproduce, adapt, distribute, publicly perform, and publicly display a copyrighted work.[26] For the period covered by the copyright, the law permits only the copyright holder to engage in, or authorize someone else to engage in, any activity covered by the five exclusive rights. In addition, the 1976 Act grants to the copyright owner the right to control importation of copyrighted works into the United States.[27] The right applies even to copies produced with the copyright owner's permission for distribution outside the United States.[28]

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22. 17 U.S.C. § 301(a) (1994). Section 301(a) preempts "all legal or equitable rights that are equivalent to any of the exclusive rights within the general scope of copyright . . . in works of authorship that are fixed in a tangible medium of expression and come within the subject matter of copyright . . . ." Id.

23. Berne Convention Implementation Act of 1988, Pub. L. No. 100-568, 102 Stat. 2853 (1988) (codified at 17 U.S.C. §§ 101, 104, 116, 205, 301, 401-408, 411, 501, 504, 801, 804 (1988)).

24. The 1976 Copyright Act offers several incentives to prompt registration, including making registration a prerequisite for filing a copyright infringement action or for obtaining statutory damages. 17 U.S.C. §§ 411(a), 412 (1994). Similarly, despite elimination of the notice requirement, affixing notice may affect the copyright owner's monetary recovery for infringement. As a general rule, if notice appears on the published copy to which the infringer had access, a court will give no weight to a defense that innocent infringement mitigates actual or statutory damages. 17 U.S.C. §§ 401(d), 402(d) (1994).

25. The right belonged initially to the creator unless the work was "made for hire." The statute defines a "work made for hire" as follows:

> (1) a work prepared by an employee within the scope of his or her employment; or
>
> (2) a work specially ordered or commissioned for use as a contribution to a collective work, as a part of a motion picture or other audiovisual work, as a translation, as a supplementary work, as a compilation, as an instructional text, as a test, as answer material for a test, or as an atlas, if the parties expressly agree in a written instrument signed by them that the work shall be considered a work made for hire.

Id. § 101.

26. 17 U.S.C. § 106 (1994).

27. 17 U.S.C. § 602(a) (1994).

28. *See, e.g.*, BMG Music v. Perez, 952 F.2d 318 (9th Cir.), *cert. denied*, 505 U.S. 1206 (1992).

The exclusive rights may be transferred or licensed, individually or collectively, for use by others.[29] The transferee or exclusive licensee is entitled "to the extent of that right, to all of the protection and remedies accorded to the copyright owner by this title."[30] The new copyright holder or exclusive licensee can enforce her rights against even the original creator or copyright holder.[31]

Courts have interpreted the copyright law's infringement provisions very broadly. Individuals and institutions are liable not only for their own conduct, but also for the conduct of employees under the doctrine of respondeat superior;[32] the conduct of anyone whom they supervise and in whose work they have a financial interest (vicarious infringement);[33] and the conduct of anybody whose infringing activity they knowingly induce, cause, or to which they materially contribute (contributory infringement).[34] The law does not require that the defendant intend to infringe or even have knowledge of the infringing conduct except in the case of contributory infringement. Innocent intent or lack of knowledge may affect damages, but they do not affect liability.[35]

The 1976 Act provides significant penalties for violating the exclusive rights. These penalties include injunctions,[36] impoundment and destruction of infringing copies,[37] actual damages and lost profits,[38] statutory damages,[39] court costs,[40] and attorneys' fees.[41] The Act also provides criminal penalties for "[a]ny person who infringes a copyright willfully and for purposes of commercial advantage or private financial gain."[42]

The 1976 Act and subsequent amendments resulted in a sweeping expansion of U.S. copyright law. As a result, copyright law today protects virtually all expression fixed in any medium, and that protection will last fifty years beyond the death of even an author who is unaware of, or

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29. 17 U.S.C. §§ 201(d), 101 (1994).

30. Id. § 201(d)(2).

31. *See, e.g.*, Gross v. Seligman, 212 F. 930 (2d Cir. 1914).

32. Whitol v. Crow, 309 F.2d 777, 782-83 (8th Cir. 1962); M. Witmark & Sons v. Calloway, 22 F.2d 412, 414 (E.D. Tenn. 1927).

33. Shapiro, Bernstein & Co. v. H.L. Green Co., 316 F.2d 304, 307 (2d Cir. 1963).

34. Sony Corp. of Am. v. Universal City Studios, Inc., 464 U.S. 417, 442 (1984); Gershwin Publ'g Corp. v. Columbia Artists Management, 443 F.2d 1159, 1161-62 (2d Cir. 1971).

35. *See* Buck v. Jewell-LaSalle Realty Co., 283 U.S. 191, 198 (1931) ("Intention to infringe is not essential under the act."); Playboy Enters. v. Frena, 839 F. Supp. 1552, 1559 (M.D. Fla. 1993) ("Intent or knowledge is not an element of infringement, and thus even an innocent infringer is liable for infringement."). *See generally* Paul Goldstein, Copyright § 9.4 (1989).

36. 17 U.S.C. § 502 (1994).

37. 17 U.S.C. § 503 (1994).

38. 17 U.S.C. § 504(b) (1994).

39. 17 U.S.C. § 504(c) (1994). Statutory damages range from $200 for innocent infringement to $100,000 for willful infringement.

40. 17 U.S.C. § 505 (1994).

41. Id.

42. 17 U.S.C. § 506(a) (1994).

unconcerned about exercising, those rights. Protection is easy to come by, broad, long-lasting, and difficult to lose.

B. The Statutory Limits of Copyright Law

Copyright protection is not, however, limitless. As already noted, protection is limited to expression that is "fixed" and that demonstrates at least a modicum of originality.[43] Copyright law does not restrict independent creation: if two people independently take photographs of the same scene at the same time, neither has rights against the other, no matter how similar their photographs may be.[44] However, copyright protection exists for only a limited time[45] and does not extend to works created by the federal government.[46] In addition, the exclusive rights to display and perform works only apply to "public" displays or performances. The 1976 Act defines "public," in turn, to exclude the "normal circle of a family and its social acquaintances."[47]

The 1976 Act also provided specific restrictions on the exclusive rights to distribute and to publicly display and perform copyright works, exemptions applicable to computer programs, a series of statutory licenses, and the defense of "fair use."

1. First Sale Doctrine

The "first sale" doctrine, codified in section 109, is applicable to the distribution right.[48] The doctrine limits copyright owners' rights by subjecting only the initial distribution of a particular copy of a copyrighted work to their control. The first sale doctrine provides that once the copyright holder has distributed or authorized the distribution of copies of her copyrighted work, subsequent possessors of those copies may redistribute them without the original copyright holder's permission.[49]

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43. Feist Publications, Inc. v. Rural Tel. Serv. Co., 499 U.S. 340, 362 (1991).

44. Alfred Bell & Co. v. Catalda Fine Arts, 191 F.2d 99, 103 (2d Cir. 1951) ("'Hence it is possible to have a plurality of valid copyrights directed to closely identical or even identical works. Moreover, none of them, if independently arrived at without copying, will constitute an infringement of the copyright of the others.'") (quoting Leon H. Admur, Copyright Law and Practice 70 (1936)); Sheldon v. Metro-Goldwyn Pictures Corp., 81 F.2d 49 (2d Cir.), *cert. denied*, 198 U.S. 669 (1936).

45. 17 U.S.C. § 302 (1994).

46. 17 U.S.C. § 105 (1994).

47. To perform or display a work "publicly" means:

> (1) to perform or display it at a place open to the public or at any place where a substantial number of persons outside of a normal circle of a family and its social acquaintances is gathered; or
>
> (2) to transmit or otherwise communicate a performance or display of the work to a place specified by clause (1) or to the public, by means of any device or process, whether the members of the public capable of receiving the performance or display receive it in the same place or in separate places and at the same time or at different times.

Id. § 101.

48. 17 U.S.C. § 109(a) (1994).

49. Id. Columbia Pictures Indus. v. Aveco, 800 F.2d 59, 64 (3d. Cir. 1986)("When a

Without the first sale doctrine, reselling, lending, and giving away a copy of a copyrighted work would violate the copyright holder's exclusive distribution right.

The first sale doctrine does not apply with equal force to all types of copyrighted works. Under current law, the owner of a lawfully made copy of a computer program or a phonorecord of a sound recording may not rent, lease, or lend that copy or phonorecord for direct or indirect commercial advantage.[50] The sale or donation of a lawful copy of a computer program or phonorecord of a sound recording is still exempted from the exclusive distribution right, as is lending a lawful copy or phonorecord without any commercial purpose. But the effect of the exclusion has been to preclude development of sound recording and software rental industries, similar to that which exists today for video tapes.

These exceptions reflect both successful lobbying efforts by the affected industries and legitimate congressional concern over the ease with which reproductions of sound recordings and computer software can be made. This latter concern is particularly relevant to computer software. The Computer Software Rental Amendments Act of 1990[51] excludes software from the first sale doctrine. The Act recognizes that a verbatim copy of computer software can be made at very low cost and with no discernible effect on quality. In fact, it is unrealistic to seek to distinguish between a "copy" and an "original" in the case of digital information, because there are no discernible differences.[52] Congress reinforced the exclusion's focus on easy-to-copy software by specifically exempting from the Act "a computer program which is embodied in a machine or product and which cannot be copied during the ordinary operation or use of the machine or product."[53]

2. Limits on Public Display and Performance

The 1976 Act also includes specific exemptions from the exclusive rights to publicly display and perform copyrighted works. Section 109 exempts the public display of a lawful copy of a copyrighted work by its rightful owner.[54] Without this exemption, it would be a violation of the

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copyright owner parts with title to a particular copy of his copyrighted work, he thereby divests himself of his exclusive right to vend that particular copy.").

50. 17 U.S.C. § 109(b) (1994).

51. Pub. L. No. 101-650, Tit. VIII § 804, 104 Stat. 5136 (Dec. 1, 1990) (codified at 17 U.S.C. § 109(b) (1994)). *See generally* Kenneth R. Corsello, The Computer Software Rental Amendments Act of 1990: Another Bend in the First Sale Doctrine, 41 Cath. U. L. Rev. 177 (1991) (discussing the effect the ease of duplication since the digital age has had on the first sale doctrine).

52. *See* Michael D. McCoy & Needham J. Boddie, II, Cybertheft: Will Copyright Law Prevent Digital Tyranny on the Superhighway?, 30 Wake Forest L. Rev. 169, 174-75 (1995) (discussing indistinguishable differences between a copy and an original in digital reproductions).

53. 17 U.S.C. § 109(b)(1)(B)(I).

54. 17 U.S.C. § 109(c) (1994).

copyright law to publicly display a photograph, painting, or other copyrighted work without the permission of the copyright owner. This exemption applies whether the display is direct (hanging the painting) or by projection of no more than one image at a time (showing slides of one or more paintings in a series). However, the viewers must be "present at the place where the copy is located."[55]

Section 110 exempts from the public performance and display rights the "communication of a transmission embodying a performance or display of a work by the public reception of the transmission on a single receiving apparatus of a kind commonly used in private homes."[56] Without this exemption, an individual could be liable for violating the public performance or display rights if she allowed guests to overhear a radio broadcast or see a television broadcast in her home that included copyrighted works.[57] To qualify for the exemption, the user must neither charge others to see or listen to the transmission, nor further retransmit it to the public.

The exemptions from the public performance and display rights recognize the interests of users and purchasers of copyrighted works. Without the section 109 exemption, the owner of a copyrighted work, unless she also held the copyright itself, could not publicly display the work. Without the section 110 exemption, listeners and viewers of radio and television broadcasts would be liable if the public overheard their reception of those broadcasts, even though the copyright holders had no power under the copyright law to prevent the public from hearing or seeing those same broadcasts directly. The 1976 Act reflects a conviction that situations such as these were unfair to the users of copyrighted works and unduly and unnecessarily restricted their rights.

3. Limits on Rights in Computer Programs

Congress reflected a similar motivation when it granted owners of a "copy" of a computer program the right, under certain circumstances, to make a single copy or adaptation, without obtaining the copyright holder's permission. The copy or adaptation must be either for "archival purposes" or an "essential step" in using the program.[58] The "archival purpose" exemption to the exclusive reproduction right allows owners of computer software to protect their investment, should their "original" be damaged or destroyed. The "essential step" exemption recognized that nearly all computer software must be copied onto a hard drive or an executable floppy disk before use. To allow the copyright holder to sell a copy of a program, but then restrict its use by not authorizing the copy that was essential to its execution would be absurd.[59]

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55. Id.
56. 17 U.S.C. § 110(5) (1994).
57. Buck v. Jewell-LaSalle Realty Co., 283 U.S. 191, 196 (1931).
58. 17 U.S.C. § 117 (1994).
59. Congress created a commission to make recommendations concerning copyright

4. Other Statutory Licenses

The 1976 Act included sweeping limits on the exclusive rights of copyright holders in a series of statutory licenses. Many of the statutory licenses address specific groups of users of copyrighted works. Some of those groups are industries who participate in markets that Congress believed would not permit efficient, face-to-face bargaining over copyright rights.[60] Congress gave cable television operators who retransmit local over-the-air broadcast television signals a "compulsory" license to retransmit the copyrighted programming contained in those signals.[61] The compulsory license denied the copyright holders the right to stop the use of the copyrighted programming, but it assured that they would receive some compensation for this uncontrolled use in the form of the license fee paid by cable operators.

Congress included a similar compulsory license for manufacturing and distributing recordings of nondramatic musical works.[62] Once the copyright holder has distributed, or authorized the distribution of, recordings of a nondramatic musical work in the United States, anyone else can make and distribute that work, without the copyright holder's permission, upon paying a statutory royalty. The 1976 Act included other compulsory licenses for operators of jukeboxes[63] and for noncommercial broadcasters.[64]

Congress believed that without these compulsory licenses, the public would be denied access to information and entertainment because of market conditions that did not provide copyright holders sufficient incentive to create and disseminate. Congress therefore imposed a structure designed to replicate a functioning market and supply the necessary incentive. Subsequent experience has shown that Congress was almost certainly incorrect in its assumptions that the market was not functioning and that a compulsory license was an effective substitute.[65] But the effort did reflect proper concern for providing the incentive

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protection for computer programs. The commission recommended to include the revision to § 117 in 1980, "[b]ecause the placement of a work into a computer is the preparation of a copy, the law should provide that persons in rightful possession of copies of programs be able to use them freely without fear of exposure to copyright liability." CONTU Final Report, supra note 6, at 13.

60. H.R. Rep. No. 1476, 94th Cong., 2d Sess. 89 (1976) ("[I]t would be impractical and unduly burdensome to require every cable system to negotiate with every copyright owner whose work was retransmitted by a cable system.") [hereinafter House Report].

61. 17 U.S.C. § 111 (1994).

62. 17 U.S.C. § 115 (1994).

63. 17 U.S.C. § 116 (1994).

64. 17 U.S.C. § 118 (1994).

65. *See* Fred H. Cate, Cable Television and the Compulsory Copyright License, 42 Fed. Comm. L.J. 191, 220-32 (1990) (discussing the attacks on the compulsory cable copyright license system).

necessary for guaranteeing the public's access to copyrighted expression.

The 1976 Act accorded other user groups special treatment based on their socially valuable, nonprofit status. For example, libraries and archives open to the public may reproduce and distribute works under specified conditions without the permission of the copyright holder.[66] Nonprofit educational institutions, governmental bodies, religious organizations, nonprofit agricultural or horticultural organizations, veterans' organizations, and other specified groups may perform or display copyrighted works publicly under certain conditions without first obtaining permission.[67]

5. Fair Use

As opposed to exemptions from the copyright holder's exclusive rights or statutory licenses to invade those rights, "fair use" constitutes a statutory defense to copyright infringement. According to the 1976 Act, certain uses of copyrighted works may be fair "for purposes such as criticism, comment, news reporting, teaching (including multiple copies for classroom use), scholarship, or research . . . ."[68] Fair use expressly permits certain uses of copyrighted works that serve important public purposes and that do not harm the market for the original work. The 1976 Act sets out four factors for courts to consider when determining whether an otherwise infringing use is fair.[69] Courts often focus on the fourth factor: "the effect of the use upon the potential market for or value of the copyrighted work."[70] According to the Supreme Court, unauthorized uses of copyrighted works are unfair if (1) it is proved that the particular use is harmful to the market for the original work; or (2) it is shown by a preponderance of the evidence that "should [the use] become widespread, it would adversely affect the potential market for the copyrighted work."[71]

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66. 17 U.S.C. § 108 (1994).

67. Id. § 110.

68. 17 U.S.C. § 107 (1994).

69. In determining whether the specific use made of a work in any particular case is fair, the factors to be considered shall include—

(1) the purpose and character of the use, including whether such use is of a commercial nature or is for nonprofit educational purposes;

(2) the nature of the copyrighted work;

(3) the amount and substantiality of the portion used in relation to the copyrighted work as a whole; and

(4) the effect of the use upon the potential market for or value of the copyrighted work.

Id.

70. Id.

71. Harper & Row Publishers, Inc. v. Nation Enters., 471 U.S. 539, 566 (1985) ("This last factor is undoubtedly the single most important element of fair use."); Sony Corp. of Am. v. Universal City Studios, Inc., 464 U.S. 417, 451 (1984); *see also* Campbell v. Acuff-Rose Music, 510 U.S. 569, 590 (1994) (considering effect of use upon potential market to determine fair use).

All that is necessary "is a showing by a preponderance of the evidence that some meaningful likelihood of future harm exists."[72] Courts therefore often look at markets for related works. For example, in a case involving the copying of an excerpt for a book, the court would likely consider the impact of the unauthorized copying on sales of the book, reprint rights, serialization rights, and other economically valuable uses protected by copyright.[73]

The range of related markets that courts may consider is not limitless. As the Supreme Court noted recently, "[t]he market for potential derivative uses includes only those that the creators of original works would in general develop or license others to develop."[74] When a court finds an allegedly infringing use of a copyrighted work for which there is no market and no reasonable likelihood of a market developing, it is more likely to find the use to be fair.[75] For example, courts are more likely to find fair use when the work copied is out-of-print than when it is readily available in the bookstore.[76] Similarly, courts will more likely find fair use when the amount of a book copied is a paragraph, rather than an entire chapter. In both cases, the court's preference rests on the belief that there is little present market for the infringed work, and little chance of one developing in the foreseeable future. In the first example, the court may presume little market interest in the work from the fact that no publisher is willing to offer the work for sale. In the second example, the court's conclusion rests on the assumption that there is no market for single paragraphs of books.

Fair use, like statutory licenses, reflects a significant adjustment in the balance between the availability of expression and the restrictions thought necessary to promote that expression. These statutory provisions focus on uses that Congress believed to be particularly important and that have little impact on the economic incentive to create and disseminate. In those

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72. *Sony*, 464 U.S. at 451.

73. *See Harper & Row*, 471 U.S. at 568:

> [T]o negate fair use one need only show that if the challenged use "should become widespread, it would adversely affect the potential market for the copyrighted work." This inquiry must take account not only of harm to the original but also of harm to the market for derivative works. "If the defendant's work adversely affects the value of any of the rights in the copyrighted work . . . the use is not fair."

(quoting *Sony*, 464 U.S. at 451; 3 Melville B. Nimmer, Nimmer on Copyright, § 13.05[B], at 13-205 to 13-206 (1995)) (citations omitted).

74. *Campbell*, 510 U.S. at 592.

75. *See, e.g.*, id. The *Campbell* Court stated:

> The market for potential derivative uses includes only those that creators of original works would in general develop or license others to develop. Yet the unlikelihood that creators of imaginative works will license critical reviews of lampoons of their own productions removes such uses from the very notion of a potential licensing market.

Id.

76. S. Rep. No. 473, 94th Cong., 1st Sess., 64 (1975) [hereinafter Senate Report] ("If the work is 'out of print' and unavailable for purchase through normal channels, the user may have more justification for reproducing it.").

limited circumstances, the 1976 Act permits copyright users to engage in activities otherwise protected by the exclusive rights of copyright holders.

6. Protection for Expression Only

The most significant limit in copyright today, and the one most consonant with the First Amendment, is that the law protects expression only. No matter how original or creative, "[i]n no case does copyright protection for an original work of authorship extend to any idea, procedure, process, system, method of operation, concept, principle, or discovery, regardless of the form in which it is described, explained, illustrated, or embodied in such work."[77] In *Feist Publications, Inc. v. Rural Telephone Service Co.*,[78] a unanimous Supreme Court stressed: "The most fundamental axiom of copyright law is that '[n]o author may copyright his ideas or the facts he narrates.' . . . [C]opyright assures authors the right to their original expression, but encourages others to build freely upon the ideas and information conveyed by a work."[79]

Copyright law protects original organization and the structure of compilations of unprotectable facts or ideas, but never the facts or ideas themselves.[80] The Court in *Feist* therefore held that a compilation of facts—in that case, a telephone directory—could be copyrighted only "if it features an original selection or arrangement of facts," but that "[i]n no event may copyright extend to the facts themselves."[81]

The basis for the exclusion of facts and ideas from copyright protection, according to the Court, is the United States Constitution.[82] Although the 1976 Act explicitly excludes facts and ideas from copyright protection,[83] the statutory provision merely restates a constitutional requirement. Facts may not be copyrighted because they "do not owe their origin to an act of authorship."[84] Therefore, they do not meet the constitutional requirement of originality.[85] Although "[i]t may seem unfair that much of the fruit of the compiler's [as opposed to creator's] labor may be used by others without compensation," the unanimous Court stressed, "this is not 'some unforeseen byproduct of a statutory scheme.' It is, rather, 'the essence of copyright,' and a constitutional requirement."[86]

Given the constitutional importance of not extending copyright protection to facts or ideas, courts will not even protect expression if it

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77. 17 U.S.C. § 102(b) (1994).
78. 499 U.S. 340 (1991).
79. *Id.* at 344-45, 349 (quoting *Harper & Row*, 471 U.S. at 556).
80. 17 U.S.C. § 103(b) (1994).
81. *Feist*, 499 U.S. at 350-51.
82. Id. at 346-47.
83. 17 U.S.C. § 102(b).
84. *Feist*, 499 U.S. at 347.
85. Id. at 346-47.
86. Id. at 349 (quoting *Harper & Row*, 471 U.S. at 589 (Brennan, J., dissenting)) (citations omitted).

includes one of a limited number of ways of conveying an idea, concept, or fact, or if it is necessary to implementing an idea or concept. Under the doctrine of "merger," courts withhold copyright protection from original, fixed expression if that expression is necessarily incident to the work's underlying ideas or data.[87] In that situation, courts find that the expression and the underlying idea or fact have "merged."[88] The doctrine of merger highlights the importance of preventing copyright law from ever protecting a fact or idea: it is preferable to exclude otherwise protectable expression from copyright law's monopoly rather than allow that monopoly to extend to any fact or idea.

7. The Missing Exclusive Rights

It is worth noting the exclusive rights that copyright law does *not* convey to the copyright holder. Foremost among these omitted rights are any rights to control private use of lawfully made copies of copyrighted works. The law grants the copyright holder no power to prevent anyone from reading or privately performing or displaying that work. Members of the public can read books, hang paintings in their homes, listen to the radio or television,[89] or sing their favorite songs in the shower:[90] copyright law grants to copyright holders no rights to interfere with those private activities. Moreover, under the first sale doctrine, the owner of a lawful copy of a copyrighted work may dispose of that work, permanently or temporarily, in any manner she wishes. Unless the work is a sound recording or computer program, the owner can sell it, rent it, give it away, or destroy it. Users of copyrighted works can also copy the facts or ideas contained in the works without attribution. Users can even copy expression under the fair use doctrine for purposes such as education, news reporting, and parody. The Supreme Court ruled in 1984 that the copyright law even permitted television viewers to record entire copyrighted programs for later viewing.[91]

The rights omitted from U.S. copyright law are particularly

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87. Baker v. Selden, 101 U.S. 99, 104 (1879).

88. *See* Herbert Rosenthal Jewelry Corp. v. Kalpakian, 446 F.2d 738, 742 (9th Cir. 1971) ("When the 'idea' and its 'expression' are thus inseparable, copying the 'expression' will not be barred, since protecting the 'expression' in such circumstances would confer a monopoly of the 'idea'"); Merrit Forbes & Co. v. Newman Inv. Serv., 604 F. Supp. 943, 951 (S.D.N.Y. 1985) ("where an underlying idea may only be conveyed in a more or less stereotyped manner, duplication of that form of expression does not constitute infringement, even if there is word for word copying"). *See generally* Goldstein, supra note 35, § 2.3.2 (summarizing the doctrine of merger).

89. *See* Teleprompter Corp. v. CBS, 415 U.S. 394 (1974) (finding no violation of copyright law by the public for viewing television broadcasts); Fortnightly Corp. v. United Artists, 392 U.S. 390, 398-99 (1968) (viewing broadcast television programs by public not a "performance" and therefore not protected by copyright law).

90. Twentieth Century Music Corp. v. Aiken, 422 U.S. 151, 155 (1975) ("No license is required by the Copyright Act, for example, to sing a copyrighted lyric in the shower.").

91. Sony Corp. of Am. v. Universal City Studios, Inc., 464 U.S. 417, 433 (1984).

noteworthy when viewed in the context of other nations' copyright laws, particularly those of continental Europe. These countries "recognize the *moral right* of the author, which treats the author's work not just as an economic interest but as an inalienable, natural right and an extension of the artist's personality."[92] Copyright laws in these countries do not grant affirmative rights to achieve an identified public purpose, but rather recognize preexisting rights in the creators themselves.[93] Moreover, creators cannot waive or contract away their moral rights and those rights are not subject to limitations such as statutory licenses or fair use. In short, the creators' rights are absolute.

United States copyright law is wholly different.[94] It reflects its statutory purpose of protecting copyright holders' rights only as a means to promote creativity. As indicated by the rights that Congress could have included in the copyright law, but chose not to, American law evinces a significant regard for private uses of copyrighted works. Under the copyright law, creators do not have to create; if they create, they do not have to disseminate. But if they do create and disseminate, they have very few rights to control the private uses of their copyrighted works. They cannot deny the public the ability to use a work for its intended purpose (*i.e.*, if the work is a book, to read it; if a painting, to display it; if a song, to sing it; if a computer program, to run it). Other countries recognize no user rights or impose limits on private use of the facts or ideas contained in a copyrighted work. For example, Great Britain charges a royalty every time a library loans a book.[95] But the United States has eschewed such limits on public access to copyrighted works.

C. Copyright as Incentive and the First Amendment

Congress might have gone a step farther and explicitly granted rights to users of copyrighted works.[96] Such a provision might recognize the

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92. Marshall Leaffer, Understanding Copyright Law § 8.27[A], at 275-76 (1989).

93. These "moral rights" differ from country to country, but generally include: the right of integrity (protecting the work from mutilation or distortion); the right of withdrawal (the right to withdraw, modify, or disavow a work after publication); the right of paternity (the right to be identified as the work's creator); and the right of disclosure (the right to decide when and in what form the work will be made public). Id.; *see also* Goldstein, supra note 35, § 15.23 (summarizing these moral rights).

94. In 1990 Congress amended the 1976 Act to create certain moral rights of attribution and integrity for creators of visual art. Pub. L. No. 101-650, Tit. VIII § 804, 104 Stat. 5136 (Dec. 1, 1990) (codified in 17 U.S.C. § 106A (1994)). The narrowness of the new rights indicates the disfavor accorded moral rights in U.S. law. For example, the rights apply only to works of fine art that exist in a single copy or in signed, numbered editions of fewer than 200 copies. Congress exempted from the new rights virtually all significant commercial uses. And the rights, unlike the other exclusive rights, expire with the death of the creator. 17 U.S.C. § 106A. *See* Goldstein, supra note 35, § 5.12 (Supp. 1994) (explaining the U.S.'s limited adoption of moral rights).

95. *See generally* Paul Goldstein, Copyright's Highway 163-64 (1994); John Cole, Public Lending Right, 42 Library of Congress Info. Bull. 427 (Dec. 12, 1983).

96. *See* Jessica Litman, The Exclusive Right to Read, 13 Cardozo Arts & Ent. L.J. 29, 38

rights of the public to read, privately perform and display, and otherwise privately use copyrighted works. These rights would presumably be the mirror image of the exclusive rights granted to copyright owners in the current law. There are at least four reasons why Congress did not take this course. First, Congress almost certainly perceived it as unnecessary, choosing instead to grant specific rights to copyright holders and reserve all others for the public. This seems to be the Supreme Court's[97] and the Clinton Administration's[98] view of copyright law.

Second, any other structure would have been unwieldy. Given the many uses to which the public may put copyrighted works, how could Congress capture them all in a statute? And even if codified, these rights could not be "exclusive," because all members of the public are free to exercise them.

The third reason why Congress did not enumerate the rights of users is that the whole focus of copyright law, and the structure of current protection, is to provide incentives for creating and disseminating expression *for the benefit of the public.* The public's interest in copyright is not secondary to the interests of copyright holders; it is the basis for those rights. The only reason the law grants copyright holders any exclusive rights at all is to serve the paramount interests of the public, reflected in both the Copyright Clause and the First Amendment. "The sole interest of the United States and the principal object in conferring the monopoly" of copyright law, the Supreme Court has written, "lie in the general benefits derived by the public from the labors of authors."[99] Congress also noted

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(1994) (discussing the statute's lack of a provision concerning one's right to "read, see, hear, or download copyrighted works").

97. Fortnightly Corp. v. United Artists, 392 U.S. 390, 393-95 (1968). The *Fortnightly* Court stated:

> The Copyright Act does not give a copyright holder control over all uses of his copyrighted work. Instead, § 1 of the Act enumerates several 'rights' that are made 'exclusive' to the holder of the copyright. If a person, without authorization from the copyright holder, puts a copyrighted work to a use within the scope of one of these 'exclusive rights,' he infringes the copyright. If he puts the work to a use not enumerated in § 1, he does not infringe.

Id.

98. Information Infrastructure Task Force, Intellectual Property and the National Information Infrastructure: The Report of the Working Group on Intellectual Property Rights 73 n.227 (Sept. 1995) [hereinafter IITF Report]. The IITF Report states:

> [U]sers are not granted any affirmative "rights" under the Copyright Act; rather, copyright owners' rights are limited by exempting certain uses from liability. It has been argued, however, that the Copyright Act would be unconstitutional if such limitations did not exist, as they reduce First Amendment and other concerns.

Id.

99. Fox Film Corp. v. Doyal, 286 U.S. 123, 127 (1932); *see also* Sony Corp. of Am. v. Universal City Studios, Inc., 464 U.S. 417, 429, 450 (1984) ("The purpose of copyright is to create incentives for creative effort. . . . [T]he limited grant is a means by which an important public purpose may be achieved"); Twentieth Century Music Corp. v. Aiken, 422 U.S. 151, 156 (1975) ("[T]he ultimate aim is, by [granting exclusive rights] to stimulate artistic creativity for

the underlying public interest when considering the 1909 Act.[100]

The structure of copyright law reflects this constitutional purpose. The law grants creators only those rights necessary to exploit the market potential of their works. Copyright holders alone may reproduce, adapt, distribute, and publicly perform and display their expression. But copyright holders are powerless to prevent copyright users from making any other use of copyrighted expression, and any use at all of the facts or ideas conveyed by that expression.

The contours of copyright protection are consistent with the requirements of the First Amendment, which suggest the fourth reason why Congress did not believe it necessary to enumerate user rights in copyright law: the First Amendment already largely protects user rights.[101] The Supreme Court has repeatedly asserted that the First Amendment "was fashioned to assure unfettered interchange of ideas."[102] The Court has stressed the importance of preventing the government from interfering with that interchange.[103] Often characterized as a "marketplace of ideas," this central First Amendment tenet requires that "[d]iscussion must be kept open."[104]

The First Amendment therefore restrains the ways in which copyright law may operate. Any interpretation of copyright law that allowed copyright holders to monopolize or constrain public discussion would almost certainly violate the First Amendment.[105] More importantly, the First

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the general public good.... [P]rivate motivation must ultimately serve the cause of promoting broad public availability of literature, music, and the other arts."); Mazer v. Stein, 347 U.S. 201, 219 (1954) ("The economic philosophy behind the clause empowering Congress to grant patents and copyrights is the conviction that encouragement of individual effort by personal gain is the best way to advance public welfare through the talents of authors and inventors in 'Science and useful Arts.'"); United States v. Paramount Pictures, 334 U.S. 131, 158 (1948) ("The copyright law, like the patent statute, makes reward to the owner a secondary consideration.").

100. As the House of Representatives noted:

> The enactment of copyright legislation by Congress under the terms of the Constitution is not based upon any natural right that the author has in his writings, ... but upon the ground that the welfare of the public will be served and progress of science and useful arts will be promoted by securing to authors for limited periods the exclusive rights to their writings.

H.R. Rep. No. 2222, 60th Cong., 2d Sess. 7 (1909).

101. U.S. Const. amend. I ("Congress shall make no law ... abridging freedom of speech, or of the press ....").

102. New York Times Co. v. Sullivan, 376 U.S. 254, 269 (1964).

103. FCC v. League of Women Voters, 468 U.S. 364, 381-82 (1984) ("The freedom of speech and of the press guaranteed by the Constitution embraces at least the liberty to discuss publicly and truthfully all matters of public concern without previous restraint or fear of subsequent punishment." (quoting Thornhill v. Alabama, 310 U.S. 88, 101-02 (1940) (footnote omitted))).

104. Thomas Emerson, The System of Freedom of Expression 6-7 (1970). *See generally* Fred H. Cate, The First Amendment and the National Information Infrastructure, 30 Wake Forest L. Rev. 1, 9-18 (1995) (stressing the importance of government not interfering with communication).

105. Any interpretation of copyright law that allowed copyright holders to monopolize or

Amendment signals the constitutional purpose—a marketplace of expression and ideas—that copyright serves. As the Supreme Court has written, "it should not be forgotten that the Framers intended copyright itself to be the engine of free expression. By establishing a marketplace right to the use of one's expression, copyright supplies the economic incentive to create and disseminate ideas."[106] The rights of users of those ideas required no explication in the 1976 Act because the interests of users were the constitutional justification for the Act itself.

II. COPYRIGHT LAW AND DIGITAL INFORMATION

A. The Digital Information Context

"Digital information," in its literal sense, refers to information captured and expressed by combinations of 0s and 1s, no matter in what medium. Of course, the human eye does not readily perceive "0s" and "1s"; if perceived, the digits provide little useful information. Therefore, a machine must translate digital information for it to convey any meaning to a human user. Many types of technologies can translate digital information—compact disc players, digital audio tape players and recorders, personal disc systems, digital cameras, video recorders and players, digital clocks and watches, pagers, and digital cordless telephones. But computers convey the most digital information that is the subject of copyright law. Computers read 0s and 1s as low and high energy impulses and translate them into intelligible information, displayed as text or images on a monitor or broadcast as sound through speakers. Computerized digital information can be captured on floppy disks, magnetic tape, fixed (or hard) disks, compact discs, microchips, or in RAM.[107]

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constrain public discussion about issues concerning public officials and the conduct of the government would be antithetical to the very structure of the government created by the Constitution. Former Judge Robert Bork has written:

> The first amendment indicates that there is something special about speech. We would know that much even without a first amendment, for the entire structure of the Constitution creates a representative democracy, a form of government that would be meaningless without freedom to discuss government and its policies. Freedom for political speech could and should be inferred even if there were no first amendment.

Robert H. Bork, Neutral Principles and Some First Amendment Problems, 47 Ind. L.J. 1, 23 (1971); *see also* Alexander Meiklejohn, The First Amendment Is an Absolute, 1961 Sup. Ct. Rev. 245, 253-56 ("[The First Amendment] protects the freedom of those activities of thought and communication by which we govern"). *See generally* Fred H. Cate, Defining California Civil Code Section 47(3): The Resurgence of Self-Governance, 39 Stan. L. Rev. 1201, 1218-22 (1987) (explaining that in a democratic society, speech about self-governance must be protected).

106. Harper & Row Publishers, Inc. & Nation Enters., 471 U.S. 539, 558 (1985).

107. RAM refers to random access memory and is the computer's active, "thinking" memory. RAM must be constantly "refreshed" by electric current to retain its digital content. Unlike other forms of digital media, RAM is erased when a computer is turned off.

Digital information plays an astonishingly vital role in U.S. and global markets, as well as in almost every facet of daily life. Although figures vary, information services and products generally are either the first or second largest sector of the U.S. economy, accounting for ten to twelve percent of Gross Domestic Product.[108] Of that sector, digital information accounts for the lion's share, with business and consumer spending on high-tech, digital information equipment responsible for thirty-eight percent of economic growth since 1990.[109] During the 1980s, U.S. business alone invested $1 trillion in information technology.[110] In the global economy, the management and transmission of global digital information constitutes the world's largest economic sector.[111] It is little wonder that the Clinton Administration has identified digital information as "one of the nation's most critical economic resources. . . . In an era of global markets and global competition, the technologies to create, manipulate, manage and use information are of strategic importance to the United States."[112]

Increasingly, users import digital information over telephone lines or hardwired connections directly from one machine to another. The linkages create information "networks." These networks, whether joining the computers in a single office or linking vast numbers of other networks around the globe, are rapidly dominating business, government, education, and even entertainment in the United States and throughout the world. The Internet—the most ubiquitous of information networks—connects more than 45,000 separate networks and 37 million users in 161 countries.[113] Those users generate an estimated 100 million e-mail messages every day.[114] As of January 1996, there were 9.4 million advertised hosts—computers providing information via the Internet—representing an annual growth rate of eighty-five percent.[115]

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108. Remarks of Secretary Ronald H. Brown, supra note 8; Remarks by Vice President Al Gore, supra note 8.

109. Michael J. Mandel et al., The Digital Juggernaut, Bus. Wk., June 6, 1994, at 22.

110. Howard Gleckman, The Technology Payoff, Bus. Wk., June 14, 1993, at 57. The Office of Technology Assessment, a research arm of Congress, wrote a decade ago: "Information and information-based products and services are not only valuable economic commodities in and of themselves; their use also increasingly affects the performance of other economic sectors. The application of information technology is responsible for vast increases in productivity in manufacturing industries, offices, financial services, and scientific research." U.S. Congress, Office of Technology Assessment, Intellectual Property Rights in an Age of Electronics and Information 225 (1986).

111. NTIA Fact Sheet, supra note 7, at 2.

112. Information Infrastructure Task Force, National Information Infrastructure Agenda for Action 5 (1993) [hereinafter Agenda for Action].

113. Latest Estimates of Internet Growth, Online Newsletter, Nov. 1994; Win Treese, The Internet Index, Jan. 2, 1996 (available at: http://www.openmarket.com/intindex/96-01.htm); Network Wizards, Distributions by Top-Level Domain Name (by name), Internet Domain Survey (Jan. 1996) (available at: http://www.nw.com/zone/www/dist-byname.html).

114. *See* On-line Exchanges Can Reach Thousands, Plain Dealer, June 11, 1995, at 17A.

115. Anthony M. Rutkowski, Internet Trends (Feb. 1996) (available at: http://www.genmagic.com/internet/trends/sld003.htm).

Seventy-six thousand advertised World Wide Web hosts offer the sites to which the majority of people who use the Internet report having connected, and that figure represents an annual growth rate of 2,400%.[116] In addition, there are more than 150,000 electronic bulletin boards in North America alone, which, like their cork counterparts, allow users to post and read messages.[117]

Digital technologies have become the principal tools for creating and storing information today. The application of copyright law to digital information is therefore critical to the rich arena of information and ideas that the First Amendment anticipates and the copyright law serves.

B. The Technological Transformation of Copyright Law

Digital information, particularly networked information, threatens to extend the monopoly afforded by copyright law and to frustrate the law's purpose of giving the public access to more expression and ideas. This copyright revolution is wrought entirely through two technological features of digital information: (1) a user must reproduce digital expression to access it; and (2) a user must display or perform digital expression to access it on a computer.[118]

1. Reproduction

The first legally significant technological feature of digital information

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116. Id.; Treese, supra note 113.

117. *See* Fast Fact, Toronto Star, Nov. 3, 1994, at J1.

118. The other two exclusive rights—the right to distribute and the right to adapt—are also implicated by digital information. For example, one court has found that operation of a computer bulletin board from which subscribers could obtain unauthorized copies of copyrighted photographs violated the copyright holder's exclusive right to distribute those photographs. Playboy v. Frena, 839 F. Supp. 1552, 1556 (M.D. Fla. 1993). On the other hand, because the dissemination of digital information inherently involves its reproduction, it is unlikely that the right to distribute could be infringed without the right to reproduce being infringed as well. *See* IITF Report, supra note 98, at 66 n.205.

The right to adapt, *i.e.*, to prepare derivative works, is likely to be infringed when digital information is accessed. The 1976 Act defines a "derivative work" as "a work based upon one or more preexisting works, such as a translation, musical arrangement, dramatization, fictionalization, motion picture version, sound recording, art reproduction, abridgment, condensation, or any other form in which a work may be recast, transformed, or adapted." 17 U.S.C. § 101. Computers may create derivative works, in RAM, as digital files on a hard drive or floppy disk, or as screen displays, when executing a program. It is for this reason that § 117 protects the user's right to make a copy "or adaptation" of a program if it is an essential requirement for using the program or is necessary for archival purposes. Id. § 117. The exemption does not, however, apply to derivative works created in other digital contexts.

Surprisingly, the law does not require that a work be "fixed" in order to be a derivative work. House Report, supra note 60, at 62. Therefore, even if courts find that a work created by a computer is not fixed, it may still constitute a derivative work and therefore violate one of the copyright holder's exclusive rights. The distribution and adaptation rights are relevant to digital copyrighted works, but, with this exception, no more so than they are to uses of copyrighted works in a non-digital environment. As a result, this Article does not address those rights further.

is that it must be reproduced to be accessed. For a computer word processor to display a document, it must first copy the file of 0s and 1s containing that document into its RAM; to save the document for later use requires copying it to a hard drive, floppy disk, or magnetic tape. For a multimedia computer to display an image or perform a video, it must first copy the file containing the image or video into RAM. For one computer to access a document or image or sound stored on a network it must first copy some or all of that document into RAM. Often the computer copies data present in RAM onto a "cache" on the computer's hard drive as well.

The information contained in the file cannot be accessed without a copy being made.[119] Under current interpretations of the 1976 Act, those copies violate the copyright holder's exclusive right to make copies of the copyrighted work.[120] The 1976 Act defines "copies" as "material objects . . . in which a work is fixed . . . and from which the work can be perceived, reproduced, or otherwise communicated, either directly or with the aid of a machine or device."[121]

a. Are Digital Copies Fixed?

The 1976 Act defines a work as "fixed" when its embodiment in a copy "is sufficiently permanent or stable to permit it to be perceived, reproduced, or otherwise communicated for a period of more than transitory duration."[122] According to the House Report on the 1976 Act:

> [I]t makes no difference what the form, manner, or medium of fixation may be—whether it is in words, numbers, notes, sounds, pictures, or any other graphic or symbolic indicia, whether embodied in a physical object in written, printed, photographic, sculptural, punched, magnetic, or any other stable form, and whether it is capable of perception directly or by means of any machine or device "now known or later developed."[123]

Under this broad definition, a work copied onto a hard drive, floppy disk, or magnetic tape is certainly fixed. A user can view, copy, print, and otherwise communicate it with the aid of a computer. The work is present on the hard drive or floppy disk until erased; turning the computer off or disconnecting power from the system will not affect the copy. Therefore, unauthorized reproduction of a work onto a hard drive or floppy disk violates the exclusive right of the copyright holder. This was the clear

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119. *See* McCoy & Boddie, supra note 52, at 185 ("Virtually every transmittal of a work across the superhighway will involve the exclusive right to copy. Printing to paper, copying to disk, and loading into memory all amount to reproduction.").

120. 17 U.S.C. § 106.

121. Id. § 101. A copy need not be exact to violate the exclusive right to reproduce. Nichols v. Universal Pictures Corp., 45 F.2d 119, 121 (2d Cir. 1930) (stating that reproduction "cannot be limited literally to the text, else a plagiarist would escape by immaterial variations"), *cert. denied*, 282 U.S. 902 (1931).

122. 17 U.S.C. § 101.

123. House Report, supra note 60, at 52.

intention of Congress[124] and is the consistent view of modern courts.[125]

The more recent and more vexing question is whether digital information is fixed when merely copied into RAM. Initially, the answer appeared to be "no," because RAM is completely erased when the computer is turned off.[126] Courts, therefore, concluded that RAM was of "transitory duration" and insufficiently "permanent" or "stable" to meet the statutory definition of "fixed."[127] More recent cases, however, have found that a work can be fixed in RAM and therefore that the unauthorized copying of a work into RAM constitutes copyright infringement.

The only appellate court to address the issue directly is the Ninth Circuit Court of Appeals in *MAI Systems Corp. v. Peak Computer*.[128] Plaintiff MAI Systems manufactured computers and designed software that it subsequently licensed to customers to run on MAI machines. The terms of the license did not allow MAI's customers to transfer any of the rights it conveyed to other parties. Defendant Peak Computer maintained and repaired computer systems, including those created by MAI. In the course of those repairs, Peak's technicians operated the computer and its software. MAI sued Peak, alleging that running the software required making a copy of its copyrighted expression in RAM and therefore violated MAI's exclusive right to reproduce.

The district court granted MAI's motion for summary judgment, concluding that, for purposes of copyright law, the user makes a copy when she transfers a computer program from a permanent storage device,

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124. *See* 17 U.S.C. § 101 ("'Literary works' are works, other than audiovisual works, expressed in words, numbers, or other verbal or numerical symbols or indicia, regardless of the nature of the material objects, such as books, periodicals, manuscripts, phonorecords, film, tapes, disks, or cards, in which they are embodied.").

125. Apple Computer v. Franklin Computer Corp., 714 F.2d 1240, 1243 (3d Cir. 1983), *cert. denied*, 464 U.S. 1033 (1984) ("A computer program can be stored or fixed on a variety of memory devices . . . [including] a diskette or 'floppy disk' . . . ."); Stern Elecs. v. Kaufman, 669 F.2d 852, 856 (2d Cir. 1982); Triad Sys. Corp. v. Southeastern Express Co., 1994 WL 446049, at *6, 1994 U.S. Dist. LEXIS 5390, at *20 (N.D. Cal. 1994) ("[T]he Court is persuaded that these copies to tapes and hard disks are sufficiently fixed to be deemed copies under the Copyright Act as a matter of law"); *see also* Goldstein, supra note 35, § 2.15.2 n.56 (and sources cited therein) (reviewing judicial decisions upholding the copyrightabilty of computer programs); McCoy & Boddie, supra note 52, at 177 (discussing that copies must be recorded on a tangible medium to be subject to copyright law).

126. According to the House Report on the 1976 Act: "[T]he definition of 'fixation' would exclude from the concept purely evanescent or transient reproductions such as those projected briefly on a screen, shown electronically on a television or other cathode ray tube, or captured momentarily in the 'memory' of a computer." House Report, supra note 60, at 53.

127. In *Apple Computer*, decided in 1983, the Third Circuit Court of Appeals found that ROM (read-only memory, which contains digital information on a chip) is fixed because it retains information even after the computer is turned off. The court then noted: "In contrast to the permanent memory devices a RAM (random access memory) is a chip on which volatile internal memory is stored which is erased when the computer's power is turned off." *Apple Computer*, 714 F.2d at 1243 n.3.

128. 991 F.2d 511 (9th Cir. 1993), *cert. denied*, 510 U.S. 1033 (1994).

such as a hard drive or floppy disk, to a computer's RAM.[129] The appellate court agreed, even though it acknowledged that "[w]e have found no case which specifically holds that the copying of software into RAM creates a 'copy' under the Copyright Act . . . ."[130] The court noted that, although a work "fixed" in RAM is not permanent, the fact that the technician can view it and use it to diagnose the problem with the computer demonstrates that "the representation created in the RAM is 'sufficiently permanent or stable to permit it to be perceived, reproduced, or otherwise communicated for a period of more than transitory duration.'"[131]

The court cited to one prior case,[132] a copyright treatise,[133] and the *Final Report of the National Commission on the New Technological Uses of Copyrighted Works*[134] as authority for its holding:

> We recognize that these authorities are somewhat troubling since they do not specify that a copy is created regardless of whether the software is loaded into the RAM, the hard disk or the read only memory ('ROM'). However, since we find that the copy created in the RAM can be "perceived, reproduced, or otherwise communicated," we hold that the loading of software into the RAM creates a copy under the Copyright Act.[135]

Less than a year later, MAI Systems, by that time bankrupt, argued the same issue before a district court in a different circuit. In a counterclaim against a group of other computer companies which repaired MAI computer systems, MAI again alleged that the operation of the MAI computer software, and the necessary copying of that software into RAM by a party other than the copyright holder or its licensee, constituted infringement. The U.S. District Court for the Eastern District of Virginia agreed:[136]

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129. MAI Sys. Corp. v. Peak Computer, 1992 WL 159803, at *13, 1992 U.S. Dist. LEXIS 21829, at *36-37 (C.D. Cal.) *appeal dismissed in part, aff'd in part by MAI Sys. Corp.*, 991 F.2d 511 (1992). The district court stated:

> [T]he loading of copyrighted computer software from a storage medium (hard disk, floppy disk, or read only memory) into the memory of a central processing unit ('CPU') causes a copy to be made. In the absence of ownership of the copyright or express permission by license, such acts constitute copyright infringement.

Id.

130. *MAI Sys. Corp.*, 991 F.2d at 519.

131. Id. at 518 (quoting 17 U.S.C. § 106).

132. Vault Corp. v. Quaid Software, Ltd., 847 F.2d 255, 260 (5th Cir. 1988) (stating that "the act of loading a program from a medium of storage into a computer's memory creates a copy of the program . . . .").

133. The *MAI* court cited 2 Nimmer on Copyright § 8.08 at 8-105 (1983) ("Inputting a computer program entails the preparation of a copy."); *see also* 2 Nimmer on Copyright, supra note 73, § 8.08[A][1], at 8-111 ("the input of a work into a computer results in the making of a copy . . . .).

134. CONTU Final Report, supra note 6, at 13 (stating that "the placement of a work into a computer is the preparation of a copy").

135. *MAI Sys. Corp.*, 991 F.2d at 519 (quoting 17 U.S.C. § 101).

136. Advanced Computer Serv. of Mich. v. MAI Sys. Corp., 845 F. Supp. 356 (E.D. Va.

> Although the contents of RAM are, in some respects, ephemeral or transient, it is important to remember that the Act does not require absolute permanence for the creation of a copy. . . .
>
> . . . Once a software program is loaded into a computer's RAM, useful representations of the program's information or intelligence can be displayed on a video screen or printed out on a printer. And this can be done virtually instantaneously once loading is completed. Given this, it is apparent that a software program residing in RAM is "stable enough to be perceived, reproduced, or otherwise communicated for a period of more than transitory duration."[137]

The court bolstered its conclusion by suggesting a scenario in which a user loaded a program into RAM and left the computer on for extended periods, even for the life of the computer. "In this event," the court wrote, "the RAM version of the program is surely not ephemeral or transient; it is, instead, essentially permanent and thus plainly sufficiently fixed to constitute a copy under the Act."[138]

The only other court to address the issue also concluded that a copy of part of the plaintiff's copyrighted software in RAM was "fixed" and therefore violated the copyrighted holder's exclusive right to reproduce the work.[139] The U.S. District Court for the Northern District of California stressed that the fact that the software did not generate any screen displays when loaded did not alter its conclusion.[140] More importantly, the court's determination that a copy in RAM was fixed did not turn on how long the copy existed in RAM, but rather on "what that copy does, and what it is capable of doing, while it exists."[141] The court found that the 1976 Act's requirement—that a copy is only fixed when it is "sufficiently permanent or stable to permit it to be perceived, reproduced, or otherwise communicated for a period of more than transitory duration"[142]—did not set some minimum time threshold, but rather a minimum usefulness or value threshold.[143] "This concept is particularly important in cases involving computer technology where the speed and complexity of machines and software is rapidly advancing, and where the diversity of computer architecture and software design is expanding at an ever-increasing rate."[144] The court concluded that the RAM copy of the

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1994).

137. Id. at 362-63 (quoting 17 U.S.C. § 101).

138. Id. at 363.

139. Triad Sys. Corp. v. Southeastern Express Co., 1994 WL 446049, 1994 U.S. Dist. LEXIS 5390.

140. Id., 1994 WL 446049, at *5, 1994 U.S. Dist. LEXIS 5390, at *15.

141. Id., 1994 WL 446049, at *5, 1994 U.S. Dist. LEXIS 5390, at *16.

142. 17 U.S.C. § 101.

143. *Triad Sys.*, 1994 WL 446049, at *5, 1994 U.S. Dist. LEXIS 5390, at *16.

144. Id.

plaintiff's software, although it might exist for "only a millisecond," is the "functional equivalent of a longer lasting copy in other computer systems."[145] The court therefore found the copy to be "fixed."

Although recent case law is consistent, given the limited number of cases and the absence of a Supreme Court decision on point, it is impossible to conclude with certainty that a work copied into RAM is fixed and therefore subject to the exclusive right to reproduce. The determination that RAM is fixed, however, is supported by the reasoning of the courts that have reached that conclusion, and consistent with the language of the 1976 Act and the Computer Software Rental Amendments Act of 1990.[146] Whether RAM *should* be considered fixed is a dubious proposition that has been well-argued elsewhere;[147] it is not the subject of this Article. It is sufficient here to note that if a work in RAM is fixed, then there is no way to access digital information without violating the exclusive right to reproduce.

b. The New Scope of Reproduction

The Clinton Administration's Information Infrastructure Task Force Working Group on Intellectual Property Rights' report reinforces the conclusion that a user must copy a digital work to access its contents:

> [I]n each of the instances set out below, one or more copies is made:
>
> - 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.
> - When a printed work is "scanned" into a digital file, a copy—the digital file itself—is made.
> - When other works—including photographs, motion pictures, or sound recordings—are digitized, copies are made.
> - Whenever a digitized file is "uploaded" from a user's computer to a bulletin board system or other server, a copy is made.
> - Whenever a digitized file is "downloaded" from a bulletin board system (BBS) or other server, a copy is made.
> - When a file is transferred from one computer network user to another, multiple copies generally are made.
>
> Under current technology, when an end-user's computer is employed as a "dumb" terminal to access a

145. Id., 1994 WL 446049, at *5; 1994 U.S. Dist. LEXIS 5390, at *17.

146. Pub. L. No. 101-650, Tit. VIII § 804, 104 Stat. 5136 (Dec. 1, 1990) (codified in 17 U.S.C. § 109(b) (1994)).

147. *See* Litman, supra note 96, at 41-43 (giving authority suggesting that it may not be so clear that "placement of a work into a computer's memory amounts to a reproduction of that work").

> file resident on another computer such as a BBS or Internet host, a copy of at least the portion viewed is made in the user's computer. Without such copying into the RAM or buffer of the user's computer, no screen display would be possible.[148]

According to the Administration's report, it is impossible to load, read, view, listen to, digitize, copy, print, upload, download, transfer, or otherwise access digital information without violating the exclusive right to reproduce. The protection of that one right, when applied in the digital context, is so complete that it even blocks access to facts and ideas, as well as expression. There is no way to obtain facts and ideas in digital format that does not necessitate copying the expression as well. Through a change in technological context, not law, the constitutional purpose of copyright law and its consistency with the First Amendment is frustrated. The exclusive rights, rather than serving as an incentive to ensure greater access, have become an absolute monopoly, through which copyright holders can forbid all access.

Even a decision by the Supreme Court that a work fixed in RAM does not constitute a copy that violates the exclusive reproduction right would improve the situation only slightly. As already noted, most uses of copyrighted digital expression require copying the document or file to a permanent storage medium, such as a hard drive, floppy disk, or magnetic tape. These copies clearly violate the exclusive right to reproduce. Moreover, computers often copy complex programs or large digital files not only into RAM but also to a cache on the hard drive, again implicating the right to reproduce. Finally, because expression in RAM is destroyed when the computer is turned off or when RAM is filled with other programs or data, digital information is unlikely to be of much use if it exists only in RAM. The work will need to be fixed in a more "stable" medium to be valuable. As discussed below, however, the determination as to whether a work in RAM is fixed makes little difference to the overall determination of copyright infringement in the digital context because most digital transactions—including all those involving networked information—implicate the exclusive rights to display and perform copyrighted works publicly.

c. Statutory Exemptions and Licenses Applied to Digital Information

(1) First sale doctrine

None of the statutory exemptions or licenses are likely to ameliorate the extraordinary breadth of the reproduction right in the digital information context. Consider, for example, the first sale doctrine.[149] At

148. IITF Report, supra note 98, at 66 (citations omitted).

149. 17 U.S.C. § 109(a); *see also* supra notes 48-53 (discussing the first sale doctrine).

first glance, the first sale doctrine might seem applicable to at least some digital reproductions, by characterizing the transaction as a distribution. If a network user "uploads" a file to the network and then deletes her local copy, she might try to characterize her action as a "distribution" of the copy that she rightfully owns. The first sale doctrine would then permit her to distribute her copy of a copyrighted work without infringing the copyright holder's rights.

In the digital context, however, there is really no such thing as a distribution. Virtually all transfers of digital files result in a new copy being created, rather than the original copy being transferred.[150] Such a transaction could be analogized to sending a facsimile: the transmission creates a new copy at the receiving end while the sender retains the original. Even if the sender immediately destroys her copy, the transaction is still a "reproduction," rather than a "distribution," for copyright law purposes. As a result, the first sale doctrine does not apply and the transaction implicates the exclusive rights of the copyright holder.

Even if it were possible to conceive of a technological transaction that moved a digital file rather than copied it, for example, from one directory to another on the same hard drive, the first sale doctrine is unlikely to apply. The doctrine only insulates the activities of *owners* of *lawfully made* copies. Most commercial software today is distributed under a license; there is no transfer of ownership. The user has a license to operate the software under certain conditions, but no legal ownership interest. Even if courts find these licenses unenforceable, for example, because they do not constitute a valid contract under state law or because federal copyright law preempts them,[151] the first sale doctrine does not guarantee access to digital expression. For a copy to be "lawfully made," the user must have first obtained it with the permission of the copyright holder or under the protection of a statutory license or exemption. This may provide some protection for the source of the digital work in the unusual case where the first sale doctrine is applicable, but it provides no rights of access for one who does not already own a lawfully made copy. The first sale doctrine will therefore rarely apply because it is virtually impossible to have a digital distribution, as opposed to reproduction. Even if it does apply, however, it will not guarantee public access to the facts or ideas contained within digital expression.

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150. The one exception is in some recent operating and file management systems, such as recent versions of MS-DOS, if a file is moved from one location on a physical storage device to another location on that same storage device, the program will not actually copy the file to the new location. Instead, it merely alters the internal pointer that tells the program where the file is located. The insignificance of this exception, particularly the fact that it applies only to files that are moved (not copied) on the same hard drive or floppy disk, suggests the extraordinary scope of reproduction in digital technologies.

151. *See* infra notes 302-08 and accompanying text (discussing federal limits on contracts protecting intellectual property).

(2) "Essential step" and "archival purpose" exemptions

Section 117, which allows owners of a lawful copy of a computer program to make a single copy or adaptation of the copyrighted program without obtaining the copyright holder's permission,[152] does not provide relief from the technological extension of the reproduction right for two reasons. First, section 117 is limited to a "computer program," which the law defines as "a set of statements or instructions to be used directly or indirectly in a computer to bring about a certain result."[153] Under this definition, the exemption will not apply to digital works—documents, images, databases, and the like—that the computer does not act on to "bring about a certain result." Second, in the limited area of "computer programs" covered by the exemption—word processors, spreadsheets, operating systems, financial management software, and the like—the exemption will only apply if the copy is necessary for "archival purposes" or as an "essential step" in the use of the program.

As with the first sale doctrine, this exemption in no way protects access to copyrighted information. It provides important rights to use copyrighted software that one already owns, but no rights to obtain access to other software, or to the facts, ideas, concepts, processes, or systems contained within that software. Congress recognized that every digital work is copied when used, which prompted the rewriting of section 117 in 1980,[154] but the new provision does little to ameliorate the impact of that realization.

(3) Fair use

Fair use might reasonably appear to be the most likely tool for mitigating the technological extension of the exclusive right to reproduce. Because of other characteristics of digital information and the market that provides it, however, fair use as currently applied is likely to prove ineffective in that role. Under current law, to the extent that an unauthorized use substitutes for or otherwise supplants the original in the market, it is likely to be unfair.[155]

The broader the variety of markets that a court believes are reasonably likely to exist for a work or its parts, the greater the likelihood

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152. 17 U.S.C. § 117.

153. Id. § 101.

154. Pub. L. No. 96-517, 10(b), 94 Stat. 3028 (1980) (codified in 17 U.S.C. § 117 (1982)).

155. Campbell v. Acuff-Rose Music, 510 U.S. 569, 590-91 (1994); Harper & Row Publishers, Inc. v. Nation Enter., 471 U.S. 539, 568 (1985). According to the Senate Report, "With certain special exceptions . . . a use that supplants any part of the normal market for a copyrighted work would ordinarily be considered an infringement." Senate Report, supra note 76, at 65; *see also* supra notes 68-76 (discussing the fair use doctrine).

that any use covered by the five exclusive rights will have an impact on the market foreclosing the fair use exemption. The Second Circuit Court of Appeals demonstrated this recently in *American Geophysical Union v. Texaco.*[156] The court faced the issue of whether a Texaco scientist's unauthorized copying of eight articles from the *Journal of Catalysis* over four years constituted fair use.[157] The court did not focus on the impact of the copying on the market for subscriptions to the complete journal or on sales of back issues and back volumes. Instead, the court stressed the copying's likely impact on the publisher's ability to negotiate photocopying licenses directly with users, through document delivery services, and through the Copyright Clearance Center, a private licensing organization. By redefining the market to include licenses for portions of whole journal issues, the court negated Texaco's argument that such limited copying had no likely market impact:

> Whatever the situation may have been previously, before the development of a market for institutional users to obtain licenses to photocopy articles, it is now appropriate to consider the loss of licensing revenues in evaluating "the effect of the use upon the potential market for or value of" journal articles.[158]

Stressing the journal's lost licensing revenue, the appellate court upheld the district court's determination that the plaintiff had demonstrated "substantial harm" to the value of their copyrights because of the defendant's copying.[159]

In the case of digital information, there are often many more "ready markets and means to pay" for a wider variety of uses than there are for traditional printed works. Digital technologies are opening entirely new markets for copyrighted works. For example, newspaper and magazines, which previously had a limited, time-sensitive market primarily for subscriptions and newsstand or newsrack sales, now are available electronically.[160] As a result, they have value not only during the period of their cover date, but also as a research and marketing tool when collected in automated databases.

Moreover, those same technologies facilitate markets for smaller and more individualized portions of a work. On-line databases make many works available by the sentence. Multimedia works captured on CD-ROM

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156. 37 F.3d 881 (2d Cir. 1994).

157. The Journal of Catalysis is published monthly; each issue contains between 20 and 25 articles. American Geophysical Union v. Texaco, 802 F. Supp. 1, 5 (S.D.N.Y. 1992), *aff'd*, 37 F.3d 881 (2d Cir. 1994).

158. *American Geophysical Union*, 37 F.3d at 899.

159. Id.

160. Virtually all major U.S. newspapers and many news magazines and non-U.S. publications are available via Westlaw or Lexis/Nexis. Increasingly, major periodicals are available through other databases and network services. For example, the Chicago Tribune, New York Times, and San Jose Mercury News are available through America Online; the Atlanta Constitution, Dallas Morning News, Los Angeles Times, and Newsday are available on Prodigy.

often compile thousands of short video or sound clips, single images, or portions of written works. There is even a market today for specific hues of color that computers can digitize into the background of still and video images. Professor Paul Goldstein has likened the digital environment to "a warehouse filled with fragments of recorded sound, visual images, and printed material that electronically cruising subscribers can combine and recombine to their own tastes and purposes."[161]

In addition to providing more markets for smaller segments of a work, digital technologies facilitate more efficient, cost-effective payment schemes. Early efforts at licensing the right to photocopy copyrighted works ran afoul of the sheer cost of accounting for who was copying which works, and of collecting and forwarding payments accordingly.[162] Today, digital technologies make it possible at very little cost to record when a digital work is copied, downloaded, or printed, and by whom. They make it possible to collect and forward the appropriate payment to the correct copyright holder. These digital technologies thereby "substantially reduce the specter of transaction costs."[163] This is accomplished through the same technologies that make possible existing markets for single sentences of an article. In short, digital technologies dramatically expand both the market for copyrighted works and the feasible "means to pay" for the use of copyrighted works.[164] And, as the court wrote in *American Geophysical Union*, "it is not unsound to conclude that the right to seek payment for a particular use tends to become legally cognizable under the fourth fair use factor when the means for paying for such a use is made easier."[165]

Finally, the potential for future digital markets is unknown. Twenty years ago, there were only 50,000 computers in the entire world. Today, consumers buy more than twice that number every day.[166] New digital markets are evolving at a fantastic pace. Commercial service providers have swarmed to the new markets made possible by the Internet. Eager customers have not been far behind.

These changes are certain to alter the fair use calculus. When considering potential economic harm to a copyrighted work, courts have more markets to evaluate. Many of those markets provide smaller portions of the copyrighted work with line-by-line or word-by-word pricing, so the opportunity to claim that a particular use should be considered fair because there is no market for the specific use is becoming increasingly rare. Not only will there be more diverse, vibrant markets for smaller

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161. Goldstein, supra note 95, at 200.

162. *See* id. at 219-20 (discussing the "record-beeping nightmare" created by the Copyright Clearance Center's Transactional Reporting Service).

163. Id. at 224.

164. *See* IITF Report, supra note 98, at 82 ("[I]t may be that technological means of tracking transactions and licensing will lead to reduced application and scope of the fair use doctrine").

165. *American Geophysical Union*, 37 F.3d at 899 (citation omitted).

166. *See* NTIA Fact Sheet, supra note 7, at 2.

segments of copyrighted works, but digital technologies will also facilitate easy, efficient payment systems. Publishers will be able to download that article or chapter, or even a specified page or paragraph, and debit the appropriate payment from an electronic payment account. And courts will take a more expansive view of the markets "that the creators of original works would in general develop or license others to develop"[167] in a technological environment in which new and valuable markets are being created every day.

These characteristics of digital technologies greatly increase the likelihood of a court concluding that "if the challenged use 'should become widespread, it would adversely affect the *potential* market for the copyrighted work.'"[168] The determination of market harm has historically been the most significant of the four factors in section 107.[169] In addition, the statute directs courts to consider "the amount and substantiality of the portion used in relation to the copyrighted work as a whole," when evaluating a fair use defense to infringement.[170] This evaluation goes not only to the common sense fairness of the use, but also to the likelihood that the use will replace the original in the market and therefore cause economic harm. Most reproductions of digital works involve the entire work, even if the user actually views or hears only a small portion. Loading software into RAM creates a new copy, usually of the entire program. When a network user accesses a document or image, the entire document or image is usually downloaded and therefore copied. The user of digital expression is therefore caught at both ends of the fair use analytical spectrum.

The 1976 Act also requires courts to evaluate "the purpose and character of the use."[171] Many courts focus on whether the use was "transformative." Uses that merely duplicate the original work, rather than adding something to it or otherwise building on it, are less likely to be found fair. In *Campbell v. Acuff-Rose Music* the Supreme Court noted:

> The central purpose of this investigation is to see, in Justice Story's words, whether the new work merely "supersede[s] the

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167. Campbell v. Acuff-Rose Music, 510 U.S. 569, 592 (1994).

168. Harper & Row Publishers, Inc. v. Nation Enter., 471 U.S. 539, 568 (1985) (quoting Sony Corp. of Am. v. Universal City Studios, Inc., 464 U.S. 417, 451 (1984)).

169. 17 U.S.C. § 107. The Supreme Court's 1994 decision in *Campbell* is not to the contrary. Although the Court there noted that all four statutory factors "are to be explored, and the results weighed together, in light of the purposes of copyright," the Court considered all of the factors with an eye toward their impact on the market. *Campbell*, 510 U.S. at 590. In addition, the Court went out of its way to avoid overruling *Sony*, 464 U.S. 417, and *Harper & Row*, 471 U.S. 539, the Court's fair use cases that had clearly stated that the impact on the market "is undoubtedly the single most important element of fair use." *Harper & Row*, 471 U.S. at 566.

170. 17 U.S.C. § 107(3) (1994); *see Harper & Row*, 471 U.S. at 565 ("[T]he fact that a substantial portion of the infringing work was copied verbatim is evidence of the qualitative value of the copied material, both to the originator and to the plagiarist who seeks profit from marketing someone else's copyrighted expression.").

171. 17 U.S.C. § 107(1) (1994).

> objects" of the original creation, or instead adds something new, with a further purpose or different character, altering the first with new expression, meaning, or message; it asks, in other words, whether and to what extent the new work is "transformative." Although such transformative use is not altogether necessary for a finding of fair use, the goal of copyright, to promote science and the arts, is generally furthered by the creation of transformative works.[172]

Whether a use is transformative affects the extent to which the use results in new expression, facts, or ideas and therefore serves the important public purpose that undergirds copyright law.[173] This inquiry, like the issue of how much of the work was used, also sheds light on the likely market impact of the use. When the use is transformative, the Court has noted, "market substitution is at least less certain, and market harm may not be so readily inferred."[174] The reproduction required by the use of computers involves the entire copyrighted work and creates a verbatim copy, rather than a new, transformed work. Such a use is unlikely to be found fair.

Finally, fair use is usually available only for certain uses, including "criticism, comment, news reporting, teaching (including multiple copies for classroom use), scholarship, or research."[175] Uses that do not fall within one of those categories or serve some similarly important public purpose are unlikely to be fair. Many uses of digital works will clearly not serve some special public purpose, such as those enumerated in the statute. Given the additional facts that usually the entire work is copied verbatim, and that the copying is almost certain to affect a present or future market for the work or its parts, fair use is unlikely to insulate the reproduction that is essential to using a copyrighted digital work.

2. Public Performance and Public Display

a. The New Scope of Public Performance and Display

The second legally significant technological feature of digital information is that the user must display or perform it to see it on a

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172. *Campbell*, 510 U.S. at 578 (citations omitted); *see also* Marcus v. Rowley, 695 F.2d 1171, 1175 (9th Cir. 1983) ("[A] finding that the alleged infringers copied the material to use it for the same intrinsic purpose for which the copyright owner intended it is strong indicia of no fair use.").

173. To the extent that the secondary use involves merely an untransformed duplication, the value generated by the secondary use is little or nothing more than the value that inheres in the original. Rather than making some contribution of new intellectual value and thereby fostering the advancement of the arts and sciences, an untransformed copy is likely to be used simply for the same intrinsic purpose as the original, thereby providing limited justification for a finding of fair use.

American Geophysical Union v. Texaco, 37 F.3d 881, 891 (2d Cir. 1994).

174. *Campbell*, 510 U.S. at 591.

175. 17 U.S.C. § 107.

monitor or hear it through speakers attached to the computer. To the extent the display or performance is "public," the use violates the exclusive rights of the copyright holder.

The 1976 Act defines "display" as "to show a copy of it, either directly or by means of a film, slide, television image, or any other device or process."[176] The Act defines "perform" as "to recite, render, dance, play, or act it, either directly or by means of any device or process or, in the case of a motion picture or other audiovisual work, to show its images in any sequence or to make the sounds accompanying it audible."[177] Taken together, the exclusive rights of performance and public display cover all the categories of works into which digital information might fall, except "sound recordings."[178]

Given the breadth of these exclusive rights, there is no doubt that when a user portrays a digital work on a computer screen or projects it through attached speakers, she displays or performs it within the meaning of the copyright law. The only remaining issue is whether the display or performance is "public." The 1976 Act includes in its definition of public display or performance:

> [T]o transmit or otherwise communicate a performance or display of the work . . . to the public, by means of any device or process, whether the members of the public capable of receiving the performance or display receive it in the same place or in separate places and at the same time or at different times.[179]

This language and its legislative history suggest that no one need actually

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176. Id. § 101. According to the House Report, "'display' would include the projection of an image . . . by electronic or other means, and the showing of an image on a cathode ray tube, or similar viewing apparatus connected with any sort of information storage and retrieval system." House Report, supra note 60, at 64.

177. 17 U.S.C. § 101. According to the House Report,

> [a] performance may be accomplished "either directly or by means of any device or process," including all kinds of equipment for reproducing or amplifying sounds or visual images, any sort of transmitting apparatus, any type of electronic retrieval system, and any other techniques and systems not yet in use or even invented.

House Report, supra note 60, at 63.

178. The exclusive right to display a copyrighted work publicly applies to "literary, musical, dramatic, and choreographic works, pantomimes, and pictorial, graphic, or sculptural works, including the individual images of a motion picture or other audiovisual work." 17 U.S.C. § 106(5) (1994). The exclusive right to perform a copyrighted work publicly applies to "literary, musical, dramatic, and choreographic works, pantomimes, and motion pictures and other audiovisual works." 17 U.S.C. § 106(4) (1994).

"Sound recordings" are works that "result from the fixation of a series of musical, spoken, or other sounds, but not including the sounds accompanying a motion picture of other audio visual work." Id. § 101. They were excluded from the exclusive right to public performance primarily because of the political opposition of broadcasters. In the words of former Register of Copyright, Barbara Ringer: "The opposition from the American broadcasting industry is too strong." Barbara Ringer, United States of America, *in* S. Stewart, International Copyright and Neighbouring Rights 530 (1983). *See generally* Goldstein, supra note 35, § 5.7.

179. 17 U.S.C. § 101.

receive the performance or display; it must merely be *capable* of being received by the public.[180]

Under this broad definition, digital information that a user downloads from a network or database and then displays or performs on a computer is "public" because it is capable of being received by the public, albeit the receiving members of the public are located in separate places and may retrieve the copyrighted work at different times. The party liable for the violation of the exclusive rights to display and perform the work publicly may not include the end user who accessed the performance or display on the computer. Although the end user can certainly display or perform the work, she is unlikely to do so "publicly," within the meaning of the 1976 Act, unless she does so in a place open to the public or in the presence of a substantial number of people outside of her family.[181]

The provider of the copyrighted work, however, is likely to be liable either for public performance or display of the work or for "authorizing" the public performance or display. Recall that the exclusive rights empower the copyright holder not only to do anything covered by those rights, but also to authorize someone else to engage in such activities. In *Columbia Pictures Industries v. Aveco*,[182] for example, the Third Circuit Court of Appeals considered the liability of a defendant who rented small rooms, equipped with televisions and video players, to the public for the purpose of watching rented video cassettes. The court found that, even though the temporary occupants of these rooms operated the video players on their own, the defendant's operations "constituted an authorization of public performances" of the plaintiff's copyrighted works.[183] This has

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180. House Report, supra note 60, at 64-65 ("[A] performance made available by transmission to the public at large is 'public' even though the recipients are not gathered in a single place, and even if there is no direct proof that any of the potential recipients was operating his receiving apparatus at the time of the transmission"); *see also* On Command Video Corp. v. Columbia Pictures Indus., 777 F. Supp. 787, 790 (N.D. Cal. 1991) (defining public reception to include hotel guests who have potential to receive transmission to their own room).

181. This might be contrasted with violation of the exclusive right to reproduce, for which the liable parties will certainly include both the end user and any intermediaries who "authorized" the reproduction or provided unauthorized access, which, as noted, in the context of digital technologies inherently requires reproduction. Liability for violations of any of the exclusive rights may be further spread through the doctrines of respondeat superior, vicarious infringement, and contributory infringement. *See* supra notes 32-35 and accompanying text (explaining these doctrines). In *Sega Enter. v. MAPHIA*, for example, the court found the defendant electronic bulletin board operator directly liable for violating the plaintiff's reproduction right based on unauthorized copies of the plaintiff's computer game software found on defendant's bulletin board. 857 F. Supp. 679, 689 (N.D. Cal. 1994). The court went on to hold, however, that "[e]ven if defendants do not know exactly when games will be uploaded to or downloaded from the MAPHIA bulletin board, their role in the copying, including provision of facilities, direction, knowledge and encouragement, amounts to contributory infringement." Id. at 686-87.

182. 800 F.2d 59 (3d Cir. 1986).

183. Id. at 63; *see also* Columbia Pictures Indus. v. Redd Horne, 749 F.2d 154, 160 (3d Cir. 1984) (analogizing a showcase operation to a public performance for purposes of the first sale

been the view of courts in other analogous areas, such as the performance of electronic video games[184] and of video tapes in hotel rooms.[185]

Only one court has addressed the issue of whether projecting a digital work on a computer screen constituted a public display or performance. The court in *Playboy Enterprises v. Frena* found that the defendant's operation of a computer bulletin board service, which provided users with unauthorized copies of digitized *Playboy* photographs, violated *Playboy's* exclusive right to display those works publicly.[186] Noting that "[t]he concept of display is broad," the court concluded that "[t]he display right precludes unauthorized transmission of the display from one place to another, for example, by a computer system."[187] The court noted that the bulletin board's availability to only subscribers did not decrease its public nature.[188] Courts traditionally have held that a display or performance was public, even though the audience was limited to members of a club or association.[189]

The inherently public nature of networked expression has led two commentators to refer to the public display right as "the broadest of all the exclusive rights" in the context of the information superhighway.[190] Unless the user owns the copyright or possesses a license to display or perform the work publicly, such use of the work violates the exclusive rights of the copyright holder. The significance of this conclusion derives from the fact that, in the digital context, displaying or performing a work via computer is the only way to access its expression and the facts or ideas it may contain. While the user may print some works or copy them onto disk without displaying or performing them, these alternatives offer no relief from the monopoly conveyed in the digital environment by the rights to perform and display publicly. Such disk copies are of no additional value, because the user cannot access the information they contain without displaying or performing it. Both printouts and disk copies still violate the right to reproduce, as may the version of the work that exists in RAM. In addition, a user can perceive multimedia works only if she performs or displays it. A printout of the contents of a compact disc containing film clips would consist solely of unintelligible figures, occupying thousands of

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doctrine).

184. *See* Red Baron-Franklin Park v. Taito Corp., 883 F.2d 275, 278 (4th Cir. 1989).

185. *See On Command Video Corp.*, 777 F. Supp. at 789.

186. 839 F. Supp. 1552, 1557 (M.D. Fla 1993).

187. Id. at 1556; *see also* IITF Report, supra note 98, at 72 ("The right to display a work publicly is extremely significant in the context of the NII. . . . [M]any NII uses would appear to fall within the law's current comprehension of 'public display.'").

188. *Playboy Enter.*, 839 F. Supp. at 1557.

189. Thomas v. Pansy Ellen Prods., 672 F. Supp. 237, 240 (W.D. N.C. 1987); Ackee Music v. Williams, 650 F. Supp. 653, 656 (D. Kan. 1986).

190. *See* McCoy & Boddie, supra note 52, at 189 (stating that "a public display occurs every time a user browses a copyrighted work on the superhighway. Consequently, an owner's right to display may be the broadest of all the exclusive rights in the context of the superhighway, because a majority of uses constitute a public display.").

pages.

It makes little difference—other than to specific litigants—whether the provider of digital expression, the end user, or both are liable for the infringing conduct. Fear of that liability will decrease access to digital information either directly, by deterring end users from accessing digital works, or indirectly, by deterring service providers from offering access to those works. Decreased access, particularly to facts and ideas, is contrary to the purpose of copyright law. Moreover, as argued below, liability should not be imposed—no matter on whom—for activities that are within the constitutional purpose of copyright law.

b. Statutory Exemptions and Licenses

None of the statutory licenses or other exemptions provided by the 1976 Act are likely to mitigate the breadth of the exclusive rights to publicly perform and display copyrighted works in the digital context. Section 109, which exempts the public display of a lawfully made copy of a copyrighted work by its rightful owner,[191] applies only to displays made to viewers "present at the place where the copy is located."[192] It is of little use for material transmitted by network from a remote location. Section 109 also protects only the lawful owner of a copyrighted work, not licensees or mere possessors. Therefore, the exemption may be inapplicable to most commercial computer software, which copyright holders license, not sell.[193] Moreover, section 109 offers no protection if the copy of the work at issue was not lawfully made. As a result, the exemption will not apply to downloaded images or documents obtained without the copyright holder's permission or under some other statutory authorization. Section 109 is important to ensure public access to traditional works, but it is not likely to prove useful to guarantee public access to digital works and the facts and ideas they contain.

Section 110, which exempts from the public performance and display rights the "communications of a transmission embodying a performance or display of a work,"[194] might appear to insulate from liability the public display or performance of copyrighted works transmitted from a network or database. The section, however, deals only with public displays or performances that might be thought of as constituting incidental retransmissions of copyrighted works. The section comes into play only when a user receives an initial transmission, intended to reach the public at large, and then publicly displays or performs the work on "a single

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191. 17 U.S.C. § 109(c).

192. Id.

193. A recent opinion by the U.S. Court of Appeals for the Seventh Circuit has questioned the effectiveness of using shrink-wrap terms to convert a sale into a license, but the court explicitly avoided the application of its decision to copyright law. ProCD, Inc. v. Zeidenberg, 86 F.3d 1447, 1455 (7th Cir. 1996).

194. 17 U.S.C. § 110(5).

receiving apparatus of a kind commonly used in private homes."[195] The section's legislative history makes this limited purpose clear: "to exempt from copyright liability anyone who merely turns on, in a public place, an ordinary radio or television receiving apparatus of a kind commonly sold to members of the public for private use."[196]

The rationale for the provision is that the person who makes the initial transmission has already compensated the copyright owner. The copyright owner should therefore not have rights against someone who views or hears the display or performance in such a way that members of the public may view or hear it as well. The section recognizes that the person who views or hears a display or performance in public is really not displaying or performing the copyrighted work at all. This is a very different case from a person operating a computer who retrieves a digital file from a network or database and then displays or performs it. In that case, the recipient does not compensate the copyright owner for the initial "transmission" and, far from being a passive receiver, is an active user of the copyrighted work.

Fair use is unlikely to weaken the stranglehold of the rights of public display and performance over copyrighted works in a digital environment, for the same reasons identified with regard to the reproduction right. The display or performance of a copyrighted work often involves the entire work, which is duplicated verbatim.[197] Moreover, in a digital environment which furnishes a wide variety of markets for many different uses of copyrighted works and their parts and which facilitates efficient licensing, such displays and performances are unlikely to be insulated by fair use.

The one court to consider the issue found that the defendant's operation of a computer bulletin board that provided digitized photographs—including unauthorized pictures from *Playboy*—did not constitute fair use.[198] Although that case involved a commercial service

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195. Id.

196. House Report, supra note 60, at 86.

197. Although the Court in *Sony* applied fair use to protect the recording of entire television programs for later viewing, that case is readily distinguished from the public performance or display of copyrighted works in a digital environment. *Sony* involved the use of works that were intended by their owners to be performed to the precise audience that was recording them for later viewing. The Court noted that the television broadcasters had already compensated copyright owners for this use of their works; presumably, it makes little difference whether the intended audience views the programs when broadcast or at a later time:

> [W]hen one considers the nature of a televised copyrighted audiovisual work, and that timeshifting merely enables a viewer to see such a work which he had been invited to witness in its entirety free of charge, the fact that the entire work is reproduced, does not have its ordinary effect of militating against a finding of fair use.

Sony Corp. of Am. v. Universal City Studios, Inc., 464 U.S. 417, 449-50 (1984) (citations omitted).

198. Playboy Enters. v. Frena, 839 F. Supp. 1552, 1558 (M.D. Fla. 1993).

provider, as opposed to an individual computer user, the court's decision focused on the potential market impact of the digitized photographs. "Obviously," the court wrote, "if this type of conduct became widespread, it would adversely affect the potential market for the copyrighted work. Such conduct would deny [plaintiff Playboy Enterprises] considerable revenue to which it is entitled for the service it provides."[199]

3. Summary

A user may only access digital expression through a reproduction in RAM or on a hard drive, floppy disk, or magnetic tape. This is an essential characteristic of digital technologies. It is impossible to read, view, listen to, print, upload, download, transfer, or otherwise access digital expression without making at least one copy of it. That copy violates the copyright holder's exclusive right to reproduce.

Similarly, networked digital expression cannot be viewed on a computer monitor or heard over computer speakers without violating the exclusive right to display or perform the work publicly. Although the location of the computer may not be open to the public, because other people can display or perform the expression obtained from a network, no matter where they are located or when they receive it, the display or performance meets the statutory definition of "public." These outcomes are a necessary result of the technologies involved.

Other features of these same technologies diminish the likelihood that any of the statutory exemptions or licenses, as currently applied, will guarantee public access to digital information. The first sale doctrine in section 109 will not apply because distributions of digital information virtually always result in a new copy being made. The "essential step" and "archival purpose" exemptions of section 117 apply only to computer software, not other forms of digital information. Section 109 exempts only public displays made to viewers present in the same place as the work being displayed. It is therefore inapplicable to information downloaded from a network or database. Moreover, sections 109 and 117 are arguably limited to the owners of lawfully made copies. They are therefore unlikely to guarantee public access to a copy of digital information that one does not already lawfully own.

Fair use, the broadest of possible exceptions to the exclusive rights, is unlikely to permit many uses of digital information for four reasons. First, digital technologies facilitate many varied markets for even tiny portions of copyrighted works, low transaction costs, and vast potential for new markets. As a result, almost any use of a digital work is likely, should it become widespread, to affect adversely the potential market for the copyrighted work. Second, the necessary reproduction and public performance or display of a digital work usually involves the entire work. This weighs against a finding of fair use when considering both "the

199. Id. at 1559.

amount and substantiality of the portion used" and the likelihood of market impact. Third, the reproduction and public performance and display are unlikely to be "transformative." Finally, fair use is primarily available for certain socially valuable uses, such as criticism, comments, news reporting, teaching, scholarship, and research.

Because none of the statutory exemptions apply, the owners of copyrights in digital works have the power to prevent access to their digital expression. This is a dramatic extension of the copyright holder's rights in nondigital contexts, where users may read, see, or hear expression in the market without the copyright holder's permission. Of even greater significance is the fact that the copyright holder may deny the public access to the facts or ideas contained within that expression, not just the expression itself, because it is impossible to obtain those facts and ideas in digital format without copying and publicly displaying or performing the expression as well.

Consider, for example, a newspaper. If published on paper, any person is free to read a copy in a library, over someone's shoulder in the subway, or in any other place where the printed paper is located. Moreover, the price for the printed copy of the newspaper is deliberately kept low to discourage secondary users—people who read other people's copy of the paper. If that same paper is only published electronically, the reader can only get access to the paper on the Internet or through some other network by copying the paper into RAM or onto a hard drive or floppy disk. Unless authorized by the copyright holder, this violates the copyright holder's exclusive right to reproduce. To read the paper, the user must display it on her screen, violating the right to display the work publicly, or print out a copy, violating the right to reproduce the work again. Even if the paper is distributed on disk, loading the expression on disk into RAM or otherwise copying it will violate the exclusive right to reproduce. No matter how important the news of the day, the user cannot get access to it without necessarily reproducing and publicly displaying the copyrighted expression. Moreover, given the publisher's new level of control over her readership, the pressure to keep the price of the newspaper low evaporates.

Or consider a body of wholly unprotectable material, for example, a list of facts such as airplane departure times. If published in printed format, the user would be free to read and copy the factual data. If there is original artwork on the listing, copyright law would protect it and therefore it could not be copied, but the factual information is fair game. If the copyright holder offers that same material as a network database or by disk, but the user can only obtain access through copyrighted access software or by first viewing the original artwork, the owner of the copyright in the software or the artwork controls access to the noncopyrightable facts. Because the user cannot obtain access to the facts without reproducing and perhaps even publicly displaying the copyrighted expression, the facts are off-limits.

Because of the technological features of the digital environment, the copyright holder can restrict access to digital information or exact a price for allowing a user to read, see, or hear it. The danger grows more serious as copyright holders make more and more information available only in digital format. In the future, many works will be available only in digital format. Professor Paul Goldstein has written of a "celestial jukebox."[200] Rather than owning individual compact discs, cassette tapes, video cassettes, or even computer software, future generations may simply dial up their desired programming from a digital master database. Satellites or optical fiber would deliver the programming. While that day may be far off, the dramatic growth of the Internet and other computer networks—in terms of users, service providers, and data—demonstrates an increasing migration of information services into the digital arena. Moreover, new powerful technologies, such as multimedia CD-ROM, exist only in digital format. While the technological transformation of copyright law is already putting some expression, facts, and ideas beyond the public's reach, the threat is expanding exponentially. As that happens, the constitutional purpose of copyright law is frustrated and the copyright holder's exclusive rights are converted into a sweeping monopoly.

C. IITF Working Group Proposal

In response to this technological rewriting of copyright law, one might anticipate a concerted effort to return copyright law to its constitutional boundaries. The Clinton Administration, however, has indicated its desire to extend and codify, rather than prevent, this transformation.

1. Information Infrastructure Task Force

The Working Group on Intellectual Property Rights represents the Administration on matters concerning the application of copyright law to digital expression. The Working Group is part of the Information Infrastructure Task Force, an intragovernmental[201] task force created by the Clinton Administration to "develop comprehensive technology, telecommunications, and information policies and promote applications that best meet the needs of both the agencies and the country."[202] The Task Force is to articulate and implement the Administration's vision for the "National Information Infrastructure," a network of networks using interconnected, interoperable telecommunications and computer networks

200. Goldstein, supra note 95, at 223-24.

201. The Task Force includes representatives from the Departments of Agriculture, Commerce, Education, Energy, Housing and Urban Development, Interior, Justice, State, and Veterans Affairs, the Central Intelligence Agency, Environmental Protection Agency, Federal Communications Commission, Federal Trade Commission, General Services Administration, National Economic Council, National Science Foundation, White House Office of Science and Technology Policy, and the Vice President's office. Fred H. Cate, The National Information Infrastructure: Policymakers and Policymaking, 6 Stan. L. & Pol'y Rev. 43, 46-48 (1995).

202. Agenda for Action, supra note 112, at 5.

to link computer systems and other technologies, and to provide a variety of transmission and information services.[203]

The Administration charged the Working Group, chaired by Bruce A. Lehman, Assistant Secretary of Commerce and Commissioner of Patents and Trademarks, to "[e]xamine the adequacy of copyright laws" and make recommendations for the revision of copyright law where necessary.[204] After a series of meetings and reviewing seventy written statements, the Working Group released a preliminary draft of its report, the so-called "Green Paper," in July 1994.[205] Following a subsequent hearing and further meetings, the Working Group released the final version of its report, *Intellectual Property and the National Information Infrastructure*, in September 1995.[206] The report serves as the latest word from the Administration on the application of the copyright law to digital information. It includes as an appendix proposed legislation to amend the Copyright Act. The legislation was introduced by Senators Hatch and Leahy in the Senate on September 28, 1995,[207] and by Representatives Moorhead, Schroeder, and Coble in the House of Representatives on the following day.[208]

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203. The National Information Infrastructure; Frequently Asked Questions (available through Internet from the NTIA NII bulletin board, iitf.doc.gov) (describing the NII as consisting of "(1) thousands of interconnected, interoperable telecommunications networks, (2) computer systems, televisions, fax machines, telephones, and other 'information appliances,' (3) software, information services, and information databases (*e.g.*, 'digital libraries'), and (4) trained people who can build, maintain, and operate these systems.").

The Task Force is divided into three committees—the Telecommunications Policy Committee, Information Policy Committee, and Applications and Technology Committee—which, in turn, are further divided into working groups and subworking groups. The Telecommunications Policy Committee is divided into four working groups: Universal Service, Reliability and Vulnerability, Legislative Drafting, and International Telecommunications. The Information Policy Committee has three working groups: Intellectual Property Rights, Privacy, and Government Information. The Applications and Technology Committee is divided into three working groups: Government Information Technology Services, Technology Policy, and Health Information and Applications.

In addition, an NII Security Issues Forum coordinates so-called "security issues" concerning "confidentiality, integrity, and availability of information and of the systems carrying the information," and a 37-member Advisory Council on the National Information Infrastructure, created by Executive Order No. 12864, advises the Task Force from the perspective of information "stakeholders," including industry, labor, academia, public interest groups, and state and local governments. Id. *See generally* Cate, supra note 201, at 46-48 (outlining the Clinton Administration's goals for information policymaking).

204. Agenda for Action, supra note 112, at 5.

205. Information Infrastructure Task Force, Intellectual Property and the National Information Infrastructure: A Preliminary Draft of the Report of the Working Group on Intellectual Property Rights (July 1994) [hereinafter IITF Draft Report].

206. IITF Report, supra note 98.

207. S. 1284, NII Copyright Protection Act of 1995, 104th Cong., 1st Sess. (1995).

208. H.R. 2441, NII Copyright Protection Act of 1995, 104th Cong., 1st Sess. (1995).

2. *IITF Working Group Report*

The Working Group's report includes a lengthy review of current copyright law and its likely impact on digital expression. The report notes the sweeping role of the reproduction,[209] public performance,[210] and public display[211] rights in the digital environment. It nonetheless concludes that "with no more than minor clarification and limited amendment, the Copyright Act will provide the necessary balance of protection of rights—and limitations on those rights—to promote the progress of science and the useful arts."[212] The proposed amendments do not mitigate the technological transformation of copyright law. On the contrary, the Working Group report recommends codifying the extension of the copyright holder's exclusive rights and the commensurate reduction in the ability of users to access expression, facts, and ideas in the digital environment.

The Working Group would achieve this by redefining the exclusive right to distribute to include the exclusive right to "transmit" a work: "to transmit a reproduction is to distribute it by any device or process whereby a copy or phonorecord of the work is fixed beyond the place from which it was sent."[213] Under this definition, the copyright holder would have the exclusive right not only to distribute copies of her work, but also to communicate that work "by any device or process." As a result, it would make no difference whether a work in RAM was "fixed" and therefore fit within the definition of a "reproduction." No one could transmit or authorize transmission of the copyrighted work—regardless of whether that transmission involved a reproduction or embodied a public performance or display—without the copyright holder's permission. In the digital context, this would altogether prohibit unauthorized access to networked expression and the facts or ideas expressed.

The Working Group also recommends that Congress amend the current prohibitions on importing copyrighted works into the United States without the copyright holder's permission to include importation by transmission. If a copyright holder has not authorized the distribution of a work in the U.S., any U.S. user who downloads the copyrighted work from a computer outside the United States would violate not only the exclusive rights of reproduction and public display or performance, but also the

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209. IITF Report, supra note 98, at 64-66 ("The fundamental right to reproduce copyrighted works in copies and phonorecords will be implicated in innumerable NII transactions. Indeed, because of the nature of computer-to-computer communications, it will be implicated in most NII transactions.") (footnote omitted).

210. Id. at 70-72.

211. Id. at 72 ("The right to display a work publicly is extremely significant in the context of the NII").

212. Id. at 17.

213. Id. at 217 n.543.

right to control importation. This recommendation is troubling because the Internet and other networks provide seamless connections between computers in different countries. It is usually impossible to tell by looking at a copyrighted work whether the copyright owner has licensed it for U.S. distribution. This extension of the importation right, as the Working Group recognized, will be difficult for users to respect and for the government to enforce.[214]

In addition to codifying the dramatic extension in copyright holders' rights caused by features of digital technology,[215] the Working Group also recommends legal changes to facilitate "technological processes and systems used to prevent or restrict unauthorized uses of copyrighted works."[216] Specifically, the report urges amendment of the 1976 Act to prohibit "devices, products, components and services that defeat technological methods of preventing unauthorized use . . . ."[217] Under the proposed amendment, the law would include a new section 1201:

> No person shall import, manufacture or distribute any device, product, or component incorporated into a device or product, or offer or perform any service, the primary purpose or effect of which is to avoid, bypass, remove, deactivate, or otherwise circumvent, without authority of the copyright owner or the law, any process, treatment, mechanism or system which prevents or inhibits the exercise of any of the exclusive rights under Section 106.[218]

Under related amendments, anyone who violated the new section 1201 would be an infringer and would be subject to a wide range of civil and criminal penalties, including impoundment and destruction of infringing devices, statutory damages, jail terms, and fines.[219] The report is silent about the use of such technologies to facilitate user access to

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214. IITF Report, supra note 98, at 221 ("Although we recognize that the U.S. Customs Service cannot, for all practical purposes, enforce a prohibition on importation by transmission, given the global dimensions of the information infrastructure of the future, it is important that copyright owners have the other remedies for infringements of this type available to them.").

215. The Working Group also recommends redefining "publication" to include the concept of distribution by transmission. Id. at 219. The 1976 Act eliminated publication as the starting point for federal copyright protection, but the fact of publication does still carry some significance for copyright holders. For example, only published works are subject to mandatory deposit in the Library of Congress, and the duration of protection for works made for hire may be determined by the date of publication. Id. at 219-20. The Working Group therefore recommends amending the definition of "publication" to read: "'Publication' is the distribution of copies or phonorecords of a work to the public by sale or other transfer of ownership, or by rental, lease, lending, or by transmission." Id. at 124, app. 1, § 2(b)(1) (amending 17 U.S.C. § 101). This change would have little substantive impact on the rights of copyright holders or of users.

216. Id. at 230.

217. Id.

218. Id., app. 1, § 4 (adding 17 U.S.C. § 1201).

219. IITF Report, supra note 98, at 230, app. 1, § 4 (adding 17 U.S.C. §§ 1203-04).

digital expression that copyright law does not protect, to protected expression where fair use or some other statutory provision authorizes access, or to facts and ideas. Moreover, the proposed amendment contains no mention of the constitutional purpose of promoting such access. The report states the Working Group's sole interest clearly: "The proposed prohibition is intended to assist copyright owners in the protection of their works."[220]

The report would extend the criminal penalties provided by the Copyright Act by abandoning the current law's requirement that infringement subject to criminal penalties be for commercial advantage or private financial gain.[221] Under the proposed amendment, set forth in S. 1122,[222] it would be a criminal offense to "wilfully infringe a copyright by reproducing or distributing copies with a retail value of $5,000 or more."[223]

The report calls for new sections of the copyright law to prohibit the fraudulent creation, amendment, or removal of "copyright management information," which the report identifies as information associated with a copyrighted work, including "the name and other identifying information of the author of a work, the name and other identifying information of the copyright owner, the terms and conditions for uses of the work, and such other information as the Register of Copyrights may prescribe by regulation . . . ."[224]

Finally, the Working Group's report recommends creating a public performance right in sound recordings.[225] As discussed previously, sound recordings are the only "performable" work excluded from the public performance right. As the report indicates, this "historical anomaly . . . does not have a strong policy justification—and certainly not a legal one."[226] Although the performance right for sound recordings bears little direct relevance to the National Information Infrastructure (NII) context, the report notes both the importance of the public performance right in the context of digital networks and the peculiar threat that digital transmissions pose to copyright owners of sound recordings.[227]

The Working Group's draft report was widely criticized for its preoccupation with protecting and enhancing the rights of copyright holders.[228] The final version is somewhat more moderate in tone, though

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220. Id. at 231.

221. Id. at 228.

222. S. 1122, Criminal Copyright Improvement Act of 1995, 104th Cong., 1st Sess. (1995).

223. IITF Report, supra note 98, at 229. This amendment would respond to concerns raised following United States v. LaMacchia, 871 F. Supp. 535 (D. Mass. 1994), in which the court dismissed criminal wire fraud charges against a university student who operated Internet sites for the receipt and distribution of unauthorized copies of copyrighted software, because the student acted without any commercial or financial purpose.

224. IITF Report, supra note 98, at 235.

225. Id. at 221-25.

226. Id. at 222.

227. Id. at 221-22.

228. *See, e.g.*, Pamela Samuelson, Copyright and Digital Libraries, Communications of the

not in substance.[229] The only attention given the interests of users, even in the final version of the report, are two provisions responding to the needs of politically influential constituencies. The first would extend section 108, which protects certain copying by libraries, to include limited digital reproduction.[230] The second provision would create a new section permitting non-profit organizations to manufacture and distribute unauthorized editions of previously published works under limited conditions for use by the visually impaired.[231] These two provisions responded to the vocal opposition, particularly of the library community, to the draft report. But with only these two exceptions, the recommendations of the Working Group's report and proposed legislation either codify the existing technological expansion of copyright holders' rights or further extend those rights, thereby failing to reverse the technological expansion that is wrenching copyright law from its constitutional moorings.

III. RESTORING COPYRIGHT'S CONSTITUTIONAL PURPOSE

"[I]t should not be forgotten that the Framers intended copyright itself to be the engine of free expression. By establishing a marketplace right to the use of one's expression, copyright supplies the economic incentive to create and disseminate ideas."[232] As a constitutional corollary to that purpose, copyright law protects expression only. "The most

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ACM, Apr. 1995, at 15, 20 ("No wonder, then, that publishers have hailed the Green Paper for its vision, depth, and insight. After so many years of living in fear that digital networks would put them out of business, print publishers and other well-established copyright industries have found a new Messiah."); Litman, supra note 96, at 31-32 n.19; Pamela Samuelson, The NII Intellectual Property Report, Communications of the ACM, Dec. 1994, at 21 [hereinafter Samuelson, The NII Intellectual Property Report]. Litman writes:

> [T]he Draft Report's recommendations would enhance the exclusive rights in the copyright bundle so far as to give the copyright owner the exclusive right to control reading, viewing or listening to any work in digitized form. The Draft Report comes down firmly on the side of increased rights for copyright owners and it endorses the goal of enhanced copyright protection without acknowledging any countervailing concerns. . . . It gives voice to only one side of complicated policy debates. . . . The Draft Report . . . takes the side of copyright owner interests in every dispute. Indeed, it reads as if it were Santa Claus' response to the wish lists presented by current stakeholders.

Litman, supra note 96, at 31-32 & n.19.

229. For example, the Working Group in the draft report recommended amending Section 109(a) to explicitly exclude transmissions of copyrighted works from the first sale doctrine: "This subsection does not apply to the sale or other disposal of the possession of that copy or phonorecord by transmission." IITF Draft Report, supra note 205, at 125. Under that language, the first sale doctrine would not have applied to any copy of a digital work obtained by transmission. The final report abandoned this controversial recommendation, which the Working Group believed merely restated existing law. IITF Report, supra note 98, at 92.

230. IITF Report, supra note 98, at 225-27.

231. Id. at 227-28.

232. Harper & Row Publishers, Inc., v. Nation Enter., 471 U.S. 539, 558 (1985).

fundamental axiom of copyright law is that '[n]o author may copyright his ideas or the facts he narrates.' . . . [C]opyright assures authors the right to their original expression, but encourages others to build freely upon the ideas and information conveyed by a work."[233] Guaranteeing that the copyright law provides an incentive to create and disseminate, while extending protection only to original expression, no matter what the technological context, is the constitutional duty of courts, the legislature, and the executive. That guarantee is also essential to promoting the marketplace of ideas and to assuring the public's access to those ideas, that both the Copyright Clause and the First Amendment contemplate. There are five means by which Congress and the courts might more effectively tailor copyright law to adhere to its constitutional purpose and limits in the digital context.

A. Invalidate Copyright Law as Unconstitutional as Applied

Given the constitutional nature of copyright law's purpose, courts might invalidate as unconstitutional applications of copyright law that violate that purpose. This would not necessarily require courts to engage in the murky inquiry of whether the particular application of an exclusive right provides an "economic incentive to create and disseminate ideas."[234] Rather, courts could judge any specific application of copyright law against the "flip side" of that purpose, namely the constitutional exclusion of facts and ideas from copyright protection.

Presented with a case in which the enforcement of an exclusive right would deny the defendant access to the facts or ideas a work contained, the court would have no alternative but to refuse to enforce the right because it is unconstitutional as applied. Consider, for example, a copyright holder who brought suit against a user who read a copyrighted document downloaded from the Internet that was only available in digital format. The suit would correctly allege violation of the exclusive rights to reproduce (because the user created a copy of the expression on her computer) and to display publicly (because the user displayed the expression on her computer screen and it is capable of being displayed on other users' screens at the same or different times). The court, however, would refuse to enforce those rights because to do so would allow the copyright holder an effective monopoly over the facts or ideas contained in the work. The copyright holder would prevail if the work was available to the public in another medium (for example, in print) that did not require the user to reproduce and display the work to read it. The copyright holder could also successfully enforce her rights against the user if the user made further reproductions, or engaged in other acts that infringed the copyright holder's exclusive rights that were not necessary to access the

233. Feist Publications Inc. v. Rural Tel. Serv. Co., 499 U.S. 340, 344-45, 349 (1991) (quoting *Harper & Row*, 471 U.S. at 556).

234. *Harper & Row*, 471 U.S. at 558.

facts or ideas. But courts would not permit copyright holders to use the exclusive rights of the copyright law to monopolize facts or ideas.

The unanimous Supreme Court wrote in *Feist* that permitting public access to facts and ideas, even when conveyed by copyrighted expression, "is not 'some unforeseen by-product of a statutory scheme.' It is, rather, 'the essence of copyright,' and a constitutional requirement."[235] Moreover, this is precisely the same reasoning that has led courts in the past to refuse to protect expression when that expression "must necessarily be used as incident to" the work's underlying ideas or data.[236] Under the doctrine of merger, excluding otherwise protectable expression from copyright law's monopoly is preferable to allowing that monopoly to extend to any fact or idea.

Of course, courts would not haphazardly declare enforcement of the exclusive rights unconstitutional. As the above example suggests, the essential requirements that must be present for the court to invalidate enforcement of the exclusive rights are: (1) the work must be in a format or medium that *requires* infringing exclusive rights to access the facts or ideas it contains; (2) the work must *not* be available in any other format that does not require infringing conduct; (3) the court will prevent the copyright holder from enforcing only those rights that a user *must* infringe to access facts or ideas; (4) the constitutional invalidity of those rights will apply only to those infringing activities necessary to access the facts or ideas, not to any subsequent or additional infringing activities; and (5) the copyright holder must previously have distributed, or authorized distribution of, the copyrighted work to the public. Without this last condition, the copyright holder would be unable to rely on copyright law to protect her private expression from public scrutiny. Copyright law, unlike patent law, does not require disclosure as a condition for protection. To require disclosure would involve other constitutionally protected interests, such as privacy,[237] and would violate the copyright

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235. *Feist*, 499 U.S. at 349 (quoting *Harper & Row*, 471 U.S. at 589 (Brennan, J., dissenting)) (citations omitted).

236. Baker v. Selden, 101 U.S. 99, 104 (1879).

237. Beginning with *Whalen v. Roe*, the Court has recognized a constitutional interest "in avoiding disclosure of personal matters." 429 U.S. 589, 599 (1977); *see also* Walls v. City of Petersburg, 895 F.2d 188, 192 (4th Cir. 1990) ("Personal, private information in which an individual has a reasonable expectation of confidentiality is protected by one's constitutional right to privacy."); Tavoulareas v. Washington Post Co., 724 F.2d 1010, 1019 (D.C. Cir. 1984) ("Recent Supreme Court decisions indicate that a litigant's interest in avoiding public disclosure of private information is grounded in the Constitution itself, in addition to federal statutes and the common law."); Barry v. City of New York, 712 F.2d 1554, 1559 (2d Cir. 1983) (holding that Nixon v. Administrator of Gen. Serv., 433 U.S. 425 (1977), *cert. denied*, 464 U.S. 1017 (1983), reaffirmed the constitutional interest in nondisclosure of personal information); United States v. Westinghouse Elec. Corp., 638 F.2d 570, 577 (3d Cir. 1980) (recognizing a constitutional right to privacy and holding that the interest of an employee in her medical records necessarily implicated that right); Duplantier v. United States, 606 F.2d 654 (5th Cir. 1979) (characterizing the issue presented as "whether personal financial disclosure required by the [Ethics in Government] Act impermissibly intrudes into the sphere of family life

holder's first publication right to control when, and if, to release a work to the public.[238] The Supreme Court has extended special deference to the right of first publication on the basis that it is "inherently different from other § 106 rights in that only one person can be the first publisher; . . . the commercial value of the right lies primarily in exclusivity."[239] The Copyright Clause requires that once the copyright holder distributes expression to the public, she may not exercise a monopoly over the facts and ideas contained therein.

Declaring the constitutional invalidity of any proposed application of the copyright law that restricts access to facts and ideas is a straightforward and effective way to preserve the law's constitutional boundaries. Given the five conditions for its application, the approach narrowly serves the constitutional interest, without involving courts in rewriting copyright law. As those conditions occur more frequently, particularly as more copyrighted works are available only in digital format, copyright owners will likely lobby Congress to specify their rights in digital works rather than bear the cost and run the risk of having to seek enforcement of an exclusive right whose enforcement may be declared unconstitutional.

On the other hand, invalidating copyright law as applied presents several practical and legal difficulties. Courts are reluctant to reach constitutional grounds if there are nonconstitutional grounds for deciding the questions raised.[240] Therefore, a court would declare a proposed enforcement unconstitutional only as a last resort. While such declarations would prevent an unconstitutional application of copyright law, they would occur on a case-by-case basis and provide only limited guidance to copyright holders and users as to the exact contours of copyright protection. When combined with the cost and delay associated with litigation of constitutional issues, the ad hoc nature of this approach would be a slow and imperfect guide to the rapidly evolving digital information

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constitutionally protected by the right of privacy"); Schacter v. Whalen, 581 F.2d 35, 37 (2d Cir. 1978) (holding that a constitutional right to informational privacy exists but is not infringed by the subpoena of medical records as long as privacy protections are afforded); Plante v. Gonzalez, 575 F.2d 1119, 1123 (5th Cir. 1978) (explaining that the constitutional right to privacy includes the "right to confidentiality"). *See generally* Francis S. Chlapowski, The Constitutional Protection of Informational Privacy, 71 B.U. L. Rev. 133 (1991).

238. Harper & Row Publishers, Inc. v. Nation Enter., 471 U.S. 539, 553 (1985) ("The right of first publication implicates a threshold decision by the author whether and in what form to release his work."); *see also* Salinger v. Random House, 811 F.2d 90, 97 (2d Cir.), *cert. denied*, 484 U.S. 890 (1987) (discussing author's right to control first publication as weighing against any possible fair use prior to publication).

239. *Harper & Row*, 471 U.S. at 553 ("[T]he potential damage to the author from judicially enforced 'sharing' of the first publication right with unauthorized users of his manuscript is substantial . . . .").

240. *See* Three Affiliated Tribes of Berthold Reservation v. Wold Eng'g, 467 U.S. 138, 157 (1984) ("It is a fundamental rule of judicial restraint, however, that this Court will not reach constitutional questions in advance of the necessity of deciding them."); Gulf Oil Co. v. Bernard, 452 U.S. 89, 99 (1981) ("[P]rior to reaching any constitutional questions, federal courts must consider nonconstitutional grounds for decision.").

marketplace. New statutory language, or a specific interpretation of some existing part of the statute, would provide more specific and speedy instruction. In addition, too little regard for the exclusive rights or too much uncertainty about their validity will cause creators to expand their use of contracts and other noncopyright means for protecting their works.[241] As discussed below,[242] this is likely to result in copyright owners exercising even greater power to restrict access to their works and the facts and ideas those works contain. Finally, and most importantly, courts are not in the habit of declaring any use of the copyright law unconstitutional. Despite frequent repetition of the constitutional purpose and limits of copyright law—to provide an incentive for creation and dissemination but never to protect facts and ideas—no court has struck down any provision of the copyright law as unconstitutional. It therefore seems unlikely that they are willing to start.

B. Apply Section 102(b) to Protect Access

Rather than declaring applications of the copyright law that have the effect of blocking access to facts or ideas constitutionally invalid, courts are more likely to find that such applications violate section 102(b) of the 1976 Act.[243] Under this approach, courts would invalidate applications under the copyright statute rather than the Constitution that have the impermissible effect of extending protection to facts, ideas, and the like.

The same essential requirements would be necessary for statutory invalidation of an application of the copyright law to block access to facts or ideas, as were required for constitutional invalidation: (1) the work must be in a medium that requires infringement to access whatever facts or ideas it contains; (2) the work must not be available in any other format; (3) the court will prevent the copyright holder from enforcing only those rights that a user must infringe to access facts or ideas; (4) only the rights implicated by those activities necessary to access the facts or ideas will be invalidated; and (5) the copyright holder must previously have distributed, or authorized distribution of, the copyrighted work to the public.

Declaring applications of the copyright law that restrict access to facts

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241. *See* Steven Metalitz, The National Information Infrastructure, 13 Cardozo Arts & Ent. L.J. 465, 469-70 (1995) (discussing varying legal doctrines affecting digital information); Philip H. Miller, Life After Feist: The First Amendment, and the Copyright Status of Automated Databases, 60 Fordham L. Rev. 507, 526-27 (1991) (discussing the use of contracts to control unauthorized use of digital information); Jane C. Ginsburg, Copyright Without Walls?: Speculations on Literary Property in the Library of the Future, Representations, Spr. 1993, at 42 (discussing the use of contracts to protect copyrighted expression, and the interaction of copyright and contract law); Maureen A. O'Rourke, Proprietary Rights in Digital Data, 41 Fed. B. News & J. 511 (1994) (analyzing proprietary rights in digital information).

242. *See* infra notes 298-308 and accompanying text.

243. 17 U.S.C. § 102(b) ("In no case does copyright protection for an original work of authorship extend to any idea, procedure, process, system, method of operation, concept, principle, or discovery, regardless of the form in which it is described, explained, illustrated, or embodied in such work.").

or ideas statutorily invalid offers the same advantages as declaring those applications constitutionally invalid. Moreover, it overcomes one of the significant disadvantages of the constitutional approach, namely the hesitancy of courts to reach constitutional issues, particularly in the area of copyright law. And its reliance on a specific statutory provision rather than a broad constitutional doctrine may yield more consistent and predictable results.

However, this application of section 102(b) raises some of the same issues as the constitutional approach, especially the use of time-consuming and expensive case-by-case adjudication. More importantly, although section 102(b) does not allow a copyright to extend to a fact or idea, it is silent on the question of whether copyright protection may be denied to original, fixed expression that must necessarily be duplicated to access the facts or ideas expressed. In short, section 102(b) restricts what may be the subject of copyright protection, but it does not guarantee a right of access to noncopyrightable information that is captured within copyrighted expression.

C. Interpret the Merger Doctrine to Protect Access

Another alternative is for courts to interpret the merger doctrine to protect access to facts and ideas contained within copyrighted expression. At present, the merger doctrine applies where an idea may be expressed in only one or in a very limited number of ways. Courts could extend the merger doctrine to reach facts and ideas that are conveyed in a technological medium that requires reproduction of the expression in order to access the facts or ideas. Under this extension, courts would find that merger exists not only when an idea could only be expressed in a limited number of ways, but also when an idea, which could be expressed in many ways, happened to be expressed in a technological medium that could only be accessed in a limited number of ways that required reproduction of the expression.

This extension would amount to a substantial revision of the merger doctrine. As presently applied, the doctrine is intended to prevent a copyright holder from obtaining patent-like protection over the *use* of the ideas that her copyrighted work conveys. The merger doctrine plays no role today in guaranteeing *access* to those ideas. In *Baker v. Selden*,[244] for example, the Supreme Court held that Selden's copyright in a book describing a new accounting system could not extend to the ledger pages that were necessary to use that accounting system. The Court stressed that:

> [W]hilst no one has a right to print or publish [Selden's] book, or any material part thereof, as a book intended to convey instruction in the art, any person may practise [sic] and use the art itself which he has described and illustrated therein. The use of the art is a totally different thing from a publication of the

244. 101 U.S. 99 (1879).

book explaining it.[245]

The Seventh Circuit Court of Appeals observed more than fifty years later that the thrust of the Supreme Court's decision in *Baker* is that the public may reproduce or adapt expression under the merger doctrine only "to the extent necessary to achieve the use of that which is disclosed."[246] The merger doctrine responds to the situation where "the practical use of the art explained by the copyright[ed expression] and lodged in the public domain can be attained solely by the employment of language which gives expression to that which is disclosed."[247]

This is not inherently the case with digital expression. Most of the ideas conveyed by digital expression could be *used* without necessarily using the expression in which they were originally conveyed. For example, if a digital file contains information about how to make an ice cream soda, a user could certainly construct that ice cream soda—and thereby use the idea contained in the expression—without copying the expression itself. The special problem in the digital context is that those ideas cannot be *accessed* without reproducing the expression in which they are presently captured. In the ice cream soda example, the instructions cannot be read without copying the expression, but they are still capable of being expressed in many ways and of being acted upon without copying any expression at all.

Many courts have applied the merger doctrine in the digital context.[248] These cases, although limited to computer programs and not addressing other forms of digital expression, highlight the merger doctrine's limited focus on the relationship between the idea and the manner, not the medium, in which it is expressed. In *Apple Computer v. Franklin Computer Corp.*,[249] for example, the Third Circuit Court of Appeals wrote: "The idea of one of the operating system programs is, for example, how to translate source code into object code. If other methods of expressing that idea are not foreclosed as a practical matter, then there

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245. Id. at 104; *see also* Morrissey v. Procter & Gamble Co., 379 F.2d 675, 678 (1st Cir. 1967):

> When the uncopyrightable subject matter is very narrow, so that "the topic necessarily requires," if not only one form of expression, at best only a limited number, to permit copyrighting would mean that a party or parties, by copyrighting a mere handful of forms, could exhaust all possibilities of future use of the substance.

(quoting Sampson & Murdock Co. v. Seaver-Radford Co., 140 F. 539, 541 (1st Cir. 1905)) (citation omitted).

246. Crume v. Pacific Mut. Life Ins. Co., 140 F.2d 182, 184 (7th Cir. 1944).

247. Id.

248. *See, e.g.*, Atari Games Corp. v. Nintendo of Am., 975 F.2d 832 (Fed. Cir. 1992); Whelan Assoc. v. Jaslow Dental Lab., 797 F.2d 1222 (3d Cir. 1986), *cert. denied*, 479 U.S. 1031 (1987). *See generally* Peter S. Menell, An Analysis of the Scope of Copyright Protection for Application Programs, 41 Stan L. Rev. 1045 (1989).

249. 714 F.2d 1240 (3d Cir. 1983).

is no merger."[250] In the one case to consider whether the ideas and functional concepts of a computer program had merged with the copyrighted object code, the Ninth Circuit Court of Appeals rejected the claim.[251] The court in *Sega Enterprises v. Accolade* noted that, in the case of computer programs, merger was possible only where the ideas, procedures, and processes "are not visible to the user when operating [the program]—and then only when no alternative means of those ideas and functional concepts exists."[252] In those few cases, the court determined that "case-by-case, equitable 'fair use' analysis" is "more appropriate."[253] The *Sega* decision is examined in greater detail under the fair use discussion below.[254]

Extending the merger doctrine to address the technological anomaly that digital expression must be copied to be accessed, while not beyond the power of courts, is a significant departure from the doctrine's roots. It would involve courts in applying the doctrine to expression that may convey no ideas (*e.g.*, a digital photograph of a sunset), ideas that can be found in other expression (*e.g.*, an advertisement), or ideas that require no particular form of expression to be used (*e.g.*, instructions for making an ice cream soda). Application of the merger doctrine has never been easy, given the difficulty of distinguishing between a work's idea and its expression. That has proved particularly true in the digital context, where courts have struggled to separate a computer program's idea from the manner in which it is expressed.[255] The extensive litigation involved in resolving that issue, and the inconsistent outcomes that result, suggest that extending the merger doctrine is an impractical way to address the technological transformation of copyright law.

D. Revise Exemptions to Protect Access

An alternative to invalidating a specific application of copyright law or extending the merger doctrine would be to amend specific sections of the 1976 Act, particularly those dealing with the scope of the exclusive rights. While many amendments are possible, the three most effective would be to the first sale doctrine, the "essential step" exemption for computer programs, and the definitions contained in section 101.

1. Section 109

The first sale doctrine, codified in section 109, is one of copyright law's most powerful facilitators of public access to copyrighted works, and

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250. Id. at 1253.

251. Sega Enter. v. Accolade, 977 F.2d 1510, 1527 (9th Cir. 1992).

252. Id. at 1520.

253. Id.

254. *See* infra notes 280-88 and accompanying text.

255. *See, e.g.*, Computer Assoc. v. Atari, 982 F.2d 693 (2d Cir. 1992); Atari Games Corp. v. Nintendo of Am., 975 F.2d 832 (Fed. Cir. 1992); Whelan Assoc. v. Jaslow Dental Lab., 797 F.2d 1222 (3d Cir. 1986).

the facts and ideas they may contain. The doctrine permits libraries to loan books, businesses to route periodicals to their employees, and friends to share tapes and CDs.[256] The doctrine, however, is largely inapplicable to digital works because these works, particularly when on a computer network, are "shared" only by making new copies, not by transfer of an authorized copy.

Under the narrow version of the proposed amendment, Congress would expand the first sale doctrine to permit the noncommercial distribution of digital works by "transmission," even if that transmission resulted in a new copy being made.[257] The amendment would give effect to the first sale doctrine in the digital context, but would limit its impact by applying only to noncommercial distribution. The amendment would also retain the existing restriction that limits the first sale doctrine to "lawfully made" copies. As a result, the exemption would not permit reproduction of copies that were not produced by the copyright owner, with her permission, or under some statutory provision that authorized the initial reproduction of the work. The exemption would also still retain the phrase "owner," rather than "possessor." To the extent that the first sale doctrine does not currently apply to copies of digital works that the copyright holder has licensed, rather than sold, it would still not apply. To the extent that confusion and uncertainty surround that distinction under current law, the situation would not improve under the narrow version of the proposed amendment. Although limited in its force, the narrow amendment of the first sale doctrine would permit, for example, someone who subscribes to a newspaper on-line to transmit a copy of that electronic newspaper to a friend or colleague.

Given the limits of the narrow version of the amendment, Congress might amend the first sale doctrine more broadly to permit the electronic distribution of copies by someone other than the owner of a particular copy or someone acting with her permission. Congress might also permit for-profit electronic distribution. Neither of these broader amendments seems likely. Considerable debate surrounds the extent to which licenses convey ownership-like interests, for purposes of applying copyright law provisions that turn on "ownership," such as the first sale doctrine and the "essential step" and "archival purpose" provisions of section 117. In the absence of agreement among the key players, Congress is unlikely to resolve this issue legislatively. Moreover, extending the first sale doctrine broadly to protect distributions by possessors, rather than owners of copies of copyrighted material, runs the risk of crippling the market for electronic works. The purchaser of one copy could distribute it electronically to other individuals, who, although mere possessors, could redistribute it to many other users under the broad amendment to the first sale doctrine. Similarly, applying the new first sale reproduction right to commercial uses

256. 17 U.S.C. § 109(a).

257. IITF Report, supra note 98, at 217 n.543.

would effectively vitiate the reproduction right in the digital context. As soon as the creator released her work on a network, the amended law would permit anyone to resell new copies of that work. The resellers would not have borne the cost of creating and bring the expression to the market, and so could afford to sell the copyrighted work at a lower price than the copyright holder. This would defeat the economic incentive to create and disseminate.

Information providers are certain to argue that this would be the case even if Congress extended the first sale doctrine only to insulate noncommercial transmissions of copyrighted works. This seems unlikely given the other limitations on the application of the first sale doctrine and the commercial value of obtaining an authentic, accurate copy of a work directly from its creator or publisher. It is certain, however, that a right to transmit copies of a work, even when limited to noncommercial purposes, will diminish the market for the copyrighted work. This is inevitable with any application of the first sale doctrine. The doctrine protects valuable uses of copyrighted works and thereby diminishes the copyright holder's profits. Recall that, except for computer programs and sound recordings, the first sale doctrine protects only the commercial, for-profit distribution of particular copies of copyrighted works. Even for computer programs and sound recordings, the law permits owners to share, give away, or sell copies, even in the face of claims by the industries involved that secondary users often copy loaned copies, thereby infringing the exclusive right to reproduce. Some market impact is inevitable under both current and proposed first sale provisions.

The one addition to the narrow version of the amendment that would serve important public purposes without unnecessarily harming the copyright holder's economic incentive, would be to apply the doctrine to "lawful possessors" rather than just "owners" of a particular copy of a copyrighted work. This narrow extension would not condone theft, by requiring that the copy be possessed "lawfully." But it would also clarify that copyright holders could not circumvent the first sale doctrine by merely licensing, rather than transferring title to, copies of copyrighted works.[258]

2. Section 117

Although the "essential step" exemption in section 117 recognizes that virtually all computer software must copy itself onto a hard drive or floppy disk or into RAM to work—precisely the technological characteristic that

258. Congress achieved a similar purpose, with regard to the public performance right, when it amended § 109 in 1990 to authorize the owner of a lawfully made copy of a coin-operated video game to publicly perform that game without the permission of the copyright owner. Pub. L. No. 101-650, Tit. VIII § 803, 104 Stat. 5135 (codified at 17 U.S.C. § 109(e) (1994)). The amendment recognized that it would be patently unfair to permit the copyright owner to sell a copyrighted game, which could only be accessed through performance, and then deny the purchaser the right to perform it.

makes legal access of digital information so difficult—the exemption applies only to computer programs.[259] The definition of a "computer program" excludes digital works—documents, images, databases, and the like—that are not used "in a computer to bring about a certain result."[260]

If amended, however, the "essential step" exemption might provide a guarantee of access to digital information well-tailored to the digital environment. Under such an amendment, Congress could extend section 117 to apply to all expression fixed in any medium requiring a computer to access. The section would then exempt from the exclusive rights any reproduction or adaptation that was an "essential step" in accessing the digital work. Congress would also need to amend section 117 to apply not only to owners of computer programs and other digital works, but to all lawful possessors. This was the language proposed by CONTU,[261] but later altered by Congress. This change would recognize the user's interest in accessing the facts and ideas contained in works, copies of which she does not own. Copyright law's purpose is not limited to ensuring the provision of facts and ideas to purchasers. On the contrary, copyright law's constitutional purpose denies the copyright owner control over a work's facts and ideas. That purpose is frustrated if copyright owners effectively monopolize facts and ideas by controlling access to them. Any amendment of the law to provide access in the digital context must not be limited in its effect only to copies "owned" by the would-be user.

Amending section 117 as suggested would be an effective and well-tailored means of providing access to digital facts and ideas. Because it deals only with computerized expression, there is little danger the new language will be applied to some unintended field. The suggested amendment provides a statutory guarantee of access to information contained within any digital work that the user lawfully possesses. Lawful possession is not limited to possession authorized by the copyright holder; it also includes possession under the first sale or fair use doctrines, or any of the statutory licenses provided in the statute. The concept is therefore broad enough to provide access to a wide array of information, without providing access to private, unpublished works, or creating an incentive to steal copies of copyrighted works.

3. Section 101

The third provision which Congress might amend to protect access to facts and ideas is section 101, which contains the definitions that are essential to the meaning of the subsequent substantive provisions. Three terms are particularly promising candidates for amendment.

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259. 17 U.S.C. § 117.
260. Id. § 101.
261. CONTU Final Report, supra note 6, at 12.

a. "Computer Program"

First, Congress could alter the definition of "computer program" to include other types of digital information than just "statements or instructions to be used directly or indirectly in a computer in order to bring about a certain result."[262] This amendment would have much the same effect as the amendment to section 117 discussed above, except that the application would be limited to "owners" of authorized copies of computer programs. This suggested amendment, while perhaps easier to bring about, would therefore be less effective than a revision of section 117. It would also raise the risk of altering the meaning of other sections of the copyright law that employ the phrase "computer program." For example, the exclusion from the full effect of the first sale doctrine of copies and phonorecords embodying a sound recording or computer program[263] would extend to other forms of digital information. This effect is not necessarily fatal, as the exclusion extends only to the commercial rental, leasing, and lending of computer programs. Congress could avoid the effect entirely by amending section 101 or section 117. But the mere existence of unintended effects of amending the definition of "computer program" cautions against this approach.

b. "Publicly"

Congress might also amend the definition of "publicly" to exclude displays and performances of digital expression, even networked digital expression, in the absence of an audience. At present, the definition of performing or displaying a work "publicly" includes the following: "[T]o perform or display it at a place open to the public or at any place where a substantial number of persons outside of a normal circle of a family and its social acquaintances is gathered"; and

> [T]o transmit or otherwise communicate a performance or display of the work to a place specified by clause (1) or to the public, by means of any device or process, whether the members of the public capable of receiving the performance or display receive it in the same place or in separate places and at the same time or at different times.[264]

It is the second part of the definition that poses the problem in the digital context. To provide adequate access to digital information, Congress would need to alter that part to require that the work be performed or displayed and made available to the public *at the same time and by the same party*. Under this suggested amendment, a person who posts a copyrighted work to an electronic bulletin board and the person who operates the

262. 17 U.S.C. § 101.
263. Id. § 109(b).
264. Id.

bulletin board could not be liable for public display or performance, because neither has actually performed or displayed the work. If either has made it available to the public, it is in the same way that the owner of a book makes the book's expression available to the public by leaving the book on a park bench. In short, there would be no liability, because no exclusive right has been infringed. Similarly, the person who downloads the work and views it alone on her computer cannot be liable because, even though she has performed or displayed the work, she has not done so publicly. To be liable for infringing the exclusive rights to perform or display copyrighted expression publicly, an individual must have both performed or displayed the work and done so publicly. The amendment to the definition of "publicly" would clarify that doing only one of these two is not infringement.

Alternatively, Congress could amend the definition of "publicly" by adding a third subpart stating that the display or performance of a digital work alone, in the absence of an audience, is not "public." If the user broadcasts that work or otherwise displays or performs it to the public, she would not meet the exemption. But if her conduct is limited to the simple display or performance of a digital work to only herself or her family and close circle of friends, it would fall under the exemption and not infringe.

Amending the definition of "publicly" in this way would restrict courts' expansive reading of the term to prohibit conduct far exceeding any common sense notion of the term. It would end an unfortunate line of cases that has found video stores and hotels liable for publicly performing rented video tapes, even when they had fully compensated the copyright owner for the sale of a tape containing programming that could be accessed only by being performed, and when the tape was performed by a customer to a single viewer or family. Amending the definition of publicly in this way would prevent copyright law from granting copyright owners a monopoly over the facts and ideas contained in a technology—video or digital—that the user must perform or display to access.

As a means of guaranteeing access to digital information, however, merely amending the definition of publicly in this way will not suffice. Because no user can access a digital work without copying it, at least under current judicial interpretations of fixation, Congress would also have to clarify the reproduction right to fulfill the constitutional obligations of copyright law.

c. "Fixed"

The third amendment to section 101 that Congress might enact would define "fixed" to exclude RAM and temporary storage to disk caches. This simple statutory alteration would make it possible to access a digital work without violating the exclusive right to reproduce. The computer would still copy the work into RAM—whether loading the work from a disk or downloading it from a network—but that copy would not be fixed and so would not infringe.

It would still constitute infringement to reproduce the copyrighted work in any "fixed" medium, such as saving it to a hard drive or printing out a copy. As a result, copyright holders would suffer no diminishment of the rights that copyright law affords them in all other contexts. They simply would not gain the unanticipated windfall that the technological transformation of copyright otherwise appears certain to convey.

There is considerable logical support for finding that RAM is not fixed. Professor Pamela Samuelson has likened the argument that a work in RAM is fixed because it can be perceived or reproduced as long as the computer is left on, to claiming that the image of a book in a mirror is fixed "because the book's image could be perceived therefore more than a transitory duration, *i.e.*, however long one has the patience to hold the mirror."[265] If RAM, which must be refreshed electronically many times a second, is not the epitome of "transitory duration" and therefore not within the meaning of "fixed," it is difficult to imagine what is.

Combined with the suggested amendment to "publicly," clarifying the definition of "fixed" would effectively eliminate the technological expansion of copyright law. Copyrighted expression could be captured by the computer and read or viewed on screen, just like a user can pick up a book and read it, without violating the copyright law. A user can legally unlock the facts and ideas in a work without the permission of the copyright holder. Amending the definition of "fixed" would make this possible irrespective of the technological context.

On the other hand, amending the definition of "fixed" to exclude RAM would not protect the widespread practice of copying downloaded information to a hard drive. Moreover, this suggested amendment would not alleviate the extensive application of the public performance and display rights to restrict access to digital information. Finally, this suggested amendment would have no effect if Congress were to amend the 1976 Act, as the Working Group has recommended, to create an exclusive right of transmission.

E. Interpret or Revise Fair Use to Protect Access

The best and most likely means for guaranteeing access to digital expression, and the facts and ideas expressed therein, is the judicial interpretation or statutory revision of fair use. Courts have often had to interpret the statutory provisions of copyright law in light of new technologies. In that situation, the Supreme Court has noted the law "must be construed in light of this basic purpose . . . to stimulate artistic creativity for the general public good."[266] The Supreme Court wrote in 1968, in a

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265. Samuelson, The NII Intellectual Property Report, supra note 228, at 22-23; *see also* Litman, supra note 96, at 42 ("I would argue that the better view of the law is that the act of reading a work into a computer's random access memory is too transitory to create a reproduction within the meaning of section 106(1).").

266. Twentieth Century Music Corp. v. Aiken, 422 U.S. 151, 156 (1975).

case dealing with the application of copyright law to newly developed cable television technology: "[O]ur 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. . . . We must read the statutory language . . . in the light of drastic technological change."[267]

Courts have often used the fair use doctrine to accommodate the unique features of new technologies.[268] "From the infancy of copyright protection, some opportunity for fair use of copyrighted materials has been thought necessary to fulfill copyright's very purpose, '[t]o promote the Progress of Science and useful Arts. . . .'"[269] "The legislative history of section 107 suggests that courts should adapt the fair use exception to accommodate new technological innovations."[270] Courts might protect that constitutional purpose in the context of digital technologies by excusing as fair use the reproduction and public display or performance necessary to view a digital work. Fair use would be particularly well-suited for this purpose because it requires courts to consider the specific context in which the use took place.

Under this application of fair use, a user who is sued for downloading or otherwise using a copyrighted digital work or publicly displaying or performing that work, would defend on the basis that her use constituted fair use. Just as with any other fair use analysis, the court would consider the four factors listed in the statute.[271] If the infringing activity, however, was limited to those steps necessary to accessing and viewing the work, the court would presume the use to be fair. The four factors would either support or rebut that presumption. It is not surprising that these factors parallel the five conditions identified above for a court to declare an application of an exclusive right unconstitutional.[272]

For example, if the infringement resulted solely from those uses of the copyrighted work necessary to access its facts or ideas, the first factor—"the purpose and character of the use"—would weigh in favor of fair use. Similarly, if the use was solely for private purposes, the first factor would weigh in favor of fair use. On the other hand, if the work involved was unpublished, the second factor—"the nature of the copyrighted work"—would weigh against a finding of fair use. The third factor—"the

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267. Fortnightly Corp. v. United Artists, 392 U.S. 390, 395-96 (1968).

268. *See generally* Pamela Samuelson, Fair Use for Computer Programs and Other Copyrightable Works in Digital Form: The Implications of *Sony*, *Galoob* and *Sega*, 1 J. Intell. Prop. L. 49 (1993).

269. Campbell v. Acuff-Rose Music, Inc., 510 U.S. 569, 575 (1994) (quoting U.S. Const. art. I, § 8, cl. 8).

270. Atari Games Corp. v. Nintendo of Am., 975 F.2d 832, 843 (Fed. Cir. 1992).

271. *See* supra notes 69-71 and accompanying text (explaining the four factors of fair use calculus).

272. *See* supra notes 235-42 and accompanying text (outlining five conditions under which a court might find an application of an exclusive right unconstitutional).

amount and substantiality of the portion used"—and the fourth factor—"the effect of the use upon the potential market for or value of the copyrighted work"—are likely always to weigh against a finding of fair use where the doctrine is being used to provide access to digital information. The third factor is implicated because digital technology often copies all of the expression, for example, when loading a document into RAM, and a complete copy is necessary in any event if the user is to access the facts and ideas the work contains. Market impact is also likely, because the copyright owner who is distributing a work only in digital format will depend, at least in part, upon revenues from providing digital access to the work. The single user's unauthorized access, should it become widespread, would certainly threaten the potential market for the copyrighted work.

In weighing the final two factors, then, courts must be sensitive to contextual considerations. Particularly when evaluating market impact, courts should carefully parse the reason for the effect on the market. If the effect is due solely to the lost revenue from providing access to the copyrighted work, this factor should not weigh against fair use, because it is technologically impossible to provide the user with access to the facts and ideas contained in the work without providing access to the expression as well. If the effect is due to some subsequent use of the work, the court would have to consider the nature of that use, as it does already. If, for example, the subsequent use merely substitutes for the original (*e.g.*, the user offers to sell an exact copy of her own unauthorized copy), fair use would certainly not apply. If, on the other hand, the user quotes from the work to criticize or satirize it in a subsequent, new work and thereby harms the market for the original work, market impact should not weigh against a finding of fair use. Such a use is precisely what Congress intended the fair use provision to facilitate.[273] Finally, if the user reproduces the facts and ideas from the work in a new work and thereby harms the market for the original work, market impact should not weigh against a finding of fair use, because the copyright holder had no right to control the facts and ideas she used in the first work.

To be an effective limit on the unintended monopoly conveyed by the exclusive rights over facts and ideas in digital works, courts must also interpret the fair use provision to protect activities that do not necessarily involve "criticism, comment, news reporting, teaching (including multiple copies for classroom use), scholarship, or research."[274] This does not present any inherent difficulty because the statute refers to these activities as examples of applicable uses, and courts have often applied fair use to activities that bear little resemblance to those listed, for example, video

273. *See Campbell*, 510 U.S. at 591-92 ("[W]hen a lethal parody, like a scathing theater review, kills demand for the original, it does not produce a harm cognizable under the Copyright Act.").

274. 17 U.S.C. § 107.

recording copyrighted television programs for personal convenience.[275]

Federal courts have previously carved out a fair use exception to provide access to a copyrighted work's facts and ideas when the technology in which the work's expression was fixed prohibited that access without infringing an exclusive right. In *Atari Games Corp. v. Nintendo of America*,[276] the Federal Circuit Court of Appeals considered whether Atari's copying of Nintendo's copyrighted computer game program qualified as fair use. Atari admitted to copying Nintendo's program, but argued that fair use excused the copying because it was necessary to "reverse engineer"[277] the ideas that were part of the program. The court agreed with this reasoning. "The Copyright Act permits an individual in rightful possession of a copy of a work to undertake necessary efforts to understand the work's ideas, processes, and methods of operation."[278] The court found that "[t]his permission appears in the fair use exception to copyright exclusivity."[279]

The following year, the Ninth Circuit Court of Appeals decided *Sega Enterprises v. Accolade*.[280] The case presented facts nearly identical to those in *Atari*. The appellate court ruled:

> [W]e conclude based on the policies underlying the Copyright Act that disassembly of copyrighted object code is, as a matter of law, a fair use of the copyrighted work if such disassembly provides the only means of access to those elements of the code that are not protected by copyright and the copier has a legitimate reason for seeking such access.[281]

The reasoning in both cases is significant because both defendants copied the respective game programs in their entirety with the purpose of competing with the copyright holder in the marketplace. Their commercial intentions would tend to preclude a finding of fair use. But the Ninth Circuit Court of Appeals was careful to note that, although Accolade copied Sega's programs for a commercial purpose, that purpose was not to sell unauthorized copies of Sega's programs.[282] Rather, Accolade copied the programs to obtain access to their unprotected, functional aspects, which Accolade then used to develop new programs compatible with the Sega system.[283] This type of market competition does not weigh against a finding of fair use. "It is precisely this growth in creative expression, based on the dissemination of other creative works and the unprotected ideas contained in those works, that the Copyright Act was intended to

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275. *See, e.g.*, Sony Corp. of Am. v. Universal Studios, 464 U.S. 417 (1984).

276. 975 F.2d 832 (Fed. Cir. 1992).

277. For an illustrative example of the process of reverse engineering computer programs, see Sega Enter., Ltd. v. Accolade, Inc., 977 F.2d 1510, 1514-16 (1993).

278. *Atari*, 975 F.2d at 842.

279. Id. Ultimately, the court held that fair use did not excuse Atari's copying because Atari had misled the Copyright Office to obtain its copy of Nintendo's game program.

280. 977 F.2d 1510 (1993).

281. Id. at 1518.

282. Id. at 1522.

283. Id.

promote."[284] Similarly, although Accolade's new works were certain to affect the market for Sega's computer games, this effect is due to desirable competition, not infringement. "Accolade did not attempt to 'scoop' Sega's release of any particular game or games, but sought only to become a legitimate competitor in the field of [Sega] Genesis-compatible video games."[285]

The court's logic speaks directly to guaranteeing public access to the facts and ideas contained in digital works:

> [T]he fact that computer programs are distributed for public use in object code form often precludes public access to the ideas and functional concepts contained in those programs, and thus confers on the copyright owner a de facto monopoly over those ideas and functional concepts. That result defeats the fundamental purpose of the Copyright Act—to encourage the production of original works by protecting the expressive elements of those works while leaving the ideas, facts, and functional concepts in the public domain for others to build on.[286]

The judicial interpretation of fair use to excuse infringement that is necessary to obtain access to the facts and ideas contained in the work is an efficient and effective way to prevent copyright law from granting copyright holders a monopoly over those facts and ideas. Because fair use is an "equitable rule of reason,"[287] it allows courts to consider the specific context to determine whether a use is fair because it constitutes the only way—or one of a very limited number ways—of accessing the facts and ideas contained within a work. It requires courts to balance the nature and purpose of the use with the effect of the infringement on the original work. Moreover, it is less draconian in effect than a judicial declaration that copyright law is unconstitutional as applied. Congress indicated its intention in the legislative history of the 1976 Act that courts "adapt the doctrine to particular situations on a case-by-case basis, . . . especially during a period of rapid technological change."[288] As a result, and because courts are far more familiar with the fair use calculus, it is more promising as a practical means of controlling the technological extension of copyright law.

Fair use is by no means a perfect solution for protecting copyright law's adherence to its constitutional purpose. The variety of results, even from just the Supreme Court, already makes the fair use calculus difficult to predict. Case-by-case application of an already murky provision may be insufficient to provide the clarity and specificity required to ensure adequate access. Moreover, litigation is expensive and burdensome for the

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284. Id. at 1523.
285. *Sega Enter.*, 977 F.2d at 1523.
286. Id. at 1527.
287. House Report, supra note 60, at 66.
288. Id.

parties involved. As currently written, section 107's focus on certain types of uses, and the complexity of applying the four factors in the digital context, are likely to further diminish the value of fair use as the guarantor of copyright's constitutional purpose. When the justification for the use is constitutional, it makes little difference what the purpose of the infringing use is or how a court balances the four factors.

Congressional revision of fair use would address some of the objections to the judicial interpretation of the doctrine to protect access to facts and ideas contained within copyrighted expression. Congress could include "to provide access to facts and ideas within copyrighted expression" as another category of use to which the fair use provision might apply. In addition, or alternatively, Congress could amend the first factor—"the purpose and character of the use"—to state explicitly that if the use is necessary to provide access to facts or ideas, the use is presumptively fair.

Such an approach would help provide the clarity and certainty that is necessary in this important area. It would also facilitate consistency. The change is unlikely, however, because Congress has consistently shown itself wary to amend the copyright law unless there is a politically viable consensus for the amendment. Copyright law is essentially a collection of industry compromises, sanctioned by Congress.[289] Given the Administration's pending legislation to codify the technological expansion of copyright law when applied to digital expression, and the interests of information providers in strong, even unconstitutional, levels of copyright protection, the necessary consensus seems unlikely in the near future.

Judicial interpretation, however, does not depend on industry consensus. As the courts have already shown in *Atari* and *Sega*, fair use can be a useful guarantor of the public's access to facts and ideas captured in digital expression. The Supreme Court has written that "copyright is intended to increase and not to impede the harvest of knowledge . . . ."[290] Fair use may not be ideal, but it could prove an effective tool for guaranteeing that, even in the digital context, copyright law does in fact promote the development of knowledge.

IV. EPILOGUE: THE COPYRIGHT CONTEXT REVISITED

Congress is unlikely to amend the copyright law in the absence of a broad-based compromise among the politically powerful information supplier and information user communities, and no consensus appears on

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289. *See* Jessica Litman, Copyright, Compromise and Legislative History, 72 Cornell L. Rev. 857, 861 (1987) (acknowledging that much of the statutory language came from authors, publishers, and parties with economic interests); Litman, supra note 96, at 33 ("Congress, for its part, has, since the turn of the century, been delegating the policy choices involved in copyright matters to the industries affected by copyright."); Thomas P. Olson, The Iron Law of Consensus: Congressional Responses to Proposed Copyright Reforms Since the 1909 Act, 36 J. Copyright Soc'y 109, 109 (1989) (discussing the role of special interests in copyright law revisions).

290. Harper & Row Publishers Inc. v. Nation Enter., 471 U.S. 539, 545 (1985).

the horizon. Copyright holders are understandably loathe to surrender any part of their technological windfall, particularly with the Administration firmly supporting them. Therefore, although amending the copyright law to clarify the definitions of publicly and fixed, or to expand the role of fair use, might be the preferred alternatives, they are not likely to prove realistic options. As has often proved the case with integrating new technologies into the fabric of copyright law, the most likely source of meaningful redress is the courts. The most reasonable action for the courts to take would be to interpret fair use to restrict the ability of copyright holders to block the public's access to the facts and ideas found within copyrighted expression.

The adjustment of these rights, however urgent, must nonetheless be judged against the broader context of copyright law, market dynamics, and technological change. The consistent history of copyright law in the United States has been the expansion of protection. Over the years, copyright protection has expanded by country of origin,[291] by subject matter,[292] by ease of obtaining protection,[293] by duration of protection,[294] by range of liable parties,[295] and by the definition of what constitutes infringement.[296] Today, copyright protects virtually all expression fixed in any medium, and that protection will last fifty years beyond the death of even an author who is unaware of, or unconcerned about exercising, those rights.

Throughout more than a century of dramatic expansion of copyright law, Congress and the courts have continued to acknowledge the constitutional purpose of creating an incentive for creation and dissemination. But in reality the law has greatly favored expanding protection for the creator, while paying little more than lip service to the public interest in dissemination. Although the law gives the copyright owner broader, easier to obtain, and longer lasting rights than ever before, few courts seriously question whether copyright law has exceeded its

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291. Until passage of the Chace Act, ch. 565, 26 Stat. 1106, in 1891, U.S. copyright law did not prohibit copying non-U.S. works.

292. The first copyright act, Act of May 31, 1790, ch. 15, 1 Stat. 124, protected only maps, charts, and books. On the expansion of copyright subject matter generally, see Subcomm. on Patents, Trademarks & Copyrights of the Sen. Comm. on the Judiciary, 8th Cong., 1st Sess., Study No. 3, The Meaning of "Writings" in the Copyright Clause of the Constitution 72-76 (Comm. Print 1960).

293. The Berne Convention Implementation Act of 1988, Pub. L. No. 100-568, 102 Stat. 2853, eliminated compliance with statutory formalities as a condition for obtaining copyright protection.

294. The 1976 Act extended protection from 28 years (56 years, if renewed) to life of author plus 50 years, or, if the author is an organization, for 100 years after creation or 75 years after publication, whichever is first. 17 U.S.C. § 302 (1994).

295. The 1976 Act added to the exclusive rights the rights "to do and to authorize," 17 U.S.C. § 106, in an effort "to avoid any questions as to the liability of contributory infringers." House Report, supra note 60, at 61.

296. For example, an exclusive right to public display did not exist before the 1976 Act. Goldstein, supra note 35, § 5.10.

purpose. When amending the law, neither the Clinton Administration nor the Congress seem interested in considering whether another extension of the scope or duration of the exclusive rights will actually provide more incentive to create and disseminate. If they were interested, it is unlikely that copyright protection would extend today fifty years after the creator is dead—how much incentive does fifty years posthumous protection really provide?[297]

This history of expanding rights for copyright holders increases the urgency of redressing the technological extension of the copyright monopoly to forbid all access to a work and its facts and ideas. Because the law grants to copyright holders so many rights, so easily, and for so long, a further, unintended, technological expansion of those rights is particularly threatening to the constitutional interests of the public. Moreover, the fact that Congress has so willingly extended those rights suggests that Congress is not likely to respond effectively to this new technological expansion of copyright law. Courts have proven slightly more attuned, but only sporadically, to the constitutional limits of copyright law. They may therefore prove unreliable as a guarantor of the law's constitutional boundaries. In short, the trend towards copyright expansion raises the costs of failing to remedy the technological transformation of copyright law and increases the likelihood of that failure.

Moreover, copyright law is a declining source of rights for protecting works, particularly in the digital environment. Contracts are increasingly used to protect rights that even copyright law would not recognize. Successful database providers, such as Lexis and Westlaw, have long relied on contracts to govern access to, and control reuse of, material contained

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297. Consider Macaulay's statement before Parliament when that body was considering extending the term of copyright protection:

> Now, would the knowledge, that this copyright would exist in 1841, have been a source of gratification to [Dr.] Johnson? Would it have stimulated his exertions? Would it have once drawn him out of his bed before noon? Would it have once cheered him under a fit of the spleen? Would it have induced him to give us one more allegory, one more life of a poet, one more imitation of Juvenal? I firmly believe not. I firmly believe that a hundred years ago, when he was writing out debates for the Gentleman's Magazine, he would very much rather have had twopence to buy a plate of shin of beef at a cook's shop underground. Considered as a reward to him, the difference between a twenty year's term, and a sixty year's term of posthumous copyright, would have been nothing or next to nothing. But is the difference nothing to us? I can buy Rasselas for sixpence; I might have had to give five shillings for it. I can buy the Dictionary—the entire genuine Dictionary—for two guineas, perhaps for less; I might have had to give five or six guineas for it. Do I grudge this to a man like Dr. Johnson? Not at all. Show me that the prospect of this boon roused him to any vigorous effort, or sustained his spirits under depressing circumstances, and I am quite willing to pay the price of such an object, heavy as that price is. But what I do complain of is that my circumstances are to be worse, and Johnson's fare none the better, that I am to give five pounds for what to him was not worth a farthing.

56 Parl. Deb., H.C. (3d Ser.) 341, 349-50 (1841) (statement of T. Macaulay).

in their databases, even when that material includes noncopyrightable government documents and public domain material.[298] Copyright holders license almost all software, subject to contract terms, rather than sell it outright. Steven Metalitz, former Vice President and General Counsel of the Information Industry Association, has written:

> If content is king, then contract is the prime minister. Contract law is the mechanism that is really used to determine who gets information and what they can do with it. That is certainly true today in the online, electronic environment. . . . The same is true in the software field, as is the case with CD-ROM.[299]

According to Metalitz, "[t]his trend towards contract is going to accelerate as the [National Information Infrastructure] develops."[300]

Contracts are not without their advantages. They can provide clear terms, drafted specifically for the contexts in which they arise, and they help focus both parties' attention on the boundaries of permissible use. On the whole, however, contracts present significant disadvantages compared with copyright law. In the electronic information environment, information providers often impose contract terms in "shrink-wrap" licenses[301] and other contracts of adhesion. Those terms reflect neither a "meeting of minds" nor any consideration of whether the restrictions they impose provide incentives for creation and dissemination. Contracts are not subject to the first sale doctrine, statutory licenses, or fair use. In short, in the digital context, contracts often impose an impregnable barrier to the public's access to expression, facts, and ideas. As a result, they actively disserve the constitutional purpose reflected in both the Copyright Clause and the First Amendment.

There are some legal controls over the use of contracts that may slow the substitution of contracts for copyright as the principal means of controlling digital information. Depending upon their specific terms, the 1976 Act may preempt certain contracts.[302] Section 301 of the Act preempts "all legal or equitable rights that are equivalent to any of the exclusive rights within the general scope of copyright . . . in works of authorship that are fixed in a tangible medium of expression and come

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298. "Public domain" materials include works for which copyright protection has expired, works which were eligible for protection under the 1909 Act but for which protection was never obtained, and works that are ineligible for copyright protection.

299. Metalitz, supra note 241, at 469-70.

300. Id. at 470.

301. "A 'shrink wrap license' is an adhesion contract directed at consumers of computer software: its terms appear on the packaging of the software product and purport to secure the buyer's agreement, upon opening the package, to the terms and conditions set forth." Jane C. Ginsburg, Creation and Commercial Value: Copyright Protection of Works of Information, 90 Colum. L. Rev. 1865, 1920 n.211 (1990).

302. *See* Vault Corp. v. Quaid Software Ltd., 847 F.2d 255, 270 (5th Cir. 1988) (illustrating when copyright law preempts state law that conflicts). *See generally* Jane C. Ginsburg, No "Sweat"? Copyright and Other Protection of Works of Information After *Feist v. Rural Telephone*, 92 Colum. L. Rev. 338, 355-67 (1992).

within the subject matter of copyright . . . ."[303] Courts have also invalidated shrink-wrap licenses, at least where the buyer does not learn of the terms of the license until after the contract to purchase is formed.[304] Enforcement of contractual provisions that monopolize key information might even violate the antitrust laws.[305] Regardless of whether these or other means are ultimately effective, contracts currently remain an important means for controlling access to information. As such, they are being used to supplement or replace the copyright law with sweeping new rights that empower the copyright holder to control the terms and conditions of access to expression, facts, and ideas.

If the constitutional purpose of copyright law is not to be frustrated, the law must be interpreted or amended to restrict this use of contracts. Professor Robert Gorman has argued that, by specifying that copyright protection does not extend to facts and ideas,

> [Congress] is not declaring such an idea [or fact] outside of the subject matter of copyright so much as it is affirmatively declaring—as clearly as it can, and for the clearest of reasons—that ideas [and facts] are free to be copied, adapted and disseminated, and that no court is to construe the federal copyright monopoly as inhibiting that freedom. The implication for state law is equally clear: neither can the states.[306]

The Constitution itself provides Congress with justification for this position.

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303. 17 U.S.C. § 301 (1994).

304. Step-Saver Data Sys. v. Wyse Tech. and the Software Link, 939 F.2d 91 (3d Cir. 1991); Vault Corp. v. Quaid Software, 655 F. Supp. 750 (E.D. La. 1987), *aff'd*, 847 F.2d 255 (5th Cir. 1988). *See generally* David W. Maher, The Shrink-Wrap License: Old Problems in a New Wrapper, 34 J. Copyright Soc'y 292 (1987).

305. Under Section II of the Sherman Act, 15 U.S.C. §§ 1-2 (1994), a business incurs liability for refusing to deal with a competitor only when two elements exist: "(1) the possession of monopoly power in the relevant market and (2) the willful acquisition or maintenance of that power as distinguished from growth or development as a consequence of a superior product, business acumen, or historic accident." United States v. Grinell Corp., 384 U.S. 563, 570-71 (1966). These requirements form the basis of the "essential facilities doctrine," which consists of four elements: "(1) control of the essential facility by a monopolist; (2) a competitor's inability practically or reasonably to duplicate the facility; (3) the denial of the use of the facility to a competitor; and (4) the feasibility of providing the facility." MCI Communications Corp. v. AT&T, 708 F.2d 1081, 1132-33 (7th Cir. 1983). *See generally* Phillip Areeda, Essential Facilities: An Epithet in Need of Limiting Principles, 58 Antitrust L.J. 841 (1990). Even where these four conditions exist, a discriminating monopolist may escape liability by demonstrating a valid reason for its refusal to deal. Absent an acceptable justification, however, a monopolist meeting the four conditions of the essential facilities doctrine, who refuses to deal with otherwise qualified customers, violates the Sherman Act and becomes subject to its full panoply of remedies. The fact that the offending monopolist is in the business of providing information, an activity protected by the First Amendment, is irrelevant. Associated Press v. United States, 326 U.S. 1, 20 (1945) ("The First Amendment affords not the slightest support for the contention that a combination to restrain trade in news and views has any constitutional immunity.").

306. Robert A. Gorman, Fact or Fancy? The Implications for Copyright, 29 J. Copyright Soc'y 560, 604 (1982).

The enforcement of contracts that restrict access to information, particularly when that information cannot be obtained through other means, violates the spirit—if not the letter—of the copyright statute and the constitutional purpose it serves.

The Supreme Court applied this reasoning in the patent law context to find that the federal patent statute[307] preempted state patent-like protection:

> The novelty and nonobviousness requirements of patentability embody a congressional understanding, implicit in the Patent Clause itself, that free exploitation of ideas will be the rule, to which the protection of a federal patent is the exception. . . . [T]he federal patent laws must determine not only what is protected, but also what is free for all to use.[308]

Any response to the technological expansion of copyright law that does not take into account the proliferation of contracts used to supplement or replace the copyright law's provision is certain to be ineffective.

Finally, if it is to serve its constitutional purpose, copyright law must be viewed in the context of explosive technological change. This Article has focused on one critical effect of that change, namely, the extension of copyright protection to facts and ideas contained in digital works. But the proliferation of computers, networks, and new forms of digital media may require a wholly new approach to copyright law.[309] Copyright law was designed for a world in which copying was difficult, economically impractical, and relatively easy to regulate by focusing on the physical manifestation of the work and the actual incident of copying (*e.g.*, photocopying a book). As more information is available in digital format and the technologies to obtain, view, and copy that information are increasingly widespread and affordable, U.S. copyright law becomes increasingly outmoded. As John Perry Barlow, Grateful Dead lyricist and founder of the Electronic Frontier Foundation, has written:

> So far we have placed all of our intellectual [property] protection on the containers and not on the contents. And one of the side effects of digital technology is that it makes those containers irrelevant. Books, CDS, filmstrips—whatever—don't need to exist anymore in order to get ideas out. So whereas we thought we have been in the wine business, suddenly we realized that all along we've been in the bottling business.[310]

Information technologies present dramatic opportunities for new works, new markets, new incentives, and new uses for expression. These

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307. 35 U.S.C. §§ 101-376 (1994).

308. Bonito Boats v. Thunder Craft Boats, 489 U.S. 144, 151 (1989). *See generally*, Ginsburg, supra note 302, at 353-66.

309. *See generally* Pamela Samuelson & Robert J. Glushko, Intellectual Property Rights for Digital Library and Hypertext Publishing Systems, 6 Harv. J.L. & Tech. 237, 239-42 (1993).

310. Charles W. Beardsley, Uncorking Fine Wine; Copyright Laws, Mechanical Engineering-CIM, Aug. 1994, at 6 (quoting John Perry Barlow).

technologies lower publishing and distribution costs, while facilitating more rapid and efficient dissemination to a larger audience. Computer networks offer a variety of ways to distribute costs and a large population from which to recoup cost and collect profits. Copyright holders have the potential to charge by *use*, just like a theater or symphony, thereby allocating their costs over all users, not just purchasers. Networks also afford many opportunities for multiple revenue streams—subscriptions, advertising, connection charges, monthly fees, per article or per chapter charges, and licensing fees—along with technological means of accounting for those uses. CD-ROMs and floppy disks present similar opportunities. Those media are technologically simple and cost-effective to produce, even in small numbers, thereby not only reducing initial production costs, but also eliminating the need to carry large inventories, with associated storage, accounting, and tax costs, while facilitating timely updating of materials.

Users benefit enormously from the dazzling array of new information products and services, lower costs, and the extraordinary potential for access to diverse expression and information, even from remote geographical locations. Armed with digital technologies, increasingly more users will become their own creators and disseminators, drawing on the rich variety of resources available on-line, the technologies to create and compose, and the power of networks to disseminate new contributions to the public.

Realizing the full and, at present, unknown potential of information technologies requires that the law guarantee both access and the incentive to create and disseminate expression and ideas worth accessing. As technological growth makes the "celestial jukebox" a reality, copyright law increasingly appears inadequate for this critical task. Given the extraordinary technological innovations that are changing the world in which copyright law operates, mere amendments or interpretations to the current law may not be sufficient. A serious commitment to the constitutional purpose and limits of copyright law, in the face of extraordinary changes in both markets and technologies, is likely to necessitate a thorough revision of the entire law, not just the amendment of several of its terms. Congress and the Administration must not be so wedded to the status quo, and preoccupied with the interests of present stakeholders, that their efforts to keep the old boat floating amount to no more than, in John Barlow's words, "a frenzy of deckchair rearrangement, stern warnings to the passengers that if she goes down, they will face harsh criminal penalties, and serene, glassy-eyed denial."[311]

The revision or amendment of copyright law to control the technological rewriting of copyright law is vitally important, because it is essential to serving the law's constitutional purpose. But in the face of explosive change in technologies and the ways in which creators, users, and markets are coping with those technologies, it is only a beginning.

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311. John P. Barlow, The Economy of Ideas, Wired, Mar. 1994, at 126.

CONCLUSION

Copyright law offers extensive protection for expression, but absolutely no protection for facts or ideas. Even expression, once the copyright holder has placed it in the market, may be read, viewed, heard, and performed or displayed privately. Furthermore, users may distribute the physical form in which the copyright owner originally disseminates her expression. The copyright law grants the copyright holder no rights to deter these activities, because it is to promote these activities that the Copyright Clause empowers Congress to enact copyright statutes in the first place.

Digital technologies are rapidly changing the application of copyright law to prohibit access, protect ideas and facts, and dramatically expand the monopoly granted to copyright holders. Whether on a disk or network, digital expression cannot be accessed without being copied into RAM or onto a hard drive, floppy disk, or printer. This violates the exclusive right to reproduce granted to copyright holders. Moreover, to read or otherwise view digital expression on a computer screen, or to listen to it through computer speakers, users must display or perform the digital work within the meaning of copyright law. If digital expression is downloaded from a computer network, the display or performance is public, therefore violating the copyright holder's exclusive rights to public display and performance of her copyrighted work.

As a result, copyright law grants the owners of copyrights in digital works the power to prevent access to their digital expression. This is a dramatic extension of the copyright holder's rights in nondigital contexts where expression in the market may be read or seen or heard without the copyright holder's permission. But of even greater significance is the fact that the copyright holder may deny public access to the facts or ideas contained within that expression, not just the expression itself, because there is no way to obtain those facts and ideas in digital format without copying and publicly displaying or performing the expression as well.

To date, Congress, the Clinton Administration, and the courts have not responded effectively to this technological transformation. In fact, the Administration's Working Group on Intellectual Property has recommended that Congress amend the copyright law to codify the prohibition on accessing digital works.[312] Guaranteeing that the copyright law serves its purpose of providing an incentive for creation and dissemination, while staying within its bounds of protecting original expression only, no matter what the technological context, is the constitutional duty of courts, the legislature, and the executive. Congress appears unlikely to act in the absence of a broad-based compromise among the politically powerful information supplier and information user communities and in the face of

312. IITF Report, supra note 98, at 217-30.

Administration opposition. Therefore, as often happens with integrating new technologies into the fabric of copyright law, the most likely source of meaningful redress is the courts. The preferable action for courts is to interpret fair use to restrict the ability of copyright holders to block the public's access to the facts and ideas found within copyrighted expression.

Irrespective of the specific steps taken to return present copyright law to its constitutional confines, extraordinary changes in both technology and the markets through which new works are created and disseminated demand a more thorough revision of copyright law. That revision must tailor copyright law to serve its vital constitutional purpose: to "promote the Progress of Science and useful Arts" for everyone.