

CYBERTHEFT: WILL COPYRIGHT LAW PREVENT DIGITAL TYRANNY ON THE SUPERHIGHWAY?

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I. Introduction

The National Information Infrastructure ("NII"), also referred to as the "Information Superhighway," is intended to be a universally accessible, logical, and physical infrastructure for transporting voice, video, and data across the U.S. and around the world. The concept of a Superhighway is consistent with other infrastructures in the United States: the interstate highway system, the railroad system, the telephone systems, TV and radio networks, municipal water and sewer systems, and electrical power systems, to name a few. Just as a turn of a faucet produces water or a flip of a switch produces light, the flip of a computer switch will provide those connected to the Superhighway instant access to information and to other people.

A. The Good News

The Superhighway will revolutionize the way people relate to each other by enabling them to work together, collaborate, and access and generate information without regard to geographical boundaries.

"A student should be able to put in a single request for, say, information on the assassination of John F. Kennedy and receive a video of the shooting, a map of the final route JFK took through Dallas, text from newspapers, magazines, and books about the event, photos of Lee Harvey Oswald, and so on--all from dozens of sources around the Internet."

"A doctor in Carthage, Tennessee, could consult with experts at the Mayo Clinic in Minnesota on a patient's CAT scan in the middle of an emergency. Teams of scientists and engineers working on the same problem in different geographic locations could work together in a co-laboratory if their supercomputers were linked."

The amount of data is virtually unlimited, its accessibility is unending, and, because it is digital, it can be reproduced time and time again with no degradation.

B. The Bad News

Newspaper articles report the dark side of cyberspace and presages what could happen in the coming digital age:

"Software Pirates Hunted" - *Charlotte Observer*

"Highway Robbery - Information Highwaymen" - *USA Today*

Pirates sail the Internet, trading bootleg software" -
Los Angeles Times

Although the economic impact of these pirates is hard to measure, it is immense. Electronic theft via the Superhighway and other on-line services accounts for about one-third of the \$2.2 billion lost in the United States last year as a result of electronic piracy, according to the Business Software Alliance. The bad news gets worse. Pirates who then use the stolen software to mass produce CD-ROM and floppy disks pose a much greater problem.

As a result of this lawlessness, many leaders in the electronics and information industries are slow to embrace the Superhighway. Just as they refused to market their products in foreign countries that would not respect their intellectual property rights, they wisely refuse to voluntarily subject themselves to the same abuse by domestic thieves. But, fear not, help is on the way.

C. Cyberspace Solutions - Multimedia Rights

The Information Infrastructure Task Force has recommended revisions, not a major rewrite, of the copyright law to protect the information offered by authors and providers. Information ownership comprises the following rights:

- 1) the right to use the information in secrecy;
- 2) the right to disclose information to others or to refuse to do so;
- 3) the right to reproduce the information in tangible copies;
- 4) the right to exploit information for one's commercial benefit, and prevent others from doing so;
- 5) the right to regulate the access of others to information; and
- 6) the right to protect the integrity of information from unauthorized alteration or destruction.

The protection of these rights arises in different areas of law, including intellectual property law, communications law, criminal law, and tort law. Copyright law plays a major role, but what rights are affected if a work is merely transmitted and not fixed or displayed? More importantly, what incentives or remedies exist to discourage unauthorized transmissions?

II. Copyright Law and the Superhighway

The role copyright law should play in protecting works on the Superhighway has taken center stage. Most agree that some form of additional protection of the rights of authors is essential if information of any value is expected to become available on the Superhighway. In one camp are those who claim copyright law is no longer a viable choice for protecting the rights of authors in the digital age. In a different camp are those who believe that copyright law is flexible enough to accommodate any and all technological advances in how ideas are expressed, and thus quite capable of protecting the rights of authors whose works appear in digital form.

The Federal Government is in the latter camp. The HPC Act of 1991 requires the National Research and Education Network (NREN) to "be designed and operated so as to ensure the continued application of laws that provide network and information resources security measures, including those that protect copyright and other intellectual property rights. . . ." The Clinton Administration established a Working Group to examine the intellectual property implications of the Superhighway. Chaired by the Commissioner of the Patent and Trademark Office, Bruce Lehman, the Working Group issued a preliminary draft of its findings in July, 1994. The Working Group does not recommend a major overhaul of the copyright laws, only minor adjustments to expand the distribution rights and enhance the remedies available.

The question of whether copyright law is up to the task of protecting digital works on the Superhighway is really not a new one at all. The emergence of every new medium of expression, including radio, television, photography, motion pictures, photocopying, computer programs, etc., raised apprehensions about the adequacy of copyright law. Yet, in each case, copyright law proved to be flexible and capable of adapting and changing to protect the forms of expression. In enacting the Copyright Act of 1976, Congress acknowledged that the "history of copyright law has been one of gradual expansion in the types of works accorded protection." The intent of Congress to ensure that copyright law remains flexible and adaptable to new technology is without doubt. "Copyright protection subsists, . . . in original works of authorship fixed in any tangible medium of expression, now known or later developed, from which they can be perceived, reproduced, or otherwise communicated, either directly or with the aid of a machine or device." Thus, copyright rights come into being as soon as a work of authorship is fixed in any tangible

medium - although registration is strongly recommended, it is no longer a prerequisite.

In light of the history of the federal copyright laws, why is there so much controversy surrounding copyright protection on the Superhighway? The answer, of course, is digital technology. Once a work, whether text, image, video, or sound, is digitized, it can be stored, modified, and reproduced easily and quickly. In addition, each reproduction of a digital work is virtually indistinguishable in quality from the original. Consequently, the first generation and two hundredth generation of a digital work are essentially the same, and of the same high quality.

The debate concerning the viability of copyright law is understandable in light of the capability of the Superhighway to deliver perfect copies of copyrighted material to millions of users in time frames measured by fractions of seconds. Bulletin board access via the Superhighway will allow a copyrighted work to be uploaded and then downloaded by millions of users who can print or reproduce unlimited copies in both print and digital form. It is feared that the ease by which a protected work can be reproduced and modified may be construed as the right to copy and modify with impunity.

A. Purpose of Copyright Law

Federal copyright protection is authorized by the Constitution: "The Congress shall have power . . . To promote the Progress of Science and the useful Arts, by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries." The current copyright laws, as promulgated by Congress in the Copyright Act of 1976, are codified at 17 U.S.C. §101 et seq.

The fundamental purpose of the constitutional grant of copyright is to encourage individuals to produce and disseminate creative works. This is done by providing authors with exclusive rights to their works as an incentive to make their works available to the public. Encouragement of individual effort by personal gain is the best way to advance public welfare through talents of authors and inventors in "science and useful arts." At odds in this "quid pro quo" arrangement are the competing interests of the public and the copyright owner: protecting the exclusivity of the copyright owner while allowing users to access and use the copyrighted works. Because the Superhighway will be capable of moving tremendous amounts of data at very high speeds, the potential for significant infringement of copyright is high. Unless owners have confidence that their works will be protected, they will be reluctant to allow their works on the Superhighway.

B. Works Protected by Federal Copyright Law

1. Originality

Copyright protection arises automatically "in original works of authorship fixed in any tangible medium of expression, now known or later developed, from which they can be perceived, reproduced, or otherwise communicated, either directly or with the aid of a machine or device."

The statutory list of works eligible for copyright protection presently includes:

- 1) literary works;
- 2) musical works, including any accompanying words;
- 3) dramatic works, including any accompanying music;
- 4) pantomimes and choreographic works;
- 5) pictorial, graphic, and sculptural works;
- 6) motion pictures and other audiovisual works;
- 7) sound recordings; and
- 8) architectural works.

The definition of "literary works" in §101 includes expression represented in digitized format. Text, sounds, images, video, and data can all be represented in digital format for use in a computer.

2. Fixed In A Tangible Medium

A work is fixed in a tangible medium of expression when its embodiment in a copy or phonorecord is sufficiently permanent or stable to permit it to be perceived, reproduced, or otherwise communicated for a period of more than transitory duration. Examples of works fixed in a tangible medium include: a novel written in manuscript form; a tune reduced to sheet music; a sculpture; a work on audiotape, record or compact disc; software on disk, ROM chip, or tape; and the broadcast of any live performance that is simultaneously recorded with the broadcast. Floppy disks, hard disks, compact disks, and tape are tangible mediums of expression within the meaning of §102(a). Even works that reside in RAM only momentarily are considered sufficiently fixed. Even interactive works are protected under Federal copyright law if they satisfy the originality requirement because they are considered sufficiently fixed even though the sequence of the action can be altered by the user. However, the electronic impulses making up a data stream on the Superhighway do not fall within the definition of a copyrightable work, even though they may represent a copyrightable work, because the impulses themselves are not fixed during transmission on a network.

3. Compilations and Derivative Works

Compilations and derivative works are also protected by copyright law. A compilation is defined as "a work formed by the collection and assembling of preexisting materials or of data that are selected, coordinated, or arranged in such a way that the resulting work as a whole constitutes an original work of authorship." One type of compilation, a computer database, will be encountered frequently on the Superhighway.

In *Feist Publications, Inc. v. Rural Telephone Service Co., Inc.*, the Supreme Court held that a telephone directory consisting of an alphabetical listing of telephone subscribers' names, addresses, and telephone numbers was not protectable under copyright law. The Court rejected the "sweat of the brow" theory that had evolved to protect those who were industrious in their collection of factual material. The Supreme Court said the "sweat of the brow" doctrine was in direct opposition to two fundamental copyright axioms: 1) the purpose of copyright is not to reward authors, but to increase the wealth of knowledge of society and; 2) that no one may copyright facts or ideas.

The telephone directory lacked originality because the manner of selecting and presenting names, addresses and phone numbers, did not have the necessary "modicum of creativity" since the choices and arrangement were "mechanical," "garden-variety," "typical," and "obvious." The alphabetized list followed "an age-old practice, firmly rooted in tradition," one "so commonplace that it has come to be expected as a matter of course," or as "practically inevitable." As a result, copyright does not protect against the use of data from a database unless the data is itself protectable or unless the data is arranged in an original format.

The *Feist* decision does not bode well for those trying to encourage owners of fact-based databases to make their works available on the Superhighway. Not only may the contents of many databases be unprotectable under copyright law, but also the selection and arrangements may be unprotectable as well, if found to be mechanical and routine. Furthermore, because of its very nature, a computer database may have no arrangement to protect. Since the data within a database exists in binary format, both invisible and unintelligible without search and retrieval software, arguments that there is sufficient originality in the arrangement of the data may be meaningless.

One possible solution to the unavailability of copyright protection for digital databases may lie in the ability of the Superhighway to provide high-speed transmission of images as well as text. Current communications technology limits the presentation of on-line textual material to simple formats and arrangements. The ability to present fact-intensive databases in creative, original formats with the help of high-speed graphics technology may provide a basis for copyright protection. However, any copyright protection would likely be limited to the screen display of the information, not to the underlying data. Another possible solution is to arrange the database information in a manner that requires a proprietary software program to access it. Thus if one cannot protect the data *per se*, at

least they can control who has the keys to unlock it.

A different solution may lie with *sui generis* protection or some form of non-copyright statutory protection for computer databases. For example, in Europe, protection for the contents of databases otherwise unprotectable by copyright law has been proposed. Based on the concept of misappropriation, the contents of databases are protected from unauthorized extraction and use by others for commercial purposes.

The extraction right creates a new form of "copy" right. The prohibited acts focus on extraction and re-utilization of extracted data not conditioned on the expression in the extracted contents or even on the amount of sweat and effort devoted to compiling the material. Protection comes from a more direct source. The location of the database content and its value. Data in a database should be protected against appropriation. The technology makes extraction simple and piracy a potential problem. The property right establishes that one is entitled to protection [of] the fruits of one's own labor as against one who seeks to appropriate those products. It prevents information piracy.

However, the Supreme Court's decision in *Feist* may have precluded this possibility as well. Because the originality requirement of copyright is derived from the copyright clause in the Constitution, Congress might not have the authority to enact statutory protection.

Yet another possible means for protecting the content of databases may come from contract law, and the use of on-line licenses. An on-line license requires first-time users to read and "sign" an electronic contract projected on their computer screens before obtaining access. Because users assent to the terms of an on-line license prior to purchasing or using a database or service, the problems of adhesion contracts, commonly associated with "shrink-wrap" licenses, are avoided.

C. The Exclusive Rights of Copyright

Subject to the limitations contained within 17 U.S.C. §§107-120, the owner of a copyright has the exclusive right to do and to authorize any of the following:

- 1) To reproduce the copyrighted work in copies or phonorecords;
- 2) To prepare derivative works based upon the copyrighted work;
- 3) To distribute copies or phonorecords of the copyrighted work to the public by sale or other transfer of ownership, or by rental, lease, or lending;
- 4) In the case of literary, musical, dramatic, and choreographic works, pantomimes, and motion pictures and other audiovisual works, to perform the copyrighted work publicly; and
- 5) In the case of 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, to display the copyrighted work publicly.

Each of these rights can be independently licensed, assigned, sold, or given away, in whole or in part, just like other property rights, and on an exclusive or non-exclusive basis. For example, the copyright owner of a novel may grant to a particular theater a non-exclusive license to perform his work as a play. However, the author retains his performance rights with respect to other performers and theaters, and he retains his other exclusive rights, as well.

D. Publication and Notice

Publication is defined as the distribution of copies of a work to the public by sale or other transfer of ownership, or by rental, lease or lending. This definition indicates that performances or displays where a copy or phonorecord does not change hands, such as performances or displays on television, does not constitute a publication, no matter how many people are exposed to the work. On the other hand, the definition makes clear that

when copies or phonorecords are offered to a group of people, publication takes place if the purpose of making the copyrighted work available is to further distribute, publicly perform or display. Thus, unless otherwise published, a work only displayed or performed on the Superhighway would not comprise a publication. However, uploading a copy on a bulletin board may constitute a publication if it is being made available for others to download. This would appear to satisfy the distribution requirement.

Copyright notice is optional for works created after March 1, 1989. However, whenever a copyrighted work is published in the United States or elsewhere by authority of the copyright owner, a notice of copyright may be placed on publicly distributed copies. Works published before March 1, 1989, must bear a copyright notice identifying the year of publication and the name of the copyright owner or risk loss of copyright protection.

These notice rules apply to digital works on the Superhighway as well as to works embodied in traditional media. The Copyright Office has issued guidelines for properly attaching copyright notice to digital works:

For works reproduced in machine-readable copies (such as magnetic tapes or disks, punched cards, or the like, from which the work cannot ordinarily be visually perceived except with the aid of a machine or device, each of the following constitute examples of acceptable methods of affixation and position of notice:

- (1) A notice embodied in the copies in machine-readable form in such a manner that on visually perceptible printouts it appears either with or near the title, or at the end of the work;
- (2) A notice that is displayed at the user's terminal at sign on;...

E. Copyright Ownership and Duration

Initial copyright ownership vests in the author or authors of an original work the moment the work is fixed in a tangible medium of expression. A "joint work" is defined as "a work prepared by two or more authors with the intention that their contributions be merged into inseparable or interdependent parts of a unitary whole." Authors of a joint work are "tenants-in-common", each owning an equal share of the copyright in the work, unless a written agreement provides otherwise. A joint owner may freely use the work or commercially exploit it without the consent of the other co-owners, but must account to the co-owners for any profits resulting from the exploitation.

If a work is "for hire," the employer or other person for whom the work was prepared is considered the author and the owner of the copyright, unless there is a written agreement to the contrary. However, an independent contractor owns the copyright in a work created for the hiring party. The principles of the common law of agency are used to determine whether the work was prepared by an employee or by an independent contractor.

Copyright ownership is different from ownership of the tangible medium in which the work is embodied. Transfer of the tangible medium does not convey any rights in the copyright embodied therein. For example, a person purchasing a book from a bookstore does not acquire from the purchase any of the copyright owner's exclusive rights. Similarly, the transfer of works across the Superhighway will not convey any exclusive rights of the copyright owner.

F. Copyright Infringement

1. The Exclusive Rights

Copyright infringement occurs when any of the copyright owner's exclusive rights have been violated. To establish copyright infringement, the plaintiff must show ownership of a valid copyright and "copying" by the defendant. "Courts generally use the term 'copying' as shorthand for a violation of any of the exclusive rights of the copyright owner (not just the reproduction right)."

The plaintiff may prove the defendant's "copying" either by direct evidence (i.e., either admission of copying by defendant or by testimony of a witness to the infringing act) or, as is most often the case, by indirect evidence through a showing of both of the following:

- 1) The defendant had access to the plaintiff's copyrighted work and;
- 2) The defendant's work is substantially similar to the plaintiff's copyrightable material and one of the exclusive rights of the copyright owner is implicated.

Because of the very nature of the Superhighway, access should not prove difficult to establish against users. Furthermore, it does not matter that users may be unaware of their infringing acts because intent or knowledge are not needed to find copyright infringement.

a) Exclusive Right To Copy

The end result of 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. Infringement will also occur when a copy of a copy is made. This subsequent copying presents a problem from an enforcement standpoint. Procedures and mechanisms may be able to adequately control initial copying from a protected work; however, what happens to the copy is beyond the ability of the copyright owner to monitor. Nonetheless, unauthorized copying is an infringement.

The exclusive right to copy is not limited to strictly literal copying, else a plagiarist would escape by immaterial variations. Therefore, copyright protection extends beyond a literary work's strictly textual form to its non-literal components. Where the fundamental essence or structure of one work is duplicated in another, courts have found copyright infringement. For example, in *Stewart v. Abend*, the Supreme Court recognized that a motion picture may infringe the copyright in a book by using its unique setting, characters, plot, and sequence of events. It is immaterial that a defendant does not copy other parts of a plaintiff's work if substantial similarity can be established with respect to a substantial element of plaintiff's work.

b) Exclusive Right to Prepare Derivative Works

The exclusive right to prepare derivative works will also be important protection for many works on the Superhighway. By definition, digitized works are derivative works of preexisting works. For example, the colorization of old black and white movies, the scanning of text and images into digital format, and the conversion of analog recordings into digital recordings are all derivative works based on prior copyrighted or public domain material. Multimedia works, by definition, comprise expression from various media, which can be new or preexisting.

Interactive technologies allow users to modify copyrighted works to the point where the end result is no longer substantially similar to the original copyrighted work. It may be questionable whether such modification constitutes infringement, but it is clear that the initial copying of the copyrighted work into the user's computer is a violation of the reproduction right. The case law does not establish whether the ultimate derivative work must be substantially similar to the original work to be an infringement, but the principles of fair use will apply.

c) Exclusive Right to Distribute

Another of the copyright owner's exclusive rights is the right "to distribute copies or phonorecords of the copyrighted work to the public by sale or other transfer of ownership, or by rental, lease, or lending." "Copies and phonorecords" are collectively defined to be material objects in which copyrightable works are fixed by any method now known or later developed.

A limitation on the copyright owner's exclusive right of distribution is known as the "first

sale doctrine." Under this doctrine, the owner of a lawfully made copy or phonorecord may sell or otherwise dispose of that tangible copy or phonorecord without the copyright owner's permission. Once the copyright owner consents to the sale of particular tangible copies or phonorecords of his work, he may not thereafter seek to exercise the exclusive right of distribution with respect to those particular tangible copies or phonorecords. For example, a library which has acquired ownership of a copy of a book is entitled to lend it under any conditions it chooses to impose without violating the copyright owner's distribution rights. However, the right to prohibit copying still remains intact.

One issue that has been raised is whether the transmission of a work over the Superhighway will constitute a distribution, a reproduction, or both. When an electronic file is copied, the original from which the copy is generated is not typically erased. Thus, the copy is transmitted, or published to another, without giving up possession of the original. This gives the possessor of a digital copy the "copyright equivalent of a license to print money" under the first sale doctrine. Furthermore, a work uploaded (i.e., copied) onto a bulletin board is done so for the purpose of others downloading (i.e., copying) the work. If a user downloaded a particular work and did not leave a copy on the bulletin board, there would be nothing for other users to download. This would fit the rationale of the first sale doctrine, but defeat the purpose of the bulletin board. Moreover, when a copyrighted work located on a bulletin board is downloaded by a user, it is not clear whether the copyrighted work is distributed by the bulletin board operator or only reproduced by the user. Thus, there is a major concern that a copyright owner's exclusive right to distribute will not be protected as works travel the Superhighway. For this reason, it has been proposed that the Copyright Act be amended so that the first sale doctrine does not apply to the "sale or other disposal of the possession of [a] copy or phonorecord by transmission."

The importation of illegal copies or copies legally produced overseas for foreign distribution, but not authorized for distribution in the U.S., is an infringement of the copyright owner's distribution right. With respect to the Superhighway, the transmission of copyrighted works through international communications lines may not constitute an importation under §602(a) because no physical copies or phonorecords are being imported. The amendments to the copyright law proposed in the Working Group's Preliminary Draft do not address this problem, because of international treaties, like the Berne Convention, that prohibit the creation of more extensive rights by one country than those created by the Convention.

d) Exclusive Right to Perform

Section 106(4) provides that, in the case of literary, musical, dramatic, and choreographic works, pantomimes, and motion pictures and other audiovisual works, the copyright owner has the exclusive right to perform the work publicly. Excluded from the performance right are pictorial, graphic and sculptural works, and sound recordings.

Only public performances infringe the copyright owner's performance right. A work is performed publicly if it is performed at a place open to the public or at any place where a substantial number of persons outside of a normal circle of family and its social acquaintances is gathered. However, the number of people actually present is not controlling because a performance is considered public if a substantial number of people can potentially see or hear the performance. In *Command Video Corporation v. Columbia Pictures Industries*, a video display system transmitted movies to individual hotel rooms. The hotel's video display system consisted of television receivers in each individual hotel room, and devices to transmit a particular movie to a guest's room. The court held that this was a public performance, even though the hotel rooms were not considered to be public places. Consequently, if a qualifying work is transmitted such that individual users on the Superhighway can see or hear it, a public performance has likely occurred.

e) Exclusive Right to Display

"To 'display' a work means to show a copy of it, either directly or by means of a film, slide, television image, or any other device or process or, in the case of a motion picture or other audiovisual work, to show individual images nonsequentially." The display right

includes 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." The display right also precludes unauthorized transmission of the display from one place to another by a computer system.

As with the performance right, an unauthorized display is not an infringement unless it is done publicly. However, because a transmission to a network user that enables that user to see or hear a work is considered public, a public display occurs every time a user browses a copyrighted work on the Superhighway. Consequently, the display right may be the broadest of all the exclusive rights in the context of the Superhighway, because a majority of uses would constitute a public display.

2. Civil Remedies For Copyright Infringement

Remedies for copyright infringement include injunctive relief, impoundment and destruction of copies, damages and profits, statutory damages, costs and attorney fees. The copyright owner may elect to recover either actual damages and any profits of the infringer that are attributable to the infringement, or statutory damages. The amount of statutory damages per infringement shall not be less than \$500 or more than \$20,000. For each infringement which the copyright holder can prove was willful, the statutory damages may be as much as \$100,000 per infringement. If the court finds that the infringer was not aware that his acts constituted copyright infringement, the court has the discretion to reduce statutory damages to \$200 per infringed work. The court may waive statutory damages under certain circumstances if an infringer was reasonable in believing that the infringement constituted fair use.

3. Criminal Penalties For Infringement

One who infringes willfully and for commercial advantage or private financial gain may also be punished under 18 U.S.C. §2319(b), and all infringing copies or phonorecords may be seized and destroyed. However, conviction for willful infringement does not require that the defendant actually realize either a commercial advantage or private financial gain. The maximum penalty is 5 years in prison and \$250,000 per individual or \$500,000 per organization, where the activity lasted for more than 180 days and involved at least 10 unlawful copies with a total value of at least \$2,500. For lesser amounts, the crime is a misdemeanor with lesser penalties. The maximum term of imprisonment for repeat offenders is 10 years. Anyone who fraudulently removes or alters a copyright notice appearing on a copy of a copyrighted work shall be fined not more than \$2,500.

Criminal copyright infringement actions may play an important role in the protection of works on the Superhighway. One advantage is that criminal actions are typically brought to court and resolved quicker than civil cases, resulting in time and money savings for the copyright owner. Other advantages include the stigma attached with criminal actions, which gets the infringer's attention better than a civil lawsuit. Furthermore, in a criminal action, the infringing activity will likely cease quicker than in a civil action. The biggest drawback to instituting a criminal action may be in trying to interest a Federal prosecutor to try the case.

A student at the Massachusetts Institute of Technology was recently indicted under federal software piracy laws for permitting copyrighted software owned by another to be freely copied from a bulletin board he operated on the Internet. The indictment alleged that the student engaged in a conspiracy that involved disseminating the bulletin board's address on the Internet and letting others avail themselves of the opportunity to impermissibly copy the copyrighted works.

G. Vicarious And Contributory Infringement

Anyone who profits from the infringing acts of another, and who has the right and ability to supervise an infringer, will be vicariously liable. Consequently, ignorance of an infringer's conduct is not a defense. All that is needed is a connection to the infringer, not to the infringing activity. For example, a department store chain that leased space in twenty-three of its stores to a phonograph record "concessionaire" was held liable for the concessionaire's sale of "bootleg" records even though the department store-lessor was

unaware of the infringing activity. The court found that the department store obtained a 10% or more share of each sale made by the concessionaire. In another case, the owners of a radio station had sufficient direct financial interest in the infringing activities of others who purchased "air time" and played copyrighted music without permission. A party can be a contributory infringer under two different scenarios. First, anyone who knowingly induces, causes, or materially contributes to the infringing conduct of another may be liable as a contributory infringer. Merely making a photocopier available to a person that one has reason to know is violating the copyright law would constitute a material contribution to infringing conduct and trigger liability. Second, anyone who provides another person with the means to infringe knowing that the person intends to infringe will be liable. Therefore, a librarian who allows a patron to check out a copyrighted work knowing of the patron's intention to illegally reproduce the work may be found guilty of contributory infringement.

In *Sega Enterprises Ltd. v. MAPHIA*, a bulletin board operator was enjoined from uploading and downloading copyrighted computer game software on the grounds that such actions constituted direct infringement of the plaintiff's exclusive right to copy. The court said that the bulletin board operator could also be liable for contributory copyright infringement. "Even if Defendants do not know exactly what 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." It is likely that operators of bulletin boards will continue to be held liable for infringement regardless of participation in or knowledge of the infringing activities.

III. Technological Assistance And Legislative Changes

Congress and the Clinton Administration have taken the stance that existing copyright law, with a few minor adjustments, is sufficiently able to protect the interests of copyright owners whose works travel the Superhighway. However, both branches recognize the need for technological assistance in the enforcement of the copyright laws. "The ease of infringement and the difficulty of detection and enforcement will cause copyright owners to look to technology, as well as the law, for protection of their works."

Various mechanisms can be embedded within digital works to ensure copyright compliance, and inhibit unlawful copying, such as:

- 1) Digital signatures to certify that material received over the Superhighway is a bona fide copy of the original.
- 2) Copy counters to restrict the number of copies made from a particular copy, either by duplication or by printer.
- 3) Sealed envelopes containing copyrighted works, the outside of which includes various information about the contents, such as author, title of the work, abstract, keywords, digital signature, and copyright status.
- 4) Encryption algorithms that shield data streams from outside detection by scrambling the data.

The Clinton Administration's Working Group on Intellectual Property Rights recommends that transmission be an exception to the first sale doctrine, and that a new section (§512) be added to Title 17 to prohibit the importation, manufacture and distribution of devices, as well as the provision of services, that defeat anti-copying systems. Because technology can be used to defeat anti-copying devices, the law must provide means for protecting these devices. Similar legislation exists for digital audio recording devices and decryption devices for satellite cable programming. The Working Group also recommends the following:

- 1) Amending 17 U.S.C. §501 to include, as a copyright infringer, anyone who violates proposed §512.

2) Amending §503 and §506 to allow the impoundment and destruction of devices used in an infringement.

3) Amending §506 to include prohibitions against fraudulent removal of copyright information embedded within digital works.

The use of technological means for enforcing the copyright laws raises the familiar issue of balancing the rights of the copyright owner with the welfare of society as a whole.

Intellectual property, encrypted and locked behind electronic meters, is no longer a catalyst for creativity. Instead, it is a crown jewel for a society whose imagination is starved, available for viewing only with the proper economic key. We are opposed to any reduction in the rights of the public to use information because its form or format has changed. Access is defined by intellectual parameters, not by economic and technological ones.

Special concern has been voiced concerning the ability of society to continue to browse the contents of libraries as they evolve into entities without walls. The use of encryption and access metering could seriously impair the ability of society to have access to vital sources of information. However, unless legislation is provided to limit liability of those operating Superhighway networks, there may not be any information flowing on the Superhighway unless technical means for ensuring compliance are provided.

IV. Conclusion

The Copyright Law has shown remarkable resilience over the years. Its flexibility has accommodated technological advances while balancing the Constitutional directive of protecting authors and promoting the arts. The ability to copy began with the quill pen and candle, and has advanced through printing presses, photocopiers, and digital data. Federal copyright law has evolved with technology, and it appears that only selected changes will be needed, rather than a major overhaul.