

**INTELLECTUAL PROPERTY
AND THE
NATIONAL INFORMATION
INFRASTRUCTURE**

THE REPORT OF THE WORKING GROUP ON
INTELLECTUAL PROPERTY RIGHTS

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Assistant Secretary of Commerce and
Commissioner of Patents and Trademarks
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SEPTEMBER 1995

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"Intellectual Property and the NII"
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TABLE OF CONTENTS

INTRODUCTION.....	1
BACKGROUND.....	7
I. LAW.....	19
A. COPYRIGHT.....	19
1. <i>Purpose of Copyright Law</i>	19
2. <i>Subject Matter and Scope of Protection</i>	23
a. Eligibility for Protection	23
b. Published and Unpublished Works	28
c. Works Not Protected	32
d. Categories of Protectible Works.....	35
3. <i>Copyright Ownership</i>	45
a. Transfer of Ownership.....	47
b. Licensing.....	49
c. On-Line Transactions	53
4. <i>Term of Protection</i>	59
5. <i>Notice, Deposit and Registration</i>	60
6. <i>Exclusive Rights</i>	63
a. The Right to Reproduce the Work.....	64
b. The Right to Prepare Derivative Works	66
c. The Right to Distribute Copies.....	67
d. The Right to Perform the Work Publicly.....	70
e. The Right to Display the Work Publicly.....	72
7. <i>Limitations on Exclusive Rights</i>	73
a. Fair Use.....	73
b. Library Exemptions.....	84
c. First Sale Doctrine	90
d. Educational Use Exemptions.....	95
e. Other Limitations	96
8. <i>Copyright Infringement</i>	100
a. General.....	100
b. Infringing Importation	107
c. Contributory and Vicarious Liability	109
d. On-Line Service Provider Liability	114
e. Civil Remedies.....	124
f. Criminal Offenses.....	126
g. Defenses	128
9. <i>International Implications</i>	130
a. Background	130
b. International Framework	132
c. International Treaties and Agreements	135
d. Copyright Compared to Authors' Rights	139

e. National Treatment.....	140
f. Private Copying Royalty Systems	144
g. Moral Rights.....	145
h. Conflict of Laws.....	147
i. Harmonization of International Systems	147
B. PATENT.....	155
1. Patentability Determinations.....	162
2. Infringement Determinations	165
3. Patentability of Software	166
C. TRADEMARK	168
D. TRADE SECRET.....	173
II. TECHNOLOGY.....	177
A. CONTENT SECURITY AND USER ACCESS NEEDS.....	178
B. THE INTERNET EXPERIENCE	179
C. ACCESS AND USE TECHNOLOGICAL CONTROLS.....	183
1. Server and File Level Controls.....	183
2. Encryption	185
3. Digital Signatures	187
4. Steganography	188
D. CONTROLLING USE OF PROTECTED WORKS	189
E. MANAGING RIGHTS IN PROTECTED WORKS.....	191
F. ENCRYPTION EXPORT CONTROL.....	194
G. DEVELOPMENT OF STANDARDS.....	197
III. EDUCATION	201
A. BACKGROUND.....	201
B. COPYRIGHT AWARENESS CAMPAIGN.....	203
IV. RECOMMENDATIONS.....	211
A. COPYRIGHT.....	211
1. The Transmission of Copies and Phonorecords.....	213
a. The Distribution Right.....	213
b. Related Definitional Amendments	217
c. The Importation Provisions	221
2. Public Performance Right for Sound Recordings	221
3. Library Exemptions.....	225
4. Reproduction for the Visually Impaired	227
5. Criminal Offenses.....	228
6. Technological Protection	230
7. Copyright Management Information.....	235
B. PATENT.....	236
C. TRADEMARK	237
APPENDICES	

INTRODUCTION

In February 1993, President Clinton formed the Information Infrastructure Task Force (IITF) to articulate and implement the Administration's vision for the National Information Infrastructure (NII). The IITF is chaired by Secretary of Commerce Ronald H. Brown and consists of high-level representatives of the Federal agencies that play a role in advancing the development and application of information technologies. Guided by the principles for government action described in *NII Agenda for Action*¹ and *GII Agenda for Cooperation*,² the participating agencies are working with the private sector, public interest groups, Congress, and State and local governments to develop comprehensive telecommunications and information policies and programs that will promote the development of the NII and best meet the country's needs.

To drive these efforts, the IITF is organized into three committees: the Telecommunications Policy Committee, which formulates Administration positions on relevant telecommunications issues; the Committee on Applications and Technology, which coordinates Administration efforts to develop, demonstrate and promote applications of information technologies in key areas; and the Information Policy Committee, which addresses critical information policy issues that must be dealt with if the NII is to be fully deployed and utilized. In addition, the IITF established a Security Issues Forum to assess the security needs and concerns of users, service providers, information providers, State and local governments and others. Finally, the U.S. Advisory Council on the National Information

¹ Information Infrastructure Task Force, National Telecommunications and Information Administration, *National Information Infrastructure: Agenda for Action* (Sept. 1993).

² Information Infrastructure Task Force, *Global Information Infrastructure: Agenda for Cooperation* (Feb. 1995).

Infrastructure (NII Advisory Council) was established within the Department of Commerce to advise the Secretary of Commerce on a national strategy for promoting the development of the NII.³

The Working Group on Intellectual Property Rights, which is chaired by Assistant Secretary of Commerce and Commissioner of Patents and Trademarks Bruce A. Lehman, was established within the Information Policy Committee to examine the intellectual property implications of the NII and make recommendations on any appropriate changes to U.S. intellectual property law and policy.⁴

This Report represents the Working Group's examination and analysis of each of the major areas of intellectual property law, focusing primarily on copyright law and its application and effectiveness in the context of the NII.⁵ The approach of this Report is to discuss the application of the existing copyright law and to recommend only those changes that are essential to adapt the law to the needs of the global information society.⁶ By providing a

³ See Exec. Order No. 12,864, 3 C.F.R. 634 (1993).

⁴ In the course of its work, the Working Group identified issues in other areas of jurisprudence, such as defamation and obscenity, which will be considered separately by the Information Policy Committee.

⁵ The "National Information Infrastructure," as it is discussed in this Report, encompasses digital, interactive services now available, such as the Internet, as well as those contemplated for the future. To make the analyses more concrete, however, the Working Group has, in many instances, evaluated the intellectual property implications of activity on the Internet, the superstructure whose protocols and rules effectively create (or permit the creation of) a "network of networks." This reflects neither an endorsement of the Internet nor a derogation of any other existing or proposed network or service that may be available via the NII, but, rather, an acknowledgment that a currently functioning structure lends itself more readily to legal analysis than a hypothetical construct based on future developments.

⁶ Because of the legal nature of the subject, this Report uses certain words and phrases that may be unfamiliar to some readers or that do not have their ordinary meaning when used in the context of intellectual property law. The

generalized legal framework, based on the extensive analysis and discussion of the way in which the law has been and should be interpreted, we can lay the groundwork for the rapid and efficient development of the NII.

To prepare this Report, the Working Group drew upon expertise within the participating departments and agencies of the Federal government.⁷ In addition, the Working Group received and considered views of the public, including those of the NII Advisory Council.

The Working Group held a public hearing in November 1993, at which 30 witnesses testified.⁸ The Working Group also solicited written comments and received some 70 statements during a public comment period which closed on December 10, 1993.⁹ Following its review of the public comments and analysis of the issues, the Working Group released a preliminary draft of its report ("Green Paper") on July 7, 1994.¹⁰ The Working Group issued the report in preliminary draft form to ensure broad dissemination and ample opportunity for public comment prior to making final recommendations and issuing this Report. Thousands of copies of the Green Paper were

Working Group has attempted to identify these terms of art and provide their legal definitions. Further, every attempt has been made to present trademarks that appear in the Report with initial capital letters. However, not all terms appearing with initial capital letters in the Report are trademarks. Where a question may exist regarding whether a term may be or is a trademark, the use of such term in the Report does not constitute any position regarding the trademark status of the term.

⁷ See list of Working Group participants *infra* Appendix 3.

⁸ See Request for Comments on Intellectual Property Issues Involved in the National Information Infrastructure Initiative, 58 Fed. Reg. 53,917 (Oct. 19, 1993).

⁹ See *id.*

¹⁰ See Information Infrastructure Task Force, Working Group on Intellectual Property Rights, *Intellectual Property and the National Information Infrastructure: A Preliminary Draft of the Report of the Working Group on Intellectual Property Rights* (July 1994).

distributed in paper form as well as electronically via the IITF Bulletin Board.¹¹

Following the release of the Green Paper, the Working Group heard testimony from the public in four days of hearings in Chicago, Los Angeles and Washington, D.C., in September 1994.¹² In addition, more than 1,500 pages of written comments on the Green Paper and reply comments were filed, in paper form and through the Internet, by more than 150 individuals and organizations -- representing more than 425,000 members of the public -- during the comment period, which extended over four months.¹³

The Working Group convened a Conference on Fair Use (CONFU) to bring together copyright owner and user interests to discuss fair use issues and, if possible, to develop guidelines for uses of copyrighted works by librarians and educators. Some 60 interest groups are participants in the

¹¹ The IITF Bulletin Board can be accessed through the Internet by pointing the Gopher Client to iitf.doc.gov or by telnet to [iitf.doc.gov](telnet://iitf.doc.gov) (log in as gopher). The Bulletin Board is also accessible at 202-501-1920 using a personal computer and a telephone modem.

¹² The public hearing in Chicago was held on September 14, 1994, at the University of Chicago. The hearing in Los Angeles was held on September 16, 1994, at the University of California at Los Angeles. The hearings in Washington, D.C., were held on September 22 and 23, 1994, in the Andrew W. Mellon Auditorium. See Notice of Hearings and Request for Comments on Preliminary Draft of the Report of the Working Group on Intellectual Property Rights, 59 Fed. Reg. 42,819 (Aug. 19, 1994). Transcripts of the public hearings may be obtained by writing the U.S. Patent and Trademark Office, Office of Legislative and International Affairs, Box 4, Washington, D.C., 20231. The transcripts are also available on the IITF Bulletin Board. See *supra* note 11.

¹³ See Notice of Hearings and Request for Comments on Preliminary Draft of the Report of the Working Group on Intellectual Property Rights, 59 Fed. Reg. 42,819 (Aug. 19, 1994); Extension of Deadline for Comments on Preliminary Draft of the Report of the Working Group on Intellectual Property Rights, 59 Fed. Reg. 50,222 (Oct. 3, 1994). Comments received are available for public inspection at the Scientific and Technical Information Center of the U.S. Patent and Trademark Office, Room 2CO1, Crystal Plaza 34, 2021 Jefferson Davis Highway, Arlington, Virginia, between the hours of 9 a.m. and 4 p.m., Monday through Friday.

Conference and have been meeting regularly since September 1994 in sessions that are open to the public. The Working Group also kicked off a Copyright Awareness Campaign (CAC) in March 1995. Approximately 40 participating individuals and organizations are coordinating their educational efforts and joining with the Working Group and the Department of Education to raise public awareness of copyright. Meetings of the Campaign are also open to the public.

Interested parties had numerous opportunities to submit their views on the intellectual property implications of the development and use of the NII and on the Working Group's Green Paper, including its preliminary findings and recommendations. The open process instituted by the Working Group resulted in a well-developed, voluminous record indicating the views of a wide variety of interested parties, including various electronic industries, service providers, the academic, research, library and legal communities, and individual creators, copyright owners and users, as well as the computer software, motion picture, music, broadcasting, publishing and other information and entertainment industries.

The special intellectual property concerns and issues raised by the development and use of the NII are the subject of this Report.¹⁴ It does not, however, provide all of the answers. It may not even present all of the questions. There is much that we do not -- and cannot -- now know about how the NII will develop. Technology is advancing at such an incredible pace that issues will certainly continue to arise in the future, perhaps demanding more comprehensive legislation. However, because there is much

¹⁴ This Report does not attempt to address all existing intellectual property issues. For instance, current debates over protection of the design of useful articles and whether or to what extent certain aspects of computer programs are or should be protected under copyright law are not covered by this Report. Likewise, certain patent issues, such as pre-grant publication and reexamination, are not addressed.

that we do know, the fact that future developments will raise additional issues not currently ripe should not deter us from addressing those that are.¹⁵

¹⁵ In the process of preparing this Report, the Working Group constantly received and evaluated information concerning a large variety of technological and other developments that bear on the NII and intellectual property rights in works distributed thereon. In April 1995, the Working Group was compelled to place the Report in concrete form, and, thus, to stop adjusting the text with respect to just-received news. As a result, the Working Group has elected to: (a) pose in some detail -- but not try to definitively answer -- certain questions, and (b) not discuss every possible technological development of which it recently became aware. We are confident that the legislative and political processes will offer the opportunity for additional comments from both the U.S. Government and interested parties.

BACKGROUND

Intellectual property is a subtle and esoteric area of the law that evolves in response to technological change.¹⁶ Advances in technology particularly affect the operation and effectiveness of copyright law. Changes in technology generate new industries and new methods for reproduction and dissemination of works of authorship, which may present new opportunities for authors, but also create additional challenges. Copyright law has had to respond to those challenges, from Gutenberg's moveable type printing press to digital audio recorders and everything in between -- photocopiers, radio, television, videocassette recorders, cable television and satellites.¹⁷

Uses of computer technology -- such as digitization -- and communications technology -- such as fiber optic cable -- have had an enormous impact on the creation, reproduction and dissemination of copyrighted works. The merger of computer and communications technology into an integrated information technology has made possible the development of the National Information Infrastructure which will generate both unprecedented challenges and important opportunities for the copyright marketplace.

An information infrastructure already exists, but it is not integrated into a whole. Telephones, televisions, radios, computers and fax machines are used every day to receive, store, process, perform, display and transmit data, text, voice, sound and images in homes and businesses throughout the country. Fiber optics, wires, cables,

¹⁶ Supreme Court Justice Story found that copyright and patent cases come "nearer than any other class of cases belonging to forensic discussions, to what may be called the metaphysics of the law where the distinctions are, or at least may be, very subtle [sic] and refined, and, sometimes, almost evanescent." See *Folsom v. Marsh*, 9 F. Cas. 342, 344 (C.C.D. Mass. 1841) (No. 4,901).

¹⁷ The original copyright law upon which our system was based (England's Statute of Anne) was a reaction to the invention of the printing press.

switches, routers, microwave networks, satellites and other communications technologies currently connect telephones, computers and fax machines. The NII of tomorrow, however, will be much more than these separate communications networks; it will integrate them into an advanced high-speed, interactive, broadband, digital communications system. Computers, telephones, televisions, radios, fax machines and more will be linked by the NII, and users will be able to communicate and interact with other computers, telephones, televisions, radios, fax machines and more -- all in digital form.¹⁸

The NII has tremendous potential to improve and enhance our lives. It can increase access to a greater amount and variety of information and entertainment resources that can be delivered quickly and economically from and to virtually anywhere in the world in the blink of an eye. For instance, hundreds of channels of "television" programming, thousands of musical recordings, and literally millions of "magazines" and "books" can be made available to homes and businesses across the United States and around the world.¹⁹

The NII can provide access to rich cultural resources around the world, transforming and expanding the scope and reach of the arts and humanities. It will provide opportunities for the development of new markets for cultural products. It can broaden our cultural experiences through diversity of content, and increase our understanding of other societies.

¹⁸ These devices will be linked not only to each other (computer to computer, for example) but will also be cross-linked (computer to television set).

¹⁹ The United States and other countries are working toward the development of an advanced Global Information Infrastructure (GII) that "will allow us to share information, to connect, and to communicate as a global community." And as that information moves through international channels, "[p]rotecting intellectual property is absolutely essential." See Remarks Prepared for Delivery by Vice President Al Gore at the International Telecommunications Union in Buenos Aires, Argentina (March 21, 1994).

The NII can support our education systems by, for example, linking students and educators in remote locations around the world. It can also improve the nation's health care systems by increasing public awareness of health issues, providing continuing education of health care professionals, and allowing patients to take a more active role in their own health care.

The NII can dramatically increase the opportunity for democratic participation in government. The Task Force has shown some of the potential in its work. For instance, the IITF Bulletin Board makes available copies of Task Force reports, testimony, speeches, meeting schedules and minutes, hearing notices, transcripts, and other documents related to the work of the Administration and opportunities for public participation.²⁰ The Task Force has also accepted comments from the public through the Internet and has conducted an on-line public conference.²¹

Individuals and entities that heretofore have been predominately consumers of works can now become authors and providers through the NII. It can put easier, more sophisticated communication and publishing tools in the hands of the public, increasing the ability to communicate with, and disseminate works of authorship to, others.

The NII can boost the ability of U.S. firms to compete and succeed in the global economy, thereby generating

²⁰ The IITF Bulletin Board can be accessed through the Internet or by use of a personal computer and modem. *See supra* note 11.

²¹ Comments on the Green Paper were accepted at an Internet address. *See* Notice of Hearings and Request for Comments on Preliminary Draft of the Report of the Working Group on Intellectual Property Rights, 59 Fed. Reg. 42,819 (Aug. 19, 1994); Extension of Deadline for Comments on Preliminary Draft of the Report of the Working Group on Intellectual Property Rights, 59 Fed. Reg. 50,222 (Oct. 3, 1994). The IITF Universal Service Working Group and the Commerce Department's National Telecommunication and Information Administration hosted a "Virtual Public Conference" in November 1994 utilizing a series of electronic mail discussion groups. *See* 59 Fed. Reg. 55,081 (Nov. 3, 1994).

more jobs for Americans. It can spur economic growth. More than half of the U.S. work force is in information-based jobs, and the telecommunications and information sector is growing faster than any other sector of the U.S. economy. New job opportunities can be created in the processing, organizing, packaging and dissemination of the information and entertainment products flowing through the NII.

The NII can provide benefits to authors and consumers by reducing the time between creation and dissemination. It will open additional markets for authors. If authors choose to enter those new markets, it will provide a wider variety and greater number of choices for consumers, which should increase competition and reduce prices. The availability of these benefits is by no means assured, however. Authors are wary of entering this market because doing so exposes their works to a higher risk of piracy and other unauthorized uses than any of the traditional, current modes of dissemination. Therefore, authors may withhold their works from this environment. Further, even if authors choose not to expose their works to this more risky environment, the risk is not eliminated. Just one unauthorized uploading of a work onto a bulletin board, for instance -- unlike, perhaps, most single reproductions and distributions in the analog or print environment -- could have devastating effects on the market for the work.

Thus, the full potential of the NII will not be realized if the education, information and entertainment products protected by intellectual property laws are not protected effectively when disseminated via the NII. Creators and other owners of intellectual property rights will not be willing to put their interests at risk if appropriate systems -- both in the U.S. and internationally -- are not in place to permit them to set and enforce the terms and conditions under which their works are made available in the NII environment. Likewise, the public will not use the services available on the NII and generate the market necessary for

its success unless a wide variety of works are available under equitable and reasonable terms and conditions, and the integrity of those works is assured. All the computers, telephones, fax machines, scanners, cameras, keyboards, televisions, monitors, printers, switches, routers, wires, cables, networks and satellites in the world will not create a successful NII, if there is no *content*. What will drive the NII is the content moving through it.

Ensuring consumer access to and enjoyment of both copyrighted works and new technologies is an attainable goal, and recent experience has confirmed this.²² For example, the introduction of digital audio tape recorders recently posed significant problems for copyright owners. Congress responded to the increased threat of rampant unauthorized use with legislation that incorporated both technological and legal measures to protect the interests of both consumers and copyright owners.²³

²² See, e.g., *Sony Corp. v. Universal City Studios, Inc.*, 464 U.S. 417, 430-31 nn. 11-12 (1984) (hereinafter *Sony*) (discussing significance of changes in technology and their effect on copyright law); *Final Report of the National Commission on New Technological Uses of Copyrighted Works* (hereinafter *CONTU Final Report*) at 3 (reporting about the issues raised by photocopiers and computers back in 1978, in language that is equally applicable today) (citations omitted):

The ownership and control of information and the means of disseminating it are emerging as national and international policy issues. Concerns about the impact on individual freedom posed by the control of the flow of information are at the forefront of public debate. The adequacy of the legal structure to cope with the pace and rate of technological change frequently has been called into question.

²³ Congress enacted the Audio Home Recording Act of 1992, which combined legal and technological protection for sound recordings. See 17 U.S.C. § 1001 *et seq.* (Supp. V 1993). The Audio Home Recording Act requires a serial copy management system in all digital audio recording devices and digital audio interface devices imported, manufactured or distributed in the United States. Such a system allows unlimited first generation digital copying of sound recordings, but prevents the making of digital copies from copies. The Act prohibits the importation, manufacture or distribution of any device, or the offering or performance of any service, the primary purpose of which is to circumvent any program or circuit which implements a serial copy management

Advances in digital technology and the rapid development of electronic networks and other communications technologies raise the stakes considerably. Any two-dimensional work can readily be "digitized" -- *i.e.*, translated into a digital code (usually a series of zeros and ones). The work can then be stored and used in that digital form. This dramatically increases: the ease and speed with which a work can be reproduced; the quality of the copies (both the first and the hundredth "generation" are virtually identical); the ability to manipulate and change the work; and the speed with which copies (authorized and unauthorized) can be "delivered" to the public. Works also can be combined easily with other works into a single medium, such as a CD-ROM, which contributes to a blurring of the lines that typically divide types of works and the rights and limitations applicable thereto.

The establishment of high-speed, high-capacity electronic information systems makes it possible for one individual, with a few key strokes, to deliver perfect copies of digitized works to scores of other individuals -- or to upload a copy to a bulletin board or other service where thousands of individuals can download it or print unlimited "hard" copies. The emergence of integrated information technology is dramatically changing, and will continue to change, how people and businesses deal in and with information and entertainment products and services, and how works are created, reproduced, distributed, adapted, displayed, performed, owned, licensed, managed, presented, organized, sold, accessed, used and stored. This leads, understandably, to a call for adaptation of -- or change in -- the law.

system. The Act also establishes a royalty system through which importers and manufacturers of digital audio recording devices and digital audio recording media make royalty payments on each device or medium they distribute. Such payments are collected by the Copyright Office and distributed annually to record companies, performers, music publishers and songwriters.

Thomas Jefferson stated:

I am not an advocate for frequent changes in laws and constitutions. But laws and institutions must go hand and hand with the progress of the human mind. As that becomes more developed, more enlightened, as new discoveries are made, new truths discovered and manners and opinions change, with the change of circumstances, institutions must advance also to keep pace with the times. We might as well require a man to wear still the coat which fitted him when a boy²⁴

Our task is to determine whether the coat still fits in this new information age. An effective intellectual property regime must (1) ensure that users have access to the broadest feasible variety of works by (2) recognizing the legitimate rights and commercial expectations of persons and entities whose works are used in the NII environment.

For more than two centuries, copyright law, with periodic amendment, has provided protection for an increasing variety of works of authorship. The most recent complete revision of the law -- The Copyright Act of 1976²⁵ -- was enacted in response to "significant changes in technology [that had] affected the operation of the copyright law."²⁶ The legislative history of the 1976 Act

²⁴ See Inscription at the Jefferson Memorial, Washington, D.C. As Secretary of State, Thomas Jefferson was the first head of the U.S. Patent Office.

²⁵ The Copyright Act of 1976, as amended, is codified at 17 U.S.C. § 101 *et seq.* (1988 & Supp. V 1993). Hereinafter, the Act is cited as "17 U.S.C. § ___."

²⁶ See H.R. REP. NO. 1476, 94th Cong., 2d Sess. 47 (1976), *reprinted in* 1976 U.S.C.C.A.N. 5659 (hereinafter HOUSE REPORT) ("During the past half century a wide range of new techniques for capturing and communicating printed matter, visual images, and recorded sounds have come into use, and the increasing use of information storage and retrieval devices, communications satellites, and laser technology promises even greater changes in the near

notes that those changes had "generated new industries and new methods for the reproduction and dissemination of copyrighted works, and the business relations between authors and users [had] evolved new patterns."²⁷

We are once again faced with significant changes in technology that upset the balance that currently exists under the Copyright Act. Our goal is to maintain the existing balance.

Some assert that copyright protection should be reduced in the NII environment. The public wants information to be free and unencumbered on the NII, it is argued, and the law should reflect the public interest. Without doubt, this is a valid concern. Information *per se* should not be protected by copyright law -- nor is it. Facts and ideas from any work of authorship may be freely copied and distributed; the Copyright Act expressly excludes such information from the scope of the protection it accords.²⁸ The copyright law should also serve the public interest -- and it does. While, at first blush, it may appear to be in the public interest to reduce the protection granted works and to allow unfettered use by the public, such an analysis is incomplete. Protection of works of authorship provides the stimulus for creativity, thus leading to the availability of works of literature, culture, art and entertainment that the public desires and that form the backbone of our economy and political discourse. If these works are not protected, then the marketplace will not support their creation and dissemination, and the public will not receive the benefit of their existence or be able to have unrestricted use of the ideas and information they convey.

Others assert that technological advances justify reduced protection. Since computer networks now make

future.").

²⁷ See HOUSE REPORT at 47, *reprinted in* 1976 U.S.C.C.A.N. 5660.

²⁸ See 17 U.S.C. § 102(b); *see also* discussion *infra* pp. 32-34.

unauthorized reproduction, adaptation, distribution and other uses of protected works so incredibly easy, it is argued, the law should legitimize those uses or face widespread flouting. This argument is not valid. Technology makes many things possible. Computer networks can be and have been used to embezzle large sums of money and to commit other crimes. Yet, these acts are prohibited by law. Simply because a thing is possible does not mean that it should be condoned.

Finally, there are those who argue that intellectual property laws of any country are inapplicable to works on the NII or GII because all activity using these infrastructures takes place in "Cyberspace," a sovereignty unto itself that should be self-governed by its inhabitants, individuals who, it is suggested, will rely on their own ethics -- or "netiquette" -- to determine what uses of works, if any, are improper. First, this argument relies on the fantasy that users of the Internet, for instance, are somehow transported to "chat rooms" and other locations, such as virtual libraries. While such conceptualization helps to put in material terms what is considered rather abstract, activity on the Internet takes place neither in outer space nor in parallel, virtual locations. Satellite, broadcast, fax and telephone transmissions have not been thought to be outside the jurisdiction of the nations from which or to which they are sent. Computer network transmissions have no distinguishing characteristics warranting such other-world treatment. Further, such a legal free-for-all would transform the GII into a veritable copyright Dodge City. As enticing as this concept may seem to some users, it would hardly encourage creators to enter its confines.

Nonetheless, content providers are currently experimenting with a number of business models in the networked environment, and it is already clear that a wide variety of such models may coexist. Some content providers will choose not to enforce all -- or any -- of their rights; others may change their business practices. For instance, some newspaper publishers are selling individual articles

using electronic payment mechanisms, in addition to selling subscriptions and individual issues. Some software companies are making their "client" software freely available for individual use in an effort to increase the market share of their "server" software. Some hypermedia magazine publishers on the World Wide Web are choosing to give away their product but charge sponsors for advertising space. A number of information service providers are charging for the use of the search engines that add value to freely available public domain content.

Some content providers will not be motivated by any commercial considerations. For instance, certain scientific communities are working together to create archives of freely available electronic pre-prints on the Internet. The copyright law allows copyright owners to exercise the rights granted to them, to license their rights to others, or to give them away. Those creators who wish to dedicate their works to the public domain may, of course, do so notwithstanding the availability of protection under the Copyright Act. Nothing in the law prevents those who do not wish to claim copyright from waiving their rights and allowing unrestricted reproduction, distribution and other use of their works. Indeed, notices to that effect are not uncommon on the Internet.

The absence on the NII of copyrighted works for which authors do wish to exercise their rights -- fully or to some limited extent -- under the copyright law, of course, would not necessarily result in its demise. The Internet, for instance, could continue to serve as a communications tool and resource for Government, public domain and works of willing authors. However, unless the framework for legitimate commerce is preserved and adequate protection for copyrighted works is ensured, the vast communications network will not reach its full potential as a true, global marketplace. Copyright protection is not an obstacle in the way of the success of the NII; it is an essential component. Effective copyright protection is a fundamental way to promote the availability of works to the public.

Preserving the framework does not require, however, a dramatic increase in authors' rights, such as more limited or no further applicability of the fair use doctrine in the NII environment. Some have argued that because it may now be technically feasible to "meter" each use of a copyrighted work, and to charge a user a fee for the use, the concept of fair use has no place in the NII environment. They argue equally that other limitations on rights should be abolished or narrowed for similar reasons. The Working Group believes that weakening copyright owners' rights in the NII is not in the public interest; nor would a dramatic increase in their rights be justified.

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.²⁹ Existing copyright law needs only the fine tuning that technological advances necessitate, in order to maintain the balance of the law in the face of onrushing technology. There must be, however, effort in three disciplines -- law, technology and education -- to successfully address the intellectual property issues raised by the development and use of the NII.

²⁹ The Working Group believes that no revision of the patent, trademark or trade secret law is warranted at this time. See discussion *infra* pp. 155-75, 236-38.

