

NATIONAL
INFORMATION
INFRASTRUCTURE
TASK FORCE

Working Group on
Intellectual
Property

PUBLIC HEARING
11/18/93

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NOV 24 1993

MEMORANDUM FOR: Jock Gill
White House Office of Media Affairs

FROM: Terri A. Southwick, ^{TAB}Attorney Advisor

SUBJECT: NII Working Group Hearing Materials

As we discussed, enclosed is a set of materials from the November 18, 1993, public hearing held by the Working Group on Intellectual Property of the Information Policy Committee of the National Information Infrastructure Task Force. The closing date for written comments to be submitted is not until December 10; therefore, I will send you any additional comments we receive. I will also send you copies of the hearing transcript (a hard copy and one on disk) as soon as they are available.

Please call me at (703)305-9300 if you need any further information or materials.

NATIONAL INFORMATION
INFRASTRUCTURE TASK FORCE

Information Policy Committee

Working Group
on
Intellectual Property

PUBLIC HEARING

November 18, 1993

Dated: October 13, 1993.

David S. Crestin,

Acting Director, Office of Fisheries
Conservation and Management, National
Marine Fisheries Service.

[FR Doc. 93-25658 Filed 10-18-93; 8:45 am]

BILLING CODE 3510-22-P

Patent and Trademark Office

Request for Comments on Intellectual Property Issues Involved in the National Information Infrastructure Initiative

AGENCY: Patent and Trademark Office, Commerce.

ACTION: Notice of hearing and request for public comments.

SUMMARY: The Working Group on Intellectual Property of the Information Policy Committee of the National Information Infrastructure (NII) Task Force is developing proposals for protecting works disseminated via the National Information Infrastructure from unauthorized use. To ensure that the Working Group's proposals are based on the views of all interested parties, the Working Group will hold a hearing on the intellectual property issues involved in the National Information Infrastructure initiative. Written comments may also be submitted.

DATES: The public hearing will be held on November 18, 1993, from 9 a.m. to 5 p.m. Requests to attend the hearing or to present oral testimony at the hearing should be received on or before November 8, 1993. Written comments of those persons offering testimony at the hearing that are related to the testimony should be submitted on or before November 8, 1993. All other written comments are due on or before December 10, 1993.

ADDRESSES: The hearing will be held in Marriott's Crystal Forum, a part of the Crystal City Marriott Hotel located in The Underground, 1999 Jefferson Davis Highway, Arlington, Virginia. Written comments and requests to present oral testimony should be submitted to the Commissioner of Patents and Trademarks, U.S. Patent and Trademark Office, Box 4, Washington, DC 20231, marked to the attention of Terri A. Southwick, Attorney-Advisor, Office of Legislation and International Affairs. Written comments and a transcript of the hearing will be made available for public inspection in room 902 of Crystal Park Two, 2121 Crystal Drive, Arlington, Virginia.

FOR FURTHER INFORMATION CONTACT: Terri A. Southwick by telephone at (703) 305-9300 or by telefax at (703)

305-8885 or by mail marked to her attention and addressed to the Commissioner of Patents and Trademarks, U.S. Patent and Trademark Office, Box 4, Washington, DC 20231.

SUPPLEMENTARY INFORMATION: The National Information Infrastructure is a system of high-speed telecommunications networks, databases, and advanced computer systems that will make electronic information and entertainment products more widely available and accessible to the public than ever before. This increased availability and accessibility will dramatically affect the way information and entertainment products are created, marketed and delivered throughout the world. Consequently, the commercial viability of the NII hinges not only upon effectively promoting and encouraging use of the NII by all types of users, but also on implementing standards and policies for the NII in a manner that assures that the owners of products disseminated through the NII retain sufficient control over these products to prevent unauthorized use. In this regard, it is essential that the public and private sectors collaborate to ensure that the interests of owners and users of intellectual property are adequately considered in any standards and policies that are established.

On February 22, 1993, the President announced his plan to create a White House Information Infrastructure Task Force (IITF) to work with Congress and the private sector to develop comprehensive telecommunications and information policies aimed at articulating and implementing the Administration's vision for the NII. The IITF is chaired by the Secretary of Commerce and consists of three committees—the Telecommunications Policy Committee, the Information Policy Committee, and the Applications Committee. Within the Information Policy Committee there are three working groups—the Working Group on Intellectual Property Rights, the Working Group on Privacy, and the Working Group on Federal Information.

The Working Group on Intellectual Property Rights, which is chaired by the Assistant Secretary of Commerce and Commissioner of Patents and Trademarks, was established to resolve issues of concern to copyright and other intellectual property owners regarding the distribution of their works via the NII. The Working Group's mission is to help develop the NII in a manner that will ensure the integrity of intellectual property rights, make the wealth of information and entertainment products more widely available and accessible

than ever before, and provide economic incentives to intellectual property rights owners so that they will make their products available through the NII.

The Working Group solicits testimony and written comments addressing one or more of the following issues:

- Is the existing copyright law adequate to protect the rights of those who will make their works available via the NII? What statutory or regulatory changes, if any, should be made?
- Do the existing fair use provisions of the copyright law adequately accommodate the interests of users of the works available via the NII? What statutory or regulatory changes, if any, should be made?
- Should standards or other requirements be adopted for the labeling or encoding of works available via the NII so that copyright owners and users can identify copyrighted works and the conditions for their use?
- Should standards be established to encourage or require the intercommunication or exchange of information and the interoperability of the different types of computer software and systems supporting or utilizing the NII?
- Should a licensing system be developed for certain uses of any or all works available via the NII? If so, should there be a single type of licensing or should the NII support a multiplicity of licensing systems?
- Are there technical means for preventing unauthorized reproduction or other unauthorized uses of copyrighted works that should be mandated or required to comply with certain standards (similar to the serial copying controls required in digital audio recording devices and digital audio interface devices under the Audio Home Recording Act of 1992)?
- What types of educational programs might be developed to increase public awareness of intellectual property laws, their importance to the economy, and their application to works available via the NII?

The public is invited to submit written comments, and any appropriate supporting material, on the issues set forth above or any related issues. Those submitting comments must include their name and/or professional affiliation.

Dated: October 13, 1993.

Bruce A. Lehman,

Assistant Secretary of Commerce and
Commissioner of Patents and Trademarks.

[FR Doc. 93-25592 Filed 10-18-93; 8:45 am]

BILLING CODE 3510-10-M

**National Information Infrastructure Task Force
Information Policy Committee
Working Group on Intellectual Property**

**PUBLIC HEARING
November 18, 1993**

Schedule of Testimony (Revised)

- 9:00 a.m. OPENING REMARKS
Bruce A. Lehman
Assistant Secretary of Commerce and
Commissioner of Patents and Trademarks
Chair, Working Group on Intellectual Property
- 9:20 a.m. Steven J. Metalitz, Esq.
Vice President and General Counsel
Information Industry Association
555 New Jersey Avenue, N.W.
Suite 800
Washington, D.C. 20001
- 9:30 a.m. Maria Pallante, Esq.
Executive Director
National Writers Union
873 Broadway
Suite 203
New York, NY 10003-1209
- 9:40 a.m. Stephen L. Haynes
Manager - WESTLAW Research & Development
West Publishing Company
610 Opperman Drive
P.O. Box 64526
St. Paul, MN 55164-0526

- 9:50 a.m. Lisa Freeman
Director
Chair, Association of American University Presses'
Electronic Caucus
University of Minnesota Press
2037 University Avenue, S.E.
Minneapolis, MN 55455-3092
- 10:00 a.m. Timothy B. King
Vice President
Planning & Development
John Wiley & Sons, Inc.
605 Third Avenue
New York, NY 10158-0012
- 10:10 a.m. Robert L. Oakley
Director of Law Library
Georgetown University Law Center
111 G Street, N.W.
Washington, D.C. 20001
[On behalf of numerous library and education
associations]
- 10:20 a.m. Joseph M. Cosgrove, Esq.
Department of Political Science
King's College
114 N. Franklin Street
Wilkes-Barre, PA 18711
- 10:30 a.m. Dennis L. Bybee, Ph.D.
Associate Executive Officer
International Society for Technology in Education
USA National Office
P.O. Box 4437
Alexandria, VA 22303
- 10:40 a.m. David H. Rothman
805 North Howard Street
#240
Alexandria, VA 22304

- 10:50 a.m. BREAK
- 11:00 a.m. David Pierce
President
American Association of Community Colleges
One Dupont Circle, N.W.
Suite 410
Washington, D.C. 20036
- 11:10 a.m. Fritz E. Attaway, Esq.
Senior Vice President and General Counsel
Motion Picture Association of America, Inc.
1600 Eye Street, N.W.
Washington, D.C. 20006
- 11:20 a.m. Hilary B. Rosen
Executive Vice President
and
Emil Torick
Engineering Consultant
Recording Industry Association of America
1020 19th Street, N.W.
Suite 200
Washington, D.C. 20036
- 11:30 a.m. Lawrence Kenswil
Vice President for Business and Legal Affairs
MCA Music Entertainment Group
70 Universal City Plaza
Universal City, CA 91608
- 11:40 a.m. Richard Ducey, Ph.D.
Senior Vice President
NAB Research and Information Group
and
Benjamin F.P. Ivins, Esq.
Assistant General Counsel
National Association of Broadcasters
1771 N Street, N.W.
Washington, D.C. 20036-2891

- 11:50 a.m. LUNCH BREAK
- 1:10 p.m. John Masten
Executive Vice-President
The New York Public Library
Fifth Avenue and 42nd Street
New York, NY 10018-2788
- 1:20 p.m. Gary N. Griswold
President
InfoLogic Software, Inc.
1223 Peoples Avenue
Suite 5405
Troy, NY 12180
- 1:30 p.m. Robert E. Kahn, Ph.D.
President
Corporation for National Research Initiatives
Suite 100
1895 Preston White Drive
Reston, VA 22091-5434
- 1:40 p.m. Brad J. Cox, Ph.D.
Center for Electronic Markets
6603 Pelham Street
Centreville, VA 22020
- 1:50 p.m. Ronald S. Laurie, Esq.
Weil, Gotshal & Manges
Silicon Valley Office
2882 Sand Hill Road
Suite 280
Menlo Park, CA 94015-7022
- 2:00 p.m. Henry H. Perritt, Jr.
Professor of Law
Villanova University
Villanova, PA 19085-1682

- 2:10 p.m. Ronald J. Palenski, Esq.
Senior Vice President and General Counsel
Information Technology Association of America
1616 N. Fort Myer Drive
Suite 1300
Arlington, VA 22209-3106
- 2:20 p.m. BREAK
- 2:30 p.m. Mark Traphagen, Esq.
Software Publishers Association
1730 M Street, N.W.
Suite 700
Washington, D.C. 20036-4510
- 2:40 p.m. Thomas M. Lemberg, Esq.
Vice President and General Counsel
Lotus Development Corporation
55 Cambridge Parkway
Cambridge, MA 02142
[On behalf of Business Software Alliance and
Alliance to Promote Software Innovation]
- 2:50 p.m. Brian Kahin, Esq.
General Counsel
Director, Intellectual Property Project
Interactive Multimedia Association
1 Fifth Street
Cambridge, MA 02141
- 3:00 p.m. Gary J. Shapiro
Group Vice President
Consumer Electronics Group
Electronic Industries Association
2001 Pennsylvania Avenue, N.W.
Washington, D.C. 20008

- 3:10 p.m. Douglas K. Brotz, Ph.D.
Principal Scientist
Adobe Systems Incorporated
1585 Charleston Road
P.O. Box 7900
Mountain View, CA 94039-7900
- 3:20 p.m. Frank W. Connolly, Ph.D.
Department of Computer Science
and Information Systems
The American University
119 Clark Hall
Washington, D.C. 20016
- 3:30 p.m. CLOSING REMARKS

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INFORMATION INDUSTRY ASSOCIATION

Statement of
INFORMATION INDUSTRY ASSOCIATION

before the
Working Group on Intellectual Property
National Information Infrastructure Task Force

Presented by
Steven J. Metalitz
Vice President and General Counsel

Crystal City Marriott Hotel
Arlington, Virginia
November 18, 1993

The Information Industry Association appreciates this opportunity to present its views on intellectual property issues involved in the Administration's National Information Infrastructure (NII) initiative.

I. ABOUT IIA

The Information Industry Association, founded in 1968, is the trade association of hundreds of leading companies that create and distribute innovative information products and services to meet the needs of the American public. IIA's membership ranges from large global corporations to entrepreneurial start-ups, and includes traditional and electronic publishers, database producers and providers, interactive electronic services, telecommunications providers, computer manufacturers, software developers, telecommunications providers, and companies serving specialized markets for financial, professional, consumer and other information.

Among this diverse group of businesses, the common theme is the value of information, delivered to the customer in many forms and through a variety of media. Accordingly, these companies have an unsurpassed stake in the development and operation of an advanced national information infrastructure.

II. INTELLECTUAL PROPERTY AND THE NII

IIA commends the Administration for identifying intellectual property protection and management issues as crucial to the success of the National Information Infrastructure, and for establishing this Working Group as the focal point of the federal government's policy initiatives in this field.

The United States already has a national information infrastructure — and it works. Our people — artists, scholars, businesspeople, professionals, entertainers — generate an enormous volume of information products and services of all kinds. Our distribution networks — print, broadcast, digital — deliver this information efficiently and ubiquitously to an information-hungry public. Our successes in this field are the envy of the world.

This infrastructure is changing rapidly, and the tempo of change can only increase. The advanced national information infrastructure envisioned by the Clinton-Gore Administration holds the potential to deliver more information, more economically, in a wider variety of media and formats, to even more American homes, businesses and schools. This vision of a better-informed society is also a vision of a more competitive economy that thrives in ever broadening global marketplaces.

But the crucial element in this vision is sometimes overlooked. After all the high-speed networks are built, all the leading-edge switches and routers are installed, all the hardware and software are put in place, the advanced information infrastructure will need one more element to realize its potential: information. Without accessible and useful information content, the "information superhighway" could be a high-priced dead end for millions of Americans who are its potential beneficiaries.

This information content will not simply materialize on the screens of computers hooked up to the Internet, or on television monitors linked to advanced cable TV or telephone company networks. Information comes from a wide variety of sources, but it becomes useful and valuable only after a considerable investment of energy, resources, and creativity. And no more powerful incentive for that investment has yet been discovered than the system of legal protection for the resulting intellectual property.

That is why the issues before this Working Group lie at the heart of the NII challenge. Our existing framework for protecting and managing intellectual property rights has been a key element in the success of the national information infrastructure of today. While the new information infrastructure offers unparalleled opportunities for the widespread dissemination of this intellectual property to authorized users, it also offers unparalleled threats to the exercise of the exclusive rights of authors to reproduce, display, and adapt these works. The same capabilities that give advanced information infrastructure its awesome potential also invite an epidemic of abuse of intellectual property rights. If we do not prevent that epidemic, our hopes for what NII can deliver to our workplaces, schools and homes will be blighted.

Copyright issues are sometimes described as a "problem" plaguing the development of the NII. That trivializes what is really at stake here. If copyright cannot be protected in the new information environment, then the supply of useful information will be drastically curtailed — or, just as troubling, it will be limited to the information that government or some other powerful institution chooses to create. Because information content lies at the heart of a successful NII, the issues you are grappling with are the key to achieving our national goals in this field. Thus, you are faced, not with a pesky and annoying problem, but with what some might call an "insurmountable opportunity."

In fact, we believe, the challenge before you can be surmounted. It will take a combination of efforts: legal, technological, and, perhaps most importantly, educational. Your announcement of these hearings poses many of the right questions in each of these areas. On behalf of IIA, I am pleased to offer some preliminary responses.

III. THE WORKING GROUP'S QUESTIONS

A. IS EXISTING COPYRIGHT LAW ADEQUATE?

Copyright law has proven to be both a flexible and a powerful instrument in providing incentives for authorship in a wide variety of media, in an environment of rapid technological change. Some critics denounce our existing copyright framework as anachronistic, hurling the epithet of "Gutenberg-era" at today's copyright law. The facts are to the contrary. Copyright has succeeded in "promoting the progress of Science and the Useful Arts," not just in the Gutenberg era, but also in the Daguerre era, the Edison era, the Marconi era, and, yes, even in the era of Noyce, Wozniak, Jobs, and the thousands of others whose technological breakthroughs have made the advanced NII possible.

Accordingly, we do not believe that any fundamental changes are needed in order for existing copyright law to continue to achieve its major objective of stimulating the creation and distribution of original works of authorship. Any proposal for a fundamental rewrite of copyright law must bear the heavy burden of demonstrating its clear superiority to an enormously successful status quo.

There may be areas where the application of existing copyright concepts (e.g., "reproduction in copies") to uses of new technology (e.g., temporary storage of data, digitization) can usefully be clarified. IIA stands ready to work with the Administration, Congress, and interested non-governmental parties to identify any areas where clarifying legislation would be useful, and to craft statutory language to accomplish this. (As noted in section F below, it may also be appropriate to consider specific legal sanctions against devices or techniques intended to circumvent intellectual property management technology.)

In evaluating any proposals for copyright law changes, the Administration should play particularly close attention to developments in the global copyright law regime. For example, two major initiatives are now underway at the World Intellectual Property Organization: a possible protocol to the Berne Convention, and a possible "new instrument" dealing with protection of rights in phonograms. In both of these fora, experts from around the world are debating whether, and if so how, to recognize and define exclusive rights in "digital transmissions," in addition to the more familiar exclusive rights (e.g., reproduction, adaptation) now enshrined both in the Berne Convention and in our own Copyright Act. Although, at this point, many aspects remain unresolved, these discussions have the potential for articulating how traditional copyright principles should apply in burgeoning digital networks. The European Community's proposed directive on legal protection of databases is another initiative that could influence the development of U.S. copyright law and should be carefully monitored.

With its accession to the Berne Convention, the U.S. has finally taken its rightful place at the global copyright table. IIA is pleased to see that this Administration is continuing and expanding the U.S. leadership role in WIPO and other international fora. Henceforth, virtually any changes in U.S. copyright law — and certainly any changes inspired by development of the advanced NII — must take this global environment into account.

B. ARE EXISTING FAIR USE PROVISIONS ADEQUATE?

Fair use concepts are an integral part of our copyright law. Like copyright law as a whole, fair use has proven extraordinarily adaptable to technological changes, including those involved in NII.

Marketplace trends have also influenced the development of fair use concepts. In particular, the growing trend toward defining permissible uses of copyrighted material by contract is a positive development for both copyright proprietors and users of copyrighted material. Technological changes accompanying NII development could reinforce this trend, and should therefore be encouraged.

Section 106 of the Copyright Act lists the elements of the bundle of exclusive rights accruing to every author of a copyrightable work. In practice, however, we often look to a contract to specify the degree to which (and the circumstances under which) the author will permit another to exercise the exclusive rights created by the copyright law. Contracts demarcate the portion of the copyright terrain which the author cedes, temporarily or permanently, to the user. Indeed, without the ability to license exercise of exclusive rights through contract, a marketplace for digital information products would be severely constrained.

The statutory provisions on fair use are, of necessity, vague. Fair use is determined on a case-by-case basis, with the aid of factors set forth in the statute, rather than by hard and fast, quantitative rules. This inevitable uncertainty about the boundaries of fair use is the source of much understandable frustration. Fortunately, in many cases, the frustration can be managed by contract. When the parties agree, for example, on how much of an on-line database the subscriber may download, and for what purposes, they are creating a hard and fast, quantitative measure of permissible use that is applicable between themselves for a given transaction. This gives both parties greater certainty.

Technological developments accompanying NII could enable more widespread and more flexible use of contracts to define permissible uses. On advanced networks, copyrighted materials could be accompanied by headers, or surrounded by envelopes, that offer a range of terms and conditions for varied uses of the materials. "Intelligent agents" and other software tools could be employed to facilitate an automated contracting process between proprietors and users, and to reduce transaction costs.

Federal policy should encourage further research and development of technologies that facilitate electronic contracting and licensing of intellectual property in the advanced NII. Statutory fair use provisions will continue to play an important role, especially in extra-contractual situations. Policymakers should also be alert to opportunities to clarify statutory fair use standards. These opportunities may present themselves in particular markets where common business practices reflect a widespread consensus on permissible uses of copyrighted materials.

C. SHOULD LABELING OR ENCODING STANDARDS BE ADOPTED?

As noted in response to the previous question, one of the most promising technological trends associated with progress toward an advanced NII is the development of practical, flexible techniques for identifying ownership of, and specifying terms and conditions of authorized uses of, copyrighted material. Much research and development in this area is already underway. IIA is currently surveying and evaluating some of these R&D initiatives, with partial support from the Corporation for National Research Initiatives, which is itself an important player in this field. We will be glad to share the fruits of our investigation with the Working Group at an appropriate point.

Government can play several important roles in the development of labeling or encoding standards. It can be a catalyst, supporting further generic research and development. It can provide a forum for information sharing; for example, it can help network designers stay current with developments in this field, so that new networks can be designed and built to accommodate a range of labeling or encoding techniques. Government can also create an environment that encourages adoption of voluntary standards upon which different labeling or encoding systems may be built. However, government should refrain from setting mandatory standards. The burgeoning of alternative strategies in this field reflects innovation and competition, which must be nurtured and encouraged. Surely it is premature to conclude that government must put its thumb in this creative soup by picking "winning" approaches and consigning "losers" to commercial oblivion.

The government should also be alert to the rich possibilities for synergy between copyright management technologies, such as envelopes or headers, and efforts to safeguard the privacy, security and integrity of information travelling through the NII. The overlap between these two challenges is considerable. Making data more secure could help prevent copyright infringement as well as eavesdropping and espionage; effectively encapsulating data could help tag its ownership as well as protect its integrity. Intellectual property management presents some additional challenges: to license, monitor, and account for a user's access to information, for example, rather than simply to prevent it. This Working Group might fruitfully cooperate with the Privacy Working Group of the IITF Information Policy Committee in this field.

D. SHOULD INTEROPERABILITY OR INTERCOMMUNICATION STANDARDS BE ADOPTED?

In this area, as in the field of labeling or encoding technologies, government should seek to be a catalyst, not a decisionmaker on the merits of particular technologies. Surely interconnected and interoperable networks are desirable elements of an advanced NII. But a headlong rush toward interoperability, led by the federal government, could run roughshod over other important competing values: the commitment to competition, not government fiat, as the crucible for forging new technological solutions; and the encouragement of a diversity of sources for, and channels for communicating, information. These values will be less at risk if market forces, rather than government mandates, lead the way to greater interoperability.

The American information consumer, as an individual or as a participant in a larger institution, will benefit from interoperable networks; but he or she will also benefit from having a choice of networks through which to communicate, including some that may not be fully interoperable. Imposition of government mandated standards could frustrate this choice, as well as retard the development of innovative new technologies that may leapfrog the government's favored approach. This observation holds true on the global as well as national level.

E. SHOULD ONE OR MORE LICENSING SYSTEMS BE DEVELOPED?

Our existing information infrastructure already supports a wide range of licensing systems, from individualized contracts through collective administration to, in a few specified instances, compulsory licensing. As we develop an advanced NII, we should reject the temptation to take a "one-size-fits-all" approach.

As discussed above, exciting developments in technological tools for managing intellectual property rights hold great promise for increasing the role played by individualized licensing arrangements. Information headers and envelopes, intelligent software agents, billing and collection servers, and other copyright management mechanisms should make it easier and cheaper for individual customers to negotiate and implement their own licenses for their own uses of copyrighted materials. To the extent that individualized licensing is impractical due to transaction costs or other factors, the same tools can surely facilitate voluntary collective licensing programs, in which groups of users, as well as groups of proprietors, may share the benefits of economies of scale.

The potential of NII can be achieved only if the advanced infrastructure facilitates transactions in copyrighted materials. This is the key to the pervasive and individualized information dissemination that the NII initiative identifies as a key national goal. The licensing and management technologies referred to above can facilitate these transactions far more effectively than a single compulsory licensing system.

The information content made available through the advanced NII will encompass an enormous spectrum, from mass entertainment to specialized computer software, from high-bandwidth scientific applications to low-end voice and text channels. Advanced NII users will range from redisseminators and information-intensive researchers to individual home users of entertainment and information programs, both interactive and passive. Different types of licensing systems will inevitably be most appropriate for different kinds of information content and different categories of users. Government should direct its efforts toward encouraging network design that accommodates the broadest possible range of licensing environments, rather than channeling all this information into the strait-jacket of a single licensing system.

F. SHOULD TECHNICAL MEANS FOR PREVENTING UNAUTHORIZED USES BE MANDATED?

A wide range of techniques for protecting intellectual property in the advanced NII environment are now being explored. Some (such as encryption) are already in widespread use; others are now being tested in controlled environments. Some exist only on the drawing board. The variety of copyrighted materials that would be made available through the NII, and the range of needs of users of that infrastructure for different kinds of works, make it unlikely that any one technology for preventing unauthorized uses will ever be deemed suitable for all purposes. Thus, government action to require use of any one such technology, or even to set standards or parameters for such tools, is, at best, extremely premature. Government could more usefully encourage network providers to support a multiplicity of software-based methods for managing intellectual property.

Experience under the Audio Home Recording Act of 1992 may provide some valuable lessons for future applications of copy-management technology. However, the NII as a whole presents a considerably more complex picture than the circumstances leading up to enactment of the 1992 legislation. Among other differences, the advanced NII will be built upon an enormous installed base of networks and end-user hardware; will embrace a far broader spectrum of copyrighted material than in the digital audio marketplace; will encompass a far greater diversity of end-users than the home audio market to which the 1992 legislation was mainly directed; and will, in some fields, carry a far greater proportion of material in the public domain, or in which originators do not seek to exercise the full range of copyright protections. For these and other reasons, the 1992 legislation may not provide a viable model for the NII as a whole.

One aspect of the 1992 legislation may be worth serious consideration, however, particularly once a limited number of copy protection technologies have entered into widespread use within the NII. It may be appropriate at that point to consider legal sanctions against the distribution of devices or techniques whose primary use is to defeat or circumvent intellectual property management technology (such as headers or envelopes) which has been lawfully applied by or with the permission of the copyright holder. Cf. 17 USC sec. 1002 (digital audio); North American Free Trade Agreement Part 6, Art. 1707 (encrypted satellite signals).

F. WHAT EDUCATIONAL PROGRAMS SHOULD BE DEVELOPED?

None of the questions posed by the Working Group is more important than this one. Neither technical means nor legal requirements, nor even a combination of the two, will by themselves be sufficient to preserve and strengthen the needed incentives for creating and distributing works of authorship through the advanced NII. The obstacles are not just legal or technical, but also cultural: a culture of ignorance of, and sometimes callous disrespect for, intellectual property. Unless these cultural factors are addressed, the NII environment will never be fully hospitable to creators and other copyright proprietors.

Certainly one culprit here is a fascination with technology, viewed in isolation from other factors needed to produce useful and valuable information products and services. The ability to make a perfect digital copy of text, images, or multimedia presentations, and to make it accessible instantly to millions of users worldwide, is an exciting prospect. But it can also be a license to steal intellectual property cheaply, easily, and in a way that destroys any incentive for future creativity.

One of government's most important roles is to educate NII users about the importance of responsible use of the powerful new networks now at the disposal of millions of Americans. Education and training in use of information resources involves far more than instruction in how to use a computer, a modem, or an interactive television or telephone. It must also embrace a greater respect for the rights of others — civility toward fellow users of the information infrastructure; responsibility to maintain the security and integrity of information moving through the infrastructure; and respect for the intellectual property rights of creators and distributors, whose investment of time, resources and creativity has made it possible for end-users to enjoy and employ information products and services. Educating and influencing the behavior of individuals and institutions with regard to these issues must be a primary component of any federal effort to facilitate responsible use of the advanced information infrastructure.

The cultural status quo is not encouraging. Educators around the country report that too many students fail to grasp even the elementary rules concerning plagiarism, let alone subtler concepts of respect for intellectual property. At the same time, superficial shibboleths such as "information wants to be free" are moving beyond the more rarefied precincts of cyberspace, gaining currency in the mass media as well.

It would be both unfair and unwise to expect the government to shoulder the full burden of preparing a strategy to counter the alarming erosion of respect for intellectual property. All the other participants in the information economy have a crucial stake in reversing this trend: network and service providers, educators and librarians, the media, and business as a whole. None have more at stake than information content companies, however, and we recognize that we need to do more to step up to this problem. Our concerns for protecting intellectual property rights — our own and those of the creators and developers of the information products and services we distribute — must be articulated in plain English, not in convoluted legalese. We must be alert for opportunities to work with user groups to more clearly define the intellectual property rules of the road, and to provide more conspicuous incentives — both positive and negative — for compliance with them. And we must work with all other stakeholders, including government, to figure out the best ways to communicate these rules to the millions of individual Americans who, through their actions of respect or disrespect for the rights of others, hold in their hands one of the important keys to the success of the advanced NII.

IV. CONCLUSION

The Information Industry Association commends the Working Group for the questions it has posed and for the forum it has provided to hear suggestions about the answers. IIA shares the Working Group's goals and appreciates the opportunity to provide its perspectives. We look forward to cooperative efforts, with the Working Group and with many of the organizations represented at today's hearing, to address the challenges posed by the National Information Infrastructure initiative.

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 Marge Piercy
 Gerald Posner
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 Piri Thomas
 Anton Viorst
 Wakefield

Maria Pallante
 Executive Director

8 November 1993

Terri A. Southwick, Esq.
 U.S. Patent and Trademark Office
 Box 4
 Washington, D.C. 20231

By Facsimile
 (703)305-8885

Dear Ms. Southwick:

Following is a summary of the comments of the National Writers Union. On behalf of our members, I respectfully request the opportunity to testify on November 18th as to intellectual property concerns raised by the National Information Infrastructure.

As we discussed by telephone, it is impossible for us to submit full comments at this time. We would be able to submit more complete comments in time for the testimony and for your December 10th deadline.

Thank you for your consideration.

Sincerely,

A handwritten signature in cursive script that reads "Maria Pallante".

Maria Pallante
 Executive Director

CC NWU Executive Committee

**The Patent and Trademark Office
Department of Commerce:**

**Comments on
The National Information Infrastructure
and Intellectual Property Law**

**SUMMARY
of the Statement of Maria Pallante
THE NATIONAL WRITERS UNION**

8 November 1993

My name is Maria Pallante. I am a literary lawyer and Executive Director of the National Writers Union. I serve as a member of ACCORD, the Advisory Committee on Copyright Registration and Deposit appointed by the Librarian of Congress, and as a member of the Copyright and Literary Property Committee of the Association of the Bar of the City of New York. I am the former staff attorney of The Authors Guild. In these capacities, I have advised close to 2,000 authors on matters of contracts, copyright and freedom of expression, written amicus curiae briefs on cases of fundamental importance to creators, presented antitrust arguments to the U.S. Justice Department and testified before the Senate Subcommittee on Patents, Copyrights and Trademarks. On behalf of the National Writers Union, I request an opportunity to testify on the copyright issues raised by the National Information Infrastructure Initiative.

The National Writers Union is a nationwide organization of 4,000 authors. We have eleven chapters from coast to coast and an award-winning membership that includes journalists, poets, novelists, biographers, historians, children's book authors, technical and commercial writers, genre writers, textbook authors, essayists and academic scholars. The livelihoods of our members undoubtedly will be affected by the opportunities presented by the NII.

International trade in intellectual property is a major United States trade asset representing an enormous contribution to the international balance of payments. Not only is the United States the largest market for information and intellectual property, it is the world's largest producer and exporter of information and intellectual property. This applies to written works as well as movies and music. Just as it is small business and individual entrepreneurs who are creating most of the new jobs, products and services in the U.S. economy, it is individual authors who create most intellectual property. It is thus vital to U.S. trade advantage that individual copyrights and individual production and distribution be protected and encouraged, not just those of dominant corporations. Indeed, the policy of granting incentives to individual authors as a means to public creative wealth is a constitutionally based incentive that does not discriminate between commercial or noncommercial, published or unpublished, good or bad. We believe this policy serves the nation's diverse interests well. We thank you for this opportunity to present a brief summary of our interests and concerns.

SUMMARY

1) Is Existing Copyright Law Adequate To Protect the Rights of Those Who Will Make Their Works Available on the NII?

Existing copyright law is inadequate in the following ways:

1.) It does not definitively place electronic-based rights into categories of display rights, distribution rights or reproduction rights, thus it confuses creators and users as to both the scope of existing licenses and the fair market price of said rights that are the subject of negotiation.

2.) It does not statutorily prohibit users from claiming, via contract with a creator, those rights (usually electronic-based rights) that do not yet exist, and/or those rights that, at the time of negotiation, lack a measurable economic value.

3.) It does not set forth whether electronic rights in their various manifestations should be calculated on a traditional per use royalty scale or through income shares based on time rental or time access. Nor, (at the extreme end of the spectrum of current contractual and licensing abuses), does it discourage flat fee open-ended licenses that inherently undervalue copyrighted works.

2) Do the Existing "fair use" Provisions Adequately Accommodate the Interests of Users of Works Available via the NII?

Practical problems with application of existing "fair use" provisions are more the outgrowth of confusion about copyright law in general than from anything particularly wrong with the "fair use" doctrine. While non-commercial uses by libraries and educators should continue to be statutorily authorized, a fine line exists between actual "fair use" and ostensibly educational or research related uses that also undermine the market for copyrighted works. Copyright principles explaining the value and purpose of intellectual property should be readily available for drivers who access the Information Superhighway.

Confusion about "fair use" issues is a problem inherent in U.S. Copyright Law (you may not use anyone else's work without permission, unless . . .). Nonetheless, "fair use" is a limited exception and should not be broadened in its scope but, rather, should be clarified in its application. That is, "fair use" should continue to be based on the nature and purpose of the work used and the impact of a particular use on potential markets, not on the status of the user who is taking.

Significantly, copyright law must settle the question of whether works available via the NII are published or unpublished. "Publication," as traditionally defined, does not clearly cover activity where dissemination or access is achieved electronically without leaving the digital domain, without printing or traditional manufacturing, and without transportation of physically reproduced units to wholesale outlets and retail points of sale. Whether a work is "published" or "unpublished" can have severe repercussions as to application of the "fair use" doctrine, application of international law, availability of attorneys' fees and statutory damages and relative commercial value. It should be noted that authors of unpublished works do not consider their work to be

without value and should not be penalized by regulations intended for mass commercial distribution.

3) Should Standards or Other Requirements be Adopted for the Labeling or Encoding of Works Available via the NII so that Copyright Owners and Users Can Identify Copyrighted Works and the Conditions of Their Use?

We support the use of technology to develop tracking devices and depositories. Publicly accessible facilities would preserve the contents, including text and author's name, in non-erasable media in the order they were submitted. Invisible electronic signatures can be developed to prevent plagiarism through digital reproduction. It is also technically feasible to attach authenticating checksums to documents that would automatically reveal whether the document has in any way been altered. Finally, authors and owners of intellectual property should have the right to encrypt their works to ensure that copyrights are not violated. No one should be able decrypt such data except through due process of law.

4) Should a Licensing System be Developed for Certain Uses of any or all Works Available via the NII?

There should be a multiplicity of private licensing systems, the transactions of which should be regulated by a government body, that takes into account legitimate needs for exemptions from antitrust restrictions. Such licensing systems should allow networks and data carriers to automatically transfer payment to the copyright holder each time a book, article, artwork or file is accessed. They must also provide a mechanism for tracking use information and providing timely, accurate, and understandable reports to copyright holders regarding the electronic use of their material. Database compilations of intellectual property should always include permissions information: names of various rights holders of work; contact information for permission requests and other relevant data.

5) What Types of Educational Programs Might Be Developed to Increase Public Awareness of Intellectual Property Laws, their Importance to the Economy, and their Application to Works Available via the NII?

Clearly, education about general copyright law must be available to educators, librarians, researchers, students and private users. Without copyright law, creators lose the economic incentive to create; without such an incentive, the drive for creativity falls and progress towards the ultimate goal of increasing the public stockpile of creative wealth falters. Protection of the work of small copyright holders is basic to the public interest. Such protection can only be achieved through partnership with the public via general education on every level, in all academic settings, and in all public arenas.

Just as importantly, training programs built around access to hardware and software must be carefully funded and specifically promoted for citizens wishing to advance on the information superhighway. The NWU supports government-funded training at all levels.

END

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**Statement of Robert L. Oakley
on Behalf of Several Library and Education Associations
before the
Working Group on Intellectual Property of the
Information Policy Committee of the
National Information Infrastructure Task Force**

November 18, 1993

The rapid development of high speed computer networks is causing revolutionary changes in the way information is created and delivered. As the National Information Infrastructure expands to reach libraries, schools and colleges, and individual households and users, those changes pose challenges to the copyright system.

Although the library and education communities believe it is premature to propose specific legislative or regulatory reforms while the information infrastructure is still in its infancy, we are concerned about the need to reaffirm that the rights granted to educators and to libraries and their users apply in the electronic environment as they have in the paper environment. We also believe that the law needs some strengthening to allow libraries to utilize fully the newest technology to preserve the nation's heritage and to meet the needs of their users.

Library and education associations have been discussing the policy issues surrounding the development of the National Information Infrastructure. With regard to intellectual property, there is broad agreement on some fundamental principles. These include:

- * The basic purpose of Copyright under the Constitution is to serve the public interest by encouraging the advancement of knowledge through a system of limited rights for owners of intellectual property.
- * Intellectual property rights and protections are independent of the form of publication or distribution.
- * The intellectual property system should ensure a fair and equitable balance between rights of copyright owners and the needs of users.
- * Fair use and other limitations on the rights of copyright owners should continue in the electronic environment.
- * Compensation systems must provide a fair and reasonable return to copyright owners.

We are here today to explain and expand upon these principles, especially as they pertain to the use of digital information by educators, libraries, and library users.

Copyright exists for the public good.

The Copyright Act represents a careful balance between the rights of creators and the rights of users. The Constitutional purpose of Copyright is to "promote the progress of science and the useful arts" -- in other words to stimulate learning, research, education, and the creation of new works of art and science. This means that, as has been true in the past, the rights of copyright owners should be broad enough to provide a fair return on their work, but limited in the public interest so as not to inhibit the use of existing works, especially for research, education, and the creation of new knowledge. As Justice O'Connor wrote for the Supreme Court in *Feist*:

the primary objective of copyright is not to reward authors, but to promote science and useful arts. To this end, copyright assures authors the right to their original expression, but encourages others to build freely upon the ideas and information conveyed by a work ... This result is neither unfair nor unfortunate. It is the means by which copyright advances the progress of science and art.¹

The NII should preserve fair use and the library exemptions and allow for a variety of pricing structures.

The policy framework for the National Information Infrastructure should allow a variety of pricing structures. We believe that any system must accommodate distribution of some works at no cost to the individual user (or at least no cost higher than what might be charged for basic access to the network). There is much that is already flowing over the existing Internet without a cost to the end user, and there is much that could be added without jeopardizing the rights of copyright owners. These materials that should be readily available include at least three categories of works: (1) non-copyrightable works, such as works from the U.S. government, (2) works already in the public domain because their

¹ *Feist Publications, Inc. v. Rural Telephone Service Co., Inc.*, 499 U.S. 340, ___, 111 S.Ct. 1282, 1290, 113 L.Ed.2d 358, 371 (1991).

term of copyright has expired, and (3) works for which the author does not wish to exercise his or her copyright.

Just as our community believes that certain works should be available without any fee, so too they believe that certain uses that have been permitted without a fee in the past should continue on the same basis. In particular, fair use should continue regardless of the medium, whether electronic or print. It is true that we cannot know now exactly how the contours of fair use might evolve in the electronic environment. But as an equitable rule of reason, it should continue to be available to researchers, educators, and others making use of the information. Fair use is the means by which researchers learn, and in turn write, for the benefit of society. It is the fuel that drives the engine of progress envisioned in the Constitution and re-stated so well by Justice O'Connor.

Similarly, the library exemptions to the exclusive rights of copyright owners granted in section 108 must also continue in the electronic environment because they support the educational and research endeavors of library users. These exemptions support primarily preservation and limited interlibrary lending that is not a substitute for a purchase. These goals remain valid today even though the methodology of achieving them is shifting from print to electronic. In fact, with the exception of the preservation subsections, section 108 is neutral on this point, specifying merely "copies", not just photocopies. As a result, the interlibrary loan provisions of the Act strike a reasonable balance of allowing a library to request a copy of an article, even a copy delivered electronically, from another library as long as the other provisions of the Copyright Act are respected.

The Preservation sections of the Copyright Act, however, need some modest expansion to more adequately address the preservation needs of libraries because those sections limit preservation copying to a single copy in "facsimile form", meaning paper or microform. Because materials printed during the last 150 years are on paper that is becoming brittle with age, the need to preserve the nation's intellectual heritage from that period is a major cultural crisis. The preservation problem has captured the attention of librarians, scholars, and historians nationwide. Congress has approved funds to help libraries preserve such materials. Although today microfilm is still the medium of choice for preservation, it is clear that the technology is moving rapidly toward the time when preservation will be done electronically. The law should be amended to accommodate the newest preservation technology.

Digital works of enduring value will also need to be preserved. Experience shows that electronic publishers, like print publishers, will not keep a particular work available beyond the time when there is an economic incentive to do so. Accordingly it

will be the not-for-profit community in general, and libraries in particular, that will assume responsibility to preserve our intellectual heritage. The life-expectancy of most works in digital formats is only 15 to 20 years -- much shorter than the life expectancy of paper. In the case of digital works -- whether online, on tape, or on CD -- preservation takes the form of "refreshing" or copying the work onto a duplicate of the medium or even moving it to the next technological generation. The current law -- by its limitation of preservation copying to copying in facsimile form -- does not accommodate this increasingly important need. As a result, experiments with preservation of electronic media have been limited, and these problems inhibit the effort to determine where there may be economies of scale, an important element for the design of national preservation strategies.

Similarly, efforts to create digital libraries to store, archive and make resources available electronically, have run into barriers in the Copyright Act. For example, the Library of Congress has worked to develop an "American Memory Project", using computer technology to make major collections of photographs, documents, the written word, and historic sound recordings available via the computer. It is not hard to envision that such an important collection might be disseminated over the National Information Infrastructure. As they began the project, however, the Library found that many of the items they wished to use, while old -- from the 1930's, for example -- might still be within their term of copyright. Furthermore, in most cases, it was difficult, if not impossible, to determine and trace the copyright owner. Multiplied by thousands of documents and photographs, this worthy effort became essentially impossible, and the public has been deprived of a valuable learning device, even though most of the creators of the works in question would have probably consented readily to the use of their work, if it was still protected at all.

Librarians and educators have no desire to deprive authors, publishers, and other copyright owners of a reasonable economic reward for their efforts. Indeed, libraries have established elaborate practices to ensure that appropriate Copyright royalties are paid. The library and education communities believe that in cases like interlibrary lending and preservation in the electronic environment or the creation of digital libraries, Copyright should not be a barrier to education and learning. We stand ready to work with you, with publishers and other copyright owners, and with the Copyright Office and the responsible Congressional committees to develop reasonable solutions to see that the needs of users and owners are met.

Licensing proposals should accommodate fair use and library uses authorized in the Act.

The Working Group asked if a licensing system should be developed for certain uses of any or all works available via the NII and if so, if there should be a single type or a multiplicity of licensing systems. We have already addressed the need for the network to provide for a variety of pricing structures. Beyond that, however, the library and education community has had considerable experience with licenses for information and offers the following observations based on that experience.

Licenses -- whether compulsory licenses in the statute or contractual licenses agreed upon by the parties -- define the rights and privileges of the parties differently than the statute would alone. Unfortunately, many of the contractual licenses now in use for the acquisition of works in digital form fail to take into account legitimate uses under fair use or the library exemptions. The library community has considerable experience with licenses and we would like to work with interested parties to develop a better model. For example, as part of a project to digitize and archive both historic and current materials, the Columbia Law Library is working with publishers to develop a copyright tracking system that will preserve fair use and public access while at the same time providing the necessary controls on user access to electronic information. Licensing should be for those uses that exceed fair use or the other exemptions in the Act. The library and education communities are in agreement that licenses should not be used to contract around fair use, section 108, or the exemptions intended to facilitate classroom instruction.

Licenses for the acquisition of information create other challenges as well. Library collections are built for current and future generations of researchers. But increasingly in libraries we are seeing the substitution of licenses or article-based delivery services to replace subscriptions. These programs satisfy current university information needs, but they will have a significant economic and structural impact on libraries. With such programs libraries will not be able to retain the information to meet future requests. Archival responsibilities have traditionally been undertaken by libraries, not the commercial sector. It is critical that the NII support licensing agreements that provide for the archiving of electronic proprietary materials in a way that will recreate the collections and public spaces that have traditionally been represented by libraries.

Copyright labelling could facilitate distribution of certain works, but may be a standards issue, rather than a legal one.

The issue of copyright labelling, or the placement of some type of notice on the work, is one that has broad appeal. There is a great deal of material now flowing over the Internet that one may surmise the author does not intend to protect, but which is protected nonetheless. A notice or labelling requirement could clarify the ambiguity. On the other hand, it seems unlikely that the United States would ever return to the pre-Berne requirement of notice as a condition of copyright. Instead, this issue may be resolved by the network community itself. It may be, for example, that information providers on the network will develop a relatively easy way for authors to signal that they do or do not intend to exercise their copyright over a work. Such a system would facilitate compliance with the Act but not require an amendment to the Act.

Libraries and other educators will continue to educate users about their rights and responsibilities.

The working group asked about different means by which users of electronic information can be educated about their rights and responsibilities under the Copyright Act. Of course, there are many different ways this can occur. Obvious means include publication of books and articles in places where network users are likely to see them, the use of television and radio spots to remind users of their rights and obligations, and the use of a reminder in the sign on screen that allows the user access to the network. Libraries and educators have a good record of providing information to users in the educational community about their rights and responsibilities under the Copyright law and we will continue to contribute to this process.

Interoperability standards are important, but there is no need to look to the government for a solution.

The Working Group asked about intercommunication and interoperability standards. The library and education communities believe that such standards are essential to ensure the viability of the network and its ability to distribute information throughout the nation. In the United States, standards are usually established through a voluntary process that allows a wide range of participation. Our communities have been active participants in the standards development process and we assume that the working

group concurs that any efforts to assert government control over the process would result in a negative impact on accomplishing the stated goals of the NII. However, we do support government participation in the process and government adoption of the standards that emerge.

Conclusion

The library and education communities have gained some experience in the development, use, and limitations of networked information, and we welcome this forum as the first step of an ongoing process to examine the issues and determine what adjustments in law or regulation are needed to strengthen the basic goals of Copyright. We do see some problems that need to be resolved for libraries and the education community to use the network to its full potential. But existing law effectively protects both the public interest and the owner's interest in intellectual property, and the market place for networked communication is still fragile and evolving. We therefore conclude that it would be at least short sighted and perhaps harmful to the National Information Infrastructure and to the goals of copyright to make specific legislative or regulatory proposals at this time. We welcome, however, the opportunity to continue the discussion to find ways to achieve the goals of the Copyright Act in the context of the developing National Information Infrastructure.

* * *

The foregoing statement has been endorsed by the following organizations:

AMERICAN ASSOCIATION OF LAW LIBRARIES. AALL is a nonprofit educational organization with over 5,000 members dedicated to serving the legal information needs of legislators and other public officials, law professors and students, attorneys, and members of the general public.

AMERICAN LIBRARY ASSOCIATION. ALA is a non-profit educational organization of more than 57,000 librarians, library educators, information specialists, library trustees, and friends of libraries representing all types and sizes of libraries and dedicated to the improvement of library and information services.

ASSOCIATION OF ACADEMIC HEALTH SCIENCE LIBRARY DIRECTORS is an organization comprised of the directors of the 126 health science

libraries in institutions that are affiliated with the Association of American Medical Colleges.

ASSOCIATION OF AMERICAN UNIVERSITIES. Founded in 1900 by fourteen universities offering the Ph.D. degree, the AAU currently consists of fifty-six American and two Canadian universities with strong programs of graduate and professional education and research. Approximately half are public institutions and half are private. The association serves its member institutions through activities designed to encourage timely consideration of major issues affecting academic research and graduate and professional education.

ASSOCIATION OF RESEARCH LIBRARIES. ARL is an association of 119 research libraries in North America. ARL programs and services promote equitable access to, and effective use of, recorded knowledge in support of teaching, research, scholarship, and community service.

CAUSE, the association for managing and using information technology in higher education, is a nonprofit association whose mission is to enhance the administration and delivery of higher education through the effective management and use of information technology.

COALITION FOR NETWORKED INFORMATION. CNI was founded in 1990 to promote the creation and use of networked information resources and services that advance scholarship and intellectual productivity. The Coalition was established and is sponsored by three associations: the Association of Research Libraries, CAUSE, and EDUCOM. A task force of over 180 institutions and organizations provides the Coalition with many of the insights, initiatives, and resources it needs to pursue its mission. Members of the Task Force include higher education institutions, publishers, network service providers, computer hardware, software, and systems companies, library networks and organizations, and public and state libraries. It is a diverse partnership of institutions and organizations with a common interest in realizing the promise of networked information resources and services.

EDUCOM is a non-profit consortium of colleges and universities which is concerned with computing and communications issues. Its programs focus primarily on networking and integrating computing into the curriculum.

MEDICAL LIBRARY ASSOCIATION. MLA was founded in 1898, has 1,500 institutions members (medical and allied science libraries) and 3,500 individual members. Its major purposes are to foster medical and allied scientific libraries, to promote the educational and professional growth of health science librarians, and to exchange medical literature among the members. Through its programs and

publications MLA encourages professional development of its membership, whose foremost concern is dissemination of health sciences information for those in research, education, and patient care.

NATIONAL ASSOCIATION OF STATE UNIVERSITIES AND LAND-GRANT COLLEGES. NASULGC is the nation's oldest higher education association. A voluntary association of public research universities, land-grant institutions and many state university systems, NASULGC's membership includes 172 institutions located in all 50 states, the U.S. territories and the District of Columbia. Its member campuses enroll more than 2.6 million students and claim upwards of 20 million alumni. NASULGC institutions award approximately a half million degrees annually, including about one-third of all bachelor's and master's degrees, 60 percent of all U.S. doctoral degrees, and 70 percent of the nation's engineering degrees.

NATIONAL COORDINATING COMMITTEE FOR THE PROMOTION OF HISTORY. The NCC is an umbrella organization for 50 historical and archival organizations and serves as their central advocacy office. The NCC is committed to working on issues of federal policy and legislation that affect historical research, including access to federal information.

SPECIAL LIBRARIES ASSOCIATION. SLA is an international association serving more than 14,000 members of the information profession, including special librarians and information managers, brokers, and consultants. Special librarians provide their information expertise to corporations, government agencies, trade and professional associations, hospitals, museums, universities, and other types of organizations with specialized information needs.

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KING'S COLLEGE



WILKES BARRE, PENNSYLVANIA 18711

DEPARTMENT OF POLITICAL SCIENCE
(717) 826-5900

November 8, 1993

Hon. Bruce A. Lehman
Assistant Secretary of Commerce
and Commissioner of Patents and Trademarks
U.S. Patent and Trademark Office
Box 4
Washington, DC 20231

Dear Commissioner Lehman,

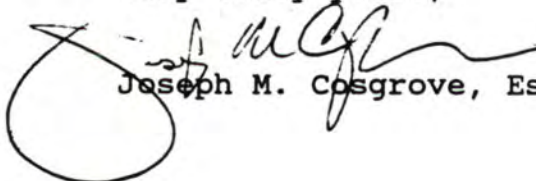
I write to request permission to present oral testimony before the National Information Infrastructure Task Force on November 18, 1993. My interest in this subject stems largely from my work as an Instructor of Constitutional Law at King's College, as well my private work in the field of Civil Rights and Civil Liberties. What I hope to offer the Working Group through my testimony and written comment is a perspective on the constitutional implications which development of the NII will entail. This perspective will focus primarily on copyright protection and:

1. The historic understanding of "user rights" vis a vis those of the holder, contained in Article 1, sec.8, cl. 8 of the Constitution;
2. The constitutional implications of restricting those rights in the face of proposed technologies that promise to expand availability of copyrighted material;
3. The constitutional necessity of guaranteeing a balance between improper commercial exploitation of protected works and availability of such material to the general public; and
4. The possible use of educational and other public facilities to enhance access to the NII by those unable to afford the tools necessary for that access.

I anticipate that my testimony will be brief, with all supporting material being contained within my written statement.

If you have any questions concerning my presentation, please do not hesitate to contact me.

Very truly yours,


Joseph M. Cosgrove, Esquire

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Summary of Testimony
Presented to
The NII Working Group on Intellectual Property Rights

November 18, 1993

Witness:

Dennis L. Bybee, Ph.D.
Associate Executive Officer
USA National Office
International Society for Technology in
Education (ISTE)
P. O. Box 4437
Alexandria, VA 22303

Phone: (703) 351-5243
FAX: (703) 351-5254
eMail: ISTE@SEAS.GWU.EDU

Affiliation:

ISTE is the 45,000-member, American-based professional education society whose members are directly involved in K-12 uses of advanced technologies in the classroom and in school administrative support.

Abstract of Testimony:

ISTE believes that access to and the availability of learning resources including all kinds of information in electronic form is essential to the improvement of education and training in America.

ISTE believes that the creation, storage, and retrieval of learning resources and information are all creative endeavors that should be compensated.

ISTE believes that the "fair use" doctrine may need to be revised but must be interpreted to ensure that all creative endeavors are compensated at the same time that universal access to learning resources and information is provided to all Americans.

Specific Comments on Issues Requested From 58 Federal Register
200, October 19, 1993, pg. 53917

The following comments are provided as expert opinion and are intended to represent **educational technology users** rather than to provide legal guidance on patent and trademark law.

1. Intellectual Property Rights of "Creators".

The user must have unrestricted access to information available through the National Information Infrastructure [NII].

Users must not be inhibited in any way from any use of available intellectual property.

The primary user concern here is for the FREE SPEECH RIGHT of use. There shouldn't be any restrictions on use; nor should there be any administrative burden placed on the user to limit uses to what seems "fair".

The National Information Infrastructure should recognize that education and training activities are public interest endeavors which are appropriately authorized as "fair uses" and which are administratively impossible to regulate as a means of protecting intellectual property rights.

RECOMMENDATION: To achieve FREEDOM OF INFORMATION FLOW, it is recommended that protection be universally and systemically provided for all creative works at the point of entry into the National Information Infrastructure and/or upon each instance of use.

ONCE IN - UNIVERSALLY AVAILABLE should be the guiding principle.

2. Encoded Standards.

In the new information environment, intellectual property rights should be given new meaning to ensure unrestricted access.

At present, intellectual property rights seem to govern all forms of use and dissemination with the creator having controlling property rights that are selectively conveyed to users on a case-by-case or use-by-use basis. If such an eclectic decision-making process were continued into the NII environment, it would impede the flow of information within the system and place an unacceptable burden on NII system administration.

Encoded standards are not the answer as their use would simply inhibit information retrieval and creation in derived sources.

Any attempt to restrict uses of intellectual property made available through the NII will be unacceptable to potential users and not result in the intended compensation of creators. Just as we found that copy protection devices were ineffective as means of controlling intellectual property stored on magnetic media; we must expect that encoded standards would be ineffective in the NII environment. Neither creator or user would benefit from use of encoded standards to control access. User access would be restricted; and limited use of creative works would reduce compensation to their creators.

RECOMMENDATION. Redefine intellectual property rights in the NII environment and restrict creative control to a simple one-time decision to PLACE CREATIVE WORKS IN THE NII OR NOT.

3. Interoperability. It is very important that all information in the NII be held in a common format and a common set of NII information archival format standards may be appropriate. It is NOT clear that there is a similar compelling need to establish full interoperability standards among accessing hardware and/or software systems. It is more likely that unregulated flexibility in accessing hardware and/or software systems would stimulate continued development of products and services in the information resource marketplace.

RECOMMENDATION. There should be a common set of NII information archival standards; but, no similar standards for accessing hardware and/or software systems.

4. Licensing System(s). A universal licensing system should be developed and implemented to fully compensate owners of creative works made available on the NII. The licensing system should provide one-time compensation for works at point of entry into the system and continuing compensation based on instances of use within the system.

A multiple licensing system should be avoided because it would create incompatible classes of information and unnecessarily restrict user access to available information. Rather than providing additional copyright protection, a multiple licensing system would minimize user access and creative compensation. Multiple licensing is incompatible with the previously recommended FREEDOM OF INFORMATION FLOW within the NII.

RECOMMENDATION. A single, universal licensing system should be developed and implemented to fully compensate owners of creative works made available to and used on the NII.

5. Unauthorized Reproduction. This term probably has different meaning in the NII setting. Information must flow freely within the system without restriction. Since it is expected that information resources will physically exist within the NII in only one location, from which multiple, simultaneous access is intended, the concept of reproduction is irrelevant and all access and uses within the system are authorized.

Unauthorized reproduction of materials outside the NII environment might be a problem if such materials were reproduced for distribution "off-line". But, if NII access is universal, there would probably be few competing commercial uses and such reproduction could probably be defined or controlled as simple "theft" from the system.

RECOMMENDATION. No restrictions or provisions for control of "unauthorized reproduction" within the NII are needed.

6. Educational Programs. Since it is expected that the new NII environment will result in new ways of interpreting intellectual property rights, there should be a comprehensive effort to inform the public on how this is being handled.

The Commissioner of Patents and Trademarks should begin this process by conducting seminars, workshops and conferences to inform creators of intended protections in order to facilitate their creative processes and ensure the availability of materials on the NII.

As the NII is developed and implemented, user training can be provided as needed.

RECOMMENDATION. In order to ensure maximum availability of materials on the NII, priority should be given to educational programs for developers and producers of intellectual property once the appropriate copyright provisions are developed.

NOTE: If there are few restrictions on uses of NII materials, there will be little need for user training to preclude "unauthorized uses".

Clinton Presidential Records Digital Records Marker

This is not a presidential record. This is used as an administrative marker by the William J. Clinton Presidential Library Staff.

This marker identifies the place of a tabbed divider. Given our digitization capabilities, we are sometimes unable to adequately scan such dividers. The title from the original document is indicated below.

6

Divider Title: _____

David H. Rothman, #240
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Terri A. Southwick, Attorney-Advisor
Office of Legislation and International Affairs
c/o Commissioner of Patents and Trademarks
U.S. Patent and Trademark Office
Box 4
Washington, D.C. 20231

November 1, 1993

Dear Ms. Southwick:

Many thanks for the information you supplied on the November 18th hearing of the Working Group on Intellectual Property. I would like to testify, listen to other witnesses and obtain prepared statements and transcripts. For almost a decade I have been writing about high-tech, and I am the author of half a dozen technology-related books, including the *The Complete Laptop Computer Guide* (St. Martin's) and *The Silicon Jungle* (Ballantine). Two new books, just started, will discuss some NII issues.

I am contacting you with several interests in mind.

- *Interest #1: As a citizen and a former poverty beat reporter, I fear that the new technology will aggravate rather than mitigate the "savage inequalities" of our schools and our society in general.*

Technology is destiny. We mustn't just make 35-inch HDTVs for inner-city children to watch Beavis and Butt-head. Americans also need small, affordable, sharp-screened computers--optimized for reading, writing and two-way communications on networks, especially by the young.

We need good, inexpensive electronic books, too, and educational software that everyone can dial up, not just the affluent. It would simplistic to blame our large conglomerates for all the complications of the information age. We must worry just as much about certain librarians who hope to use local servers to distribute copyrighted material. They are well meaning but mistaken. Even with subsidies and other adjustments, such plans could never bridge the gap between rich and poor libraries.

Steve Cisler of Apple Computer once looked up materials costs for public libraries in California in the era of paper books. He found "sort of a library version of J. Kozol's 'savage inequalities.'" In 1988 the per capita figures were: \$87.46 for Beverly Hills, \$4.93 for Butte County (rural north), \$16.77 for Los Angeles, \$27.63 for Menlo Park, \$25.52 for San Francisco, \$30 for Santa Clara County and \$2.51 for Shasta County.

Five years later I doubt that Shasta is breathing down Beverly Hills' neck in a library spending race. Nor are such outrages unique to California. I live in Alexandria, Va., where the public libraries have a horribly limited selection of books compared to nearby Fairfax County, and where many on high-tech topics are obsolete.

My TeleRead plan, expanded from articles in *Computerworld*, the *Baltimore Sun* and the *Washington Post*, offers an alternative to those same injustices.

It calls for a *national* library that would be comprehensive, universally affordable and reflective of the tastes of many librarians in many locations. At the same time I suggest that we *increase* funding of the present Internet. Indeed, we should integrate it with TeleRead, which could pick up the best technology and contents from servers on the Net. My vision is one of electronic federalism.

• *Interest #2: As a writer, I fear for my property rights in this new age, and I know that the more alert publishers share my concerns.*

Copy protection, encryption and other technology would not thwart bootleggers forever--not when the computer industry moves so fast and is so full of surprises. The more powerful we made our machines, the more vulnerable would be the "protected" books already published.

Basing copyright law on the copy-protection scheme du jour is like building a nuclear reactor and relying on advice from the administrators of Chernobyl. How many people foresaw in the Eisenhower years that palmtop computers in the Clinton era would be more powerful than the mainframes of past generations?

Silicon Valley technologists rank high on my list of heroes, but I wonder how many cipherpunks and other encryption boosters can fully grasp the intent of copyright law. It is not enough to protect a book for a year or even five years. Copyrights go on for decades and survive the deaths of writers. We're talking widows and orphans here, and about the right to reap the rewards of a life's work. If I died before my wife, and if Carly could no longer hold a job, would she have to cut back on necessities because literary law had suffered a CyberChernobyl? I fear that she might, if we relied too heavily in technology for protection.

As if the vagaries of technology aren't enough, human nature abhors protection schemes. Friends love to share online. Already some hackers are proposing digital collectives that would systematically violate copyright law. Who, however, needs a collective for piracy when the Internet already exists? I am sending you a disk that stores not only my *teleread.txt* file but also a file recording some possible violations of copyright law.

In the file, one Jay Gooby, logging on with a network address from the United Kingdom, casually asks how he might find an electronic copy of a short book by the novelist William Gibson. Mr. Gooby does not mention that *Agrippa* is copyrighted and has reportedly sold in various editions for anywhere from \$450 to \$7,500. Why should he bother to say this? By the time he makes his request, a year after the publication of *Agrippa*, the text might as well be a public-domain work like *Moby*

Dick or David Copperfield. To many network users, they are all the same. And surprises abound for the uninitiated.

"Good luck, kid," an American named Robert replies to Mr. Gooby. "The original e-text was designed to destroy itself after decrypting."

"Good luck, Robert," a third Internaut shoots back. "It's all over the net."

And it is. Mr. Gibson knew that pirates almost surely would crack the text; perhaps he relished the publicity. When *Agrippa* was released, his publisher told a magazine that a supercomputer could do the job but a personal computer could not. Sooner or later, however, given the progress of computer technology, even a notebook machine will be able to defeat *Agrippa*-style protection and imperil the value of thousands of books. This dizzying increase in computer power is a truism, a constant. And so is the eagerness of booklovers to share the frontiers of human imagination, copyright law be damned.

"I'll be buggered," a fourth user writes on the Net after learning that *Agrippa* has magically been transformed into freeware. "I'd heard that the *Agrippa* publishers were all heavy handed about any cracked version because the original sold for what, \$500.00? And that any cracked version would bring on the wrath of [the publisher]. I assumed that most servers would eschew starting a legal feeding frenzy."

Not so. Another Internet user actually places Mr. Gibson's work among the messages in alt.etext. Such charity is no chore. The uploading took a few minutes at most, and in the future might require a second or two.

Whizzing from continent to continent, the material appears complete with a copyright notice:

(C)1992 Kevin Begos Publishing

1411 York Ave.

New York, NY

All Rights Reserved

Well, theoretically reserved. In the era of global networks, *Agrippa* is reserved for millions of people throughout the world--anyone with a modem and an Internet connection.

So how should we respond? Unplugging the Net is out of the question. It already exists; it already has justified itself a hundredfold in economic and intellectual rewards. Well, then, what else? Should we ask U.K. authorities to let us fly Jay Gooby to New York for a trial? And what about the others, here in the United States? How about the operators of the computer systems on the Net that distributed the pirated property?

And how about me? I've provided you, after all, with an illegal electronic copy of a copyrighted work selling for hundreds of dollars at the least.

I have done so, of course, to defend property rights, not assault them. I am making a point that I'd hope Mr. Gibson would want to convey and perhaps already has: *High-tech has rendered our present copyright laws obsolete*. To preserve their spirit, and especially to protect writers and publishers, we must change the letter.

And the best way to change the letter is to reduce the financial incentives for bootlegging--both here in the States and in other countries. That is one of the key goals of my TeleRead plan, which would provide for fair compensation for creators while keeping electronic books affordable to rich and poor alike.

● *Interest #3: As a small business person like all professional writers, I hate bureaucracy; and I believe that the same TeleReaders used to display books should also be used for electronic forms to streamline transactions with the government.*

The U.S. Chamber of Commerce estimates that Americans spend at least several hundred billion dollars a year in time and money on paperwork for bureaucrats. What if we could reduce this amount by just a fraction? That would more than cost-justify the TeleRead program, especially if the same technology were used at the local, state and federal levels.

"Smart" electronic forms would not just allow taxpayers or Social Security recipients to enter information. They would quickly distinguish between, say, different classes of taxpayer. So the number of questions would be held down. What's more, detailed prompts--both on screen and in audio, if wanted--could guide the taxpayers through the forms. Needless to say, too, the taxpayers would not have to enter redundant data from past years. Mistakes would go down. The software would instantly alert the taxpayers if they entered incomplete or inconsistent data. Government clerks, including, yes, IRS auditors, would make fewer follow-up calls and take up less of citizens' time. What's more, Americans could use private software in place of government forms--giving birth to a whole new industry.

Obviously, then, beyond the simple matter of reducing data-entry requirements for the clerks, these forms could yield direct benefits to taxpayers and to the private sector.

Yes, the National Performance Review paper suggests that government is already committed to electronic filing, but TeleRead would dramatically speed up these changes. It would all be in the best tradition of information management. Single applications by themselves may not make any sense, but multiple applications, both e-books and electronic forms, can more than justify themselves. Needless to say, I'd be delighted if TeleReaders could also be used for commercial transactions--say, for hotel reservations--as well as government-related ones. Both TV sets and the more-portable TeleReaders could offer such capabilities. Obviously, too, TeleRead could simplify networking for doctors and reduce their paperwork burden in an era of complex health regulations.

For space reasons, I won't discuss the many other potential uses of TeleReaders, such as for better communications between citizens and their elected officials. Nor will I explain how a TeleRead program could promote community networks, or allow bookstores to sell paper copies of books in the national database. Or how the program could cope with the piracy problem not only in the United States but abroad, especially in developing countries. Or one of the most important matters of all--how we could drive down the cost of portable computers for

schoolchildren and others. It is all in the proposal, on which I have been working off and on since 1990.

The proposal also covers such issues as fair revenue for writers and publishers in the era of electronics books. I know that some writers groups will offer useful facts and opinions here, and I would agree all the way. Today writers can receive as little as ten percent of revenue on electronic books--a veritable outrage, given the lower cost of distribution--and I understand that some smaller publishers aren't doing well, either. We must not let the NII worsen an already-abysmal situation, especially with all the telcom-cable mergers contemplated. TeleRead would assure writers and small publishers a lane in the information highway, while at the same time being fair to large conglomerates.

Besides the PC disk with the TeleRead and *Agrippa* files, I am including:

- The paper version of TeleRead.
- William F. Buckley, Jr.'s column endorsing the idea. He is, of course, among journalism's leading defenders of property rights and business interests in general. I'm sending the copy from the *Washington Times* with the headline supplied by the newspaper's editors. The original column, dated May 17, 1993, went out under the suggested headline "The TeleRead in Your Future." A letter to me from Mr. Buckley said he was "hugely enthusiastic about your TeleRead idea." Some of fellow liberals still have trouble understanding that enlightened conservatives and business people will support new government programs if they benefit many groups, not just special interests, and if they make good, efficient use of tax money. The TeleRead philosophy--that of starting small pilot projects before undertaking massive spending--would avoid turning this endeavor into yet another government boondoggle.

- A copy of my *Washington Post* article on TeleRead. Please note that I have been constantly refining the proposal, and that, for example, I have dropped the suggestion of a tax on television and cable to finance TeleRead. We no longer need it because of the multiple-use philosophy. Cable operators, in fact, along with phone companies, could earn billions of dollars by supplying transmission facilities for TeleRead. And information companies of all kinds might be among the sellers of TeleReaders, which, of course, would also be offered through regular retail channels.

I hope this letter is helpful. Best of luck with the hearing.

Sincerely yours,

A handwritten signature in dark ink, reading "David H. Rothman". The signature is fluid and cursive, with a long, sweeping underline that extends to the right.

David H. Rothman

The World At Your Fingertips

By David H. Rothman

THE KID Next Door helped confirm the Big Bang theory. He was no longer T.K.N.D. of course—rather, a bearded professor of astronomy—but I could still see him as a gangly child perusing his father's physics journals. Ned was always a reader. Even before he could puzzle out words on paper, he was begging his mother to read to him about internal combustion engines. Years later he relied on public libraries, not just the local junkyard, when he built his first telescope. Luckily for science, Dr. Edward L. Wright grew up in Fairfax County—not in an inner-city neighborhood where the libraries were wanting and where he could never have found those arcane journals.

We just cannot say where potential Wrights will show up. Given current demographics, more will have to come from ghettos, barrios and other book-short areas. Suppose, however, that we live out an old dream of hackers and librarians. What if computers can lower the cost of providing books to inner-city kids, Appalachians and, yes, Fairfax Countians?

Already politicians have proposed online libraries. In the *Scientific American* of September 1991, for example, Al Gore wrote: "We have the technical know-how to make networks that would enable a child to come home from school and, instead of playing Nintendo, use something that looks like a video game machine to plug into the Library of Congress." A technology plan released on Feb. 22 in Silicon Valley, helped confirm the White House's interest in computer networks for the masses.

Questions, however, abound. How much will it cost to dial up books, articles, government records, phone directories and other material? And what about Al Gore's mythical child? Just how many books will he or she be able to retrieve without impoverishing the whole family? If commercial databases are any clue, the news will be bad. Extensive online research on just one topic can cost hundreds of dollars today, a real burden for students or small business people.

What's more, special databases for education would not be the final answer, even if they were free. The Edward Wrights of this world need all kinds of information, not just facts from designated journals. Except for proprietary material, we should put almost everything online for Americans to dial up for free or at little cost; and reading-computers should be affordable to potential users of online libraries.

Technology is destiny. What is our destiny, though, if video stores are everywhere yet half the school libraries in California have closed since 1982? Even the libraries in Fairfax County have cut back their hours.

Let me, then, propose a three-part plan, TeleRead, which would help students, other readers, writers and the American computer industry, too.

I. Impose a five-percent tax on TV-related sales

Many foreign countries tax television in one way or another. Why shouldn't the United

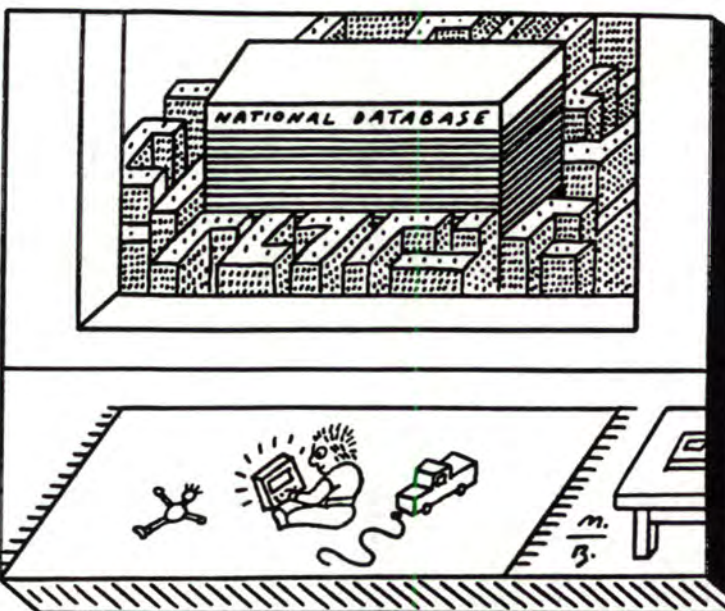


ILLUSTRATION BY MARIE BISHOP FOR THE WASHINGTON POST

ed States? And why can't we use the money to promote the activity that television has most imperiled: reading? Extrapolating from Commerce Department figures, we could collect about \$3 billion a year for TeleRead if we imposed five percent taxes on cable revenue, advertising sales of TV stations, and retail sales of new television sets and other video products.

The taxes would hardly bankrupt consumers. You would pay the equivalent of just \$3.50 annually if you kept a \$350 set for five years. If small merchants groused about new paperwork, the government might instead collect at the wholesale level.

Unlike many taxes, this one would directly benefit millions of Americans. Go to typical suburban public libraries on weekends, and you will see crowds of frugal citizens borrowing books to improve themselves professionally. Some college texts can cost \$75 or more. Even rabid tax-haters might champion TeleRead as a way to slash the acquisition costs at local libraries.

II. Make powerful, affordable laptops available to all

The student-computer ratio in American public schools is about 16-1; imagine a bureaucrat at Agriculture or Exxon sharing a PC with 15 c-leagues. So let's use part of the \$3 billion a year to help subsidize a long-range program to buy laptops that schools and libraries can lend to students and the public at large. Eventually the schools could even give away "TeleReaders" to many students from low-income families. By encouraging mass production, the TeleRead program would make laptops almost as cheap as calculators, so that middle-class children could buy them without any subsidies. The procurement program would award contracts in stages, of course, to avoid locking into outdated technology.

Equipped with TeleReaders or substitute machines, students would learn word-processing, swap electronic mail, and work with personal databases, spreadsheets and other applications, such as educational programs. Especially, however, TeleReaders would encourage reading, the most vital skill. They would be small and affordable and boast sharp, American-made screens that you could read more easily than you

could a paper book. If you wanted, you might even detach a TeleReader keyboard and curl up in bed with just the screen. You could instantly "flip" the "page" or move on to another chapter by pressing a button or by touching the appropriate part of the screen with a pen-like device. The same stylus would let you jot notes electronically, or underline or highlight key paragraphs.

Different TeleReaders might serve different needs. Some machines, for example, might be able to read material aloud and highlight the spoken words on screen—one way to help bring books to the very young, the vision-impaired and the semi-literate. Voice recognition could pick up commands from the handicapped. Eventually, some TeleReaders could take dictation; users could write in corrections with the stylus.

Besides supplying computers, TeleRead could make certain that equipment was used regularly and well—it could help pay the salaries of computer instructors to bring teachers and librarians up to speed. Let's not turn teachers into programmers, however. Rather, the instructors could show teachers how to apply high-tech effectively to their respective disciplines. Teachers in the future should be able to tell students how to write clear, well-organized prose with a word-processor, use spreadsheets such as Lotus 1-2-3, dissect electronic frogs, retrieve facts on a proposed national budget, or mail electronic notes to local members of Congress.

III. Set up a national database as soon as possible

TRnet, part of the TeleRead program, would offer an electronic cornucopia. Like most public libraries, it would avoid pay-per-read. TRnet would be free or would charge reasonably for an annual subscription based on family income, and perhaps included as an option on federal tax forms. The poorest Americans, of course, should be able to dial up TRnet without paying a penny. Consider TRnet an investment in our economic and intellectual development, and, if need be, use general revenue money to make the network affordable to all.

Reachable from anywhere in the U.S., TRnet would carry the full texts of all new books and other publications. How? All ma-

terial longer than 10,000 words, and intended for publication, would have to be in digital form before the government would grant copyrights. Washington could phase in this change with a voluntary program. As for undigitized material shorter than 10,000 words, scanners could pick up the images, either for conversion to computer text or as pictures to be dialed up on TRnet.

To transmit books and other material, TRnet could use old-fashioned phone lines, fiber-optic cables, radio or cable television connections—whichever cost the least. *The Great Gatsby* could reach you in a fraction of the time it took to watch a rerun of "I Love Lucy."

Before you booked into the network, you would answer a series of easy questions to pinpoint exactly what you needed. You might punch in the name of an author, dial up the network and instantly get a list of all of his or her works, with quick descriptions. Then your TeleReader would disconnect you from the network. At your leisure, without tying up the phone lines, you would go on to choose which books you wanted sent into your computer when you logged on a second time. Besides selecting by author, you could pick by publisher, editor, general category, subject, search words, geographical setting or other criteria.

TRnet could also transmit a wealth of educational software, of course, and teachers could choose the best programs for their students. Math and science students could especially benefit. And young immigrants could use software rich in moving images and synthesized speech to help them learn English. Normally, however, TRnet would favor the written word, which is so often the best way to pass on detailed instructions and convey feelings and abstract ideas.

Whatever the medium, TRnet would pay fairly. Software houses or independent programmers would receive royalties based on the number of times the public dialed up their creations. And the same arrangement could apply to individual articles from newspapers and other publications. In cases where writers kept rights to the articles, payment would go to them.

How about compensation for professional writers of books—and their publishers? Writers could sell to TRnet directly or, armed with this new bargaining power, could sign contracts with publishers. Without heavy production and distribution costs, publishers could pay far better on the average than they do now. Under TeleRead, writers and publishers would earn fees based on how often people dialed up books. Publishers could set advances by the expected number of dial-ups.

Yes, if TRnet gouged readers, then the public would bootleg books electronically and cheat authors and publishers; but if network use were free or low-cost, piracy just would not be worth the trouble. TRnet would actually safeguard literary property better than any copy-protection scheme that publishers might be contemplating.

Of course, TeleRead and its TRnet should be just one option for readers. We should still be able to buy electronic or paper books from publishers, stores and authors. That would be one way to cope with the risk of censorship by officious politicians (another way would be to make TeleRead an independent agency with long-range funding).

Skeptics might dismiss TeleRead and its TRnet as socialistic; but they are not, any more than a public library. If Andrew Carnegie—the 19th-century capitalist extraordinaire—were alive today, he would probably be funding demonstration projects, just as he helped small-town libraries across the United States, hoping that ambitious Americans could use the technology of the day to better themselves.

David H. Rothman is the author of "The Complete Laptop Computer Guide."

WILLIAM BUCKLEY JR.

A personal library in your briefcase

I have never met David Rothman, but we have spent many hours together communicating by telephone and (mostly) by electronic mail. He wrote a book on laptop computers, for which I furnished an introduction. He is a Catherine's wheel of ideas on how to maximize the uses of the computer.

He is not the poet that George Gilder is. He is, rather, the utilitarian, and his current bug, with which I am happily contaminated, is something called TeleRead.

In a single sentence, TeleRead would become everyone's personal library, only this one would fit into your briefcase, and could sit on your night table. Mr. Rothman is talking down the road a bit, but he is not sci-fi. He has in mind a machine with sound, color, and an ultra-sharp screen. It will store at least 1 gigabyte; that is the equivalent of 500,000 pages, which would give you approximately 500 books the size of "War and Peace."

On how to operate such a machine? It would be "toaster-simple." The primary objective of Mr. Rothman is to encourage reading.

It isn't likely that the average person whose habits have formed will begin to use electronic mail, but one learns from Mr. Rothman that four out of five women recently discharged after breast cancer operations opted to keep up to date on developments in medicine via a computer, to which they had been exposed in the hospital.

But primarily he is talking about the generation going to school. And the data here are discouraging.

William F. Buckley Jr. is president and editor at large of National Review and a nationally syndicated columnist.

There is, first, the growing indifference to printed matter, and then the high cost of library service and the diminishing supply of both necessary, and discursive, material. One library in one school didn't have a biography of George Washington at hand for a student who wanted it. In our high schools, there is one com-

The same computer card would make it possible for you not only to summon the text of the Rev. Martin Luther King's "I Have a Dream" speech, but also to hear his voice recite it.

puter for every 16 students. In this day and age, that is the equivalent of having only one pencil for 20 students a century ago. The technological trajectory from pencil to typewriter to computer gives us an unbroken glide path, and the idea is to exploit its possibilities.

Mr. Rothman's TeleRead is a conception comprehensively approached. It encompasses the aforesaid computer, which could log on the network only after the user gave the proper identification and password. The user could even have his privacy. He could dial up the material from a network that did not keep permanent records of individ-



ual accesses. Or he could go to a vending machine, pay cash, and electronically copy material to a small, removable card that plugged into the TeleReader.

The staple of TeleRead is the universal library, and this would accumulate via two devices. The first would call for the eventually scanning of existing books. (To scan, v.t.; the process by which printed matter is converted into digital code, for use by computers.) The second would conscript the cooperation of book writers by declining to copyright any book that wasn't sent in digital form to government libraries. Since most authors, or publishers, now put

books onto diskettes, this is not a heavy imposition.

Since we publish 45,000 titles every year, we would in 10 years have almost a half-million books that need not be scanned, because the work is done by the authors.

How would these authors be compensated? Mr. Rothman, I regret to report, says this would be done by a new tax, on television sets, which however would amount to only \$3.50 a year if the television lasted five years. Mr. Rothman also envisions low subscription fees based on family income.

TeleRead would pay writers a royalty based on the frequency their books were called up. We could use the same machines for "smart" electronic forms, through which millions could file income taxes and handle other federal, state and local transactions, saving oodles of money.

Andrew Carnegie, if he were alive, would probably buy TeleRead from Mr. Rothman for \$1, develop the whole idea at his own expense, and then make a gift of it to the American people.

It is a bracing idea, the notion that a student could go to the public library and read via TeleRead any book he wished to read, or any magazine. That, a few years down the line, the young people would have TeleRead computers of their own, even as everyone now has a television set. And the same computer card would make it possible for you not only to summon the text of the Rev. Martin Luther King's dream speech, but also to hear his voice recite it.

It will surely happen. There is no doubt Mr. Rothman will be alive when it does, as he is about to celebrate his second wedding anniversary.

TELEREAD AT A GLANCE

A *Time* writer was on the mark when he wrote of a hypothetical ten-year-old boy in the era of video games and information highways: "Just sit him down in front of a Sega Genesis or Super Nintendo machine, shove a cartridge into the slot and he's gone--body, mind and soul--into a make-believe world that's better than sleep, better than supper and a heck of a lot better than school."

Is it possible, however, that the information highways could also serve the public interest? Could sharp-screened computers, electronic books and educational software be made affordable to all? What about the haves vs. the have-nots in the information age? Could we avoid replicating "savage inequalities" online? And might information highways even *reduce* the cost of government?

TeleRead--expanded from articles in the *Washington Post* and elsewhere, and endorsed by people of differing political beliefs, including William F. Buckley, Jr.--tells how the Clinton Administration could truly stand up for the public interest here. Without a TeleRead-style approach, the knowledge crisis will be the next healthcare crisis.

This plan would benefit many groups--schoolchildren, parents, and teachers; students and faculty at colleges and universities throughout the U.S.; good librarians, who, in an era of dial-up books, could otherwise find themselves bypassed; minorities; the disabled, especially deaf and blind people; users and potential users of community networks, including those in low-income areas; and millions of other Americans who would suffer if our National Information Infrastructure accommodated vendors at the expense of the rest of us.

Still, TeleRead is hardly anti-business, quite the contrary. TeleRead would lessen bureaucracy's burden on businesses; upgrade the quality of the workforce; help newspapers go online and enjoy large readerships; reduce losses from bootlegging of text and educational software; make more money available to book publishers that truly added value to their offerings; let bookstores print out hard-copy books from a national library online; spur the growth of a major electronic forms industry; and create billions of dollars of new business for companies in computers and communications. Mr. Buckley, one of the journalism's leading champions of property rights, has written a column endorsing TeleRead ("The TeleRead in Your Future").

--David H. Rothman, Alexandria, Va.

* Internet: rothman@netcom.com * America Online: DavidHR
* GENie: D.Rothman1 * CompuServe: 73577,3271 * MCI: David H Rothman
* Prodigy: TNFN63A

Date of this version of TeleRead: October 30, 1993.

THE ACTUAL PROPOSAL FOLLOWS THE SUMMARY DIRECTLY AHEAD

TOWARD ELECTRONIC BOOKS AND LEANER GOVERNMENT: A SUMMARY OF TELEREAD

THE BASIC IDEA: Drive down the cost of books for all Americans, rich and poor. Reachable from anywhere in the country, a dial-up database would offer all newly copyrighted books for free or for a small subscription fee based on family income.

A "TeleRead" program might also include software and videos for educational use, and perhaps what is now shareware. And the same database could contain back issues and past articles from newspapers, magazines, and other publications that readers could dial up at no extra expense.

Publishers, moreover, could use TeleRead's TRnet to transmit fresh editions to paying customers. The government would offer special telcom rates to publications that now enjoy favorable postal rates; current issues would cost less than they do today on paper.

By including all kinds of "printed" media in one easy-to-use database--with powerful search capabilities--TeleRead would help promote reading and the spread of knowledge.

Furthermore, as explained below, the taxpayers would come out ahead in the end.

BENEFICIARIES: TeleRead would be a godsend to readers at every income level; students; researchers in academia, medicine, technology, business, and other fields; writers, editors, and publishers of good books; blue-, white-, pink- and no-collar workers hoping to upgrade skills; and millions of other Americans who would benefit from the knowledge that TeleRead made possible. TeleRead could even help save lives, by enabling medical researchers to enjoy a greater awareness of each other's work.

In addition, by promoting the mass use of electronic forms, TeleRead could actually reduce the burden of government. Citizens and business now spend hundreds of billions of dollars a year in time and money on government-created paperwork--from tax forms to regulatory reports. TeleRead would advance the goals of Vice President Gore's National Performance Review and eventually save tens of billions a year. The same machines used to display electronic books could be used for filling out "smart" electronic forms that guided citizens through the maze of tax rules and other regulations. Pen interfaces would be optimal for such tasks.

COMPUTERS USED: TeleRead would lower the cost of computers by promoting the production and refinement of TeleReaders. These small, sharp-screened machines would be just right for reading and other educational uses. TeleReaders would be designed for ease of use while allowing users to grow technically. The federal government could buy thousands of TeleReaders for schools and libraries to lend out when the technology was ready.

With mass production in full swing, powerful computers eventually could cost little more than fancy calculators. Almost all Americans by then could buy TeleReaders without subsidies, and use them for reading and other applications such as electronic forms.

Massive government contracts--from Treasury, the military, and other agencies--helped make the laptop industry what it is today. TeleRead would dramatically speed up existing trends. It would use well-defined technical standards so that many companies could compete for contracts to make TeleReaders for libraries and schools. Anyone could build TeleReaders for direct purchase by consumers; by far, most machines would be privately owned.

As for the computer systems used by the virtual central database, I leave it for others to come up with the exact configurations. The major criteria should be reliability, response time as perceived by users, and economy of operation. Although I envision a virtual central database, I have no problem with its using distributed technology, just so that all copyrighted books and other print equivalents would show up in one place. Please note the word "print equivalents." Our present Internet, with thousands of servers, would survive. The virtual central database could pick up the best content and technology from the servers. Simply put, TeleRead is a form of electronic federalism.

PAYMENTS FOR WRITERS AND PUBLISHERS: TeleRead would pay by such criteria as the number of dial-ups. Publishers could set advances according to the expected revenue from the TeleRead database. Writers and publishers, of course, would be free to publish material in other ways--including, yes, on paper.

In the end, TeleRead would greatly increase the amount of money available to writers and good publishers. Right now the writer of a book selling for \$20 receives maybe \$1.20-\$1.40 in royalties. TeleRead would mean that more money would go for writing and editing, and less for printing, distribution, sales, and other expenses not directly related to content. At the same time, by way of a program for paper books printed on demand, TeleRead would let bookstores and print shops participate.

Without TeleRead, writers and publishers will see middle people siphon away obscene percentages of their earnings. Book-writers today may get as little as ten percent of revenue from electronic rights. This is an outrage, given the reduced cost of distribution and the intent of traditional copyright law to promote fairness.

COPYRIGHT CONSIDERATIONS: The United States would closely work with other signatories of the 1988 Bern copyright convention. TeleRead would change the letter of international copyright law, but not its intent. The plan would balance the rights of creators and the public. Unpublished works and informal BBS postings would enjoy the same copyright protection that they do now. TeleRead would not publish proprietary information.

CHOOSING WHAT GOES ONLINE: Librarians would enjoy much more influence under TeleRead than they do today. (The proposal offers details.) At the

same time TeleRead allows writers and publishers to be able to bypass librarians if need be.

WHO WOULD OWN THE PHONE LINES: TeleRead would use private phone lines and cable and radio connections--opening up billions of dollars in opportunities for American corporations and their workers.

FINANCING: A TeleRead focusing on printed material and educational software would *eventually* cost about \$30 billion a year. Let the money come from general revenue. Cost-justify TeleRead by using TeleReader technology to promote the use of electronic forms. That could save tens of billions of dollars and more than make up for the \$30 billion a year.

RATE OF IMPLEMENTATION: TeleRead is not an instant solution. The plan would be implemented over a number of years, perhaps on a subject-by-subject basis, starting with educational, technical, scientific and medial works. We could begin with a voluntary program to encourage publishers to digitize books. The government would not start truly massive purchases of TeleReaders until the technology improved sufficiently.

PAPER BOOKS: A dial-up fee would be a dial-up fee regardless of whether it came directly from a reader's electronic request or from a bookstore or copy shop. Stores and shops would be required to keep accurate records of dialups or risk the wrath of the IRS.

QUESTIONS UNANSWERED HERE: They abound. That's why the proposal below is more than 25,000 words long.

Feedback encouraged.

**TELEREAD: HOW WE COULD MAKE ELECTRONIC BOOKS
AND EDUCATIONAL SOFTWARE AFFORDABLE TO ALL--
WHILE REDUCING THE COST OF GOVERNMENT**

Vice President Gore has long championed electronic books--a fine cause. But how much will books, educational software, and other material cost the average American family to dial up?

And is there a way to build millions of inexpensive computers with sharp, viewable screens that would be easier to read than paper books?

Technology is destiny. What's our destiny, though, if video stores are everywhere but half the school libraries in California have closed since 1982?

Here is a proposal addressing those issues--a refined version of articles in *Computerworld*, the *Baltimore Sun* and the *Washington Post*.

Recent versions of "TeleRead" contain a new wrinkle that should please many tax-haters. The proposal tells how we could save billions in the end by encouraging the mass use of electronic forms for tax returns, Social Security claims, reports for regulatory agencies, and other filings. Why use "TeleReader" computers just for education and reading?

In addition, the proposal now explains how a TeleRead network could supply bookstores and copy shops with electronic books to print on demand. Instant paper books would be good transitional technology for those wanting this. A dial-up fee would a dial-up fee, whether it came directly from a reader's request or from a bookstore's.

Vice President Gore's office has received a copy of the TeleRead plan and has forwarded it to the Office of Science and Technology Policy. William F. Buckley, Jr., endorsed the basic concept in a May column. See the "Updates" section at the end of this file for the latest information.

--David H. Rothman, Alexandria, Va.

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ATTENTION INTERNET USERS: This proposal is available in the following ways and more:

* Via anonymous FTP on ftp.utdallas.edu as /pub/staff/billy/teleread.doc, and ftp.cic.net as /pub/e-serials/related/teleread.doc.

* Via Gopher on gopher.cic.net in "Electronic Serials/Related Materials."

* Via anonymous FTP through inform.umd.edu. cd
inform/Educational_Resources/ReadingRoom/Disability/Journals/Access/teleread

* Via FTP on ftp.dana.edu in the nsfnet directory.

* Via Gopher on gopher.dana.edu in the K-12 Networking directory and the Internet Training/Resource Documents;NSF Net/NREN/NII Information directory.

I'll be updating the proposal; please e-mail me if you want the very most recent version.

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* How Electronic Books Could Cost Less and Be Easier to Read than Paper Ones. By David H. Rothman.

* Who Wins and Who Loses if Online Libraries Are Affordable? Students and teachers could be winners. On the other hand, some Washington think-tankers might not fare so well.

* Stamping Out Curiosity: The Trouble with Pay-Per-Read and "Knowledge Stamps."

* What They Bring Up Woz's Garage? Ten Myths and Responses. No, Apple wasn't started with government help. But an electronic library system for the whole country is not exactly going to emerge from Woz's garage. Here's a list of arguments against TeleRead--and cogent replies.

* The Origins of TeleRead. It is not a group, just one writer's idea, though other people are now helping to spread the word. Opinions here are only my own and not necessarily anyone else's (except in addendums by William Murrell and Jack Frisch).

* Acting on the Idea. Why you should not fax or e-mail the White House or your local member of Congress. Use plain old mail for reasons I'll explain.

* How to Reach Me (David Rothman). Please reply directly to me rather than to the network IDs of the people posting this file.

* Copyright Information. Alas, TeleRead does not exist yet, and cumbersome copyright laws do. So please read the copyright notice here if you want to publish this proposal on paper--yes, the old-fashioned way--or print long excerpts from it. You do not need permission to distribute the material online and pass out disks with the TeleRead file.

* Addendum One: Is Bridgeport the Future? (And a Few Words on the Knowledge Crisis in Other Cities.) What happens when cities cut library funds? and how are other people responding to the knowledge crisis?

* Addendum Two: An African American Reflects on TeleRead and Affordable Books. By William R. Murrell of MurrellBoston Telesis (CompuServe 71521,2516; Internet: Wmurrell@Delphi.com; GENIE HOSB Advisor: W.Murrell1).

* Addendum Three: TeleRead: One Person's Vision, One Person's Response. Comments by Jack Frisch, Professor Emeritus, Communications and the Arts, University of Wisconsin-Green Bay.

* Addendum Four: TeleRead and the Internet. Is TeleRead's TRnet a replacement for the Internet? Absolutely not. This addendum tells how TeleRead could help the Internet, whose traditional ethos this proposal very much reflects.

* Addendum Five: A Green Idea--Good for the Environment. TeleRead would help save energy and, ultimately, alleviate this country's garbage problem.

* Addendum Six: How to Make All Books Immortal. The issue is not just a technical one; it's a human one. Even the Library of Congress has failed to preserve all the books it should.

* Addendum Seven: TeleRead and Community Networks. Rather than replacing community networks, TeleRead would actually strengthen them. This section tells how.

* Addendum Eight: What TeleRead Would Mean to the Blind and Deaf. With all newly published books in digital format in a virtual central library, it would be much easier for libraries to service the disabled. In addition, some TeleReaders would be designed especially with the disabled in mind.

* Addendum Nine: Of Trolleys and "Savage Inequalities." TeleRead would be more fair to rural areas and inner cities than an alternative that some librarians are discussing--a system of independent servers housing the individual collections of different libraries. Under the librarians' system, however, libraries and their patrons might end up directly or indirectly paying outrageous amounts for books in some cases. And why blame the publishers? They would have to compensate for the ease with which e-books could be bootlegged. Worse, schoolchildren in inner cities and rural areas would suffer since poorer library systems could not buy as many books as the richer ones; we would be replicating online the "savage inequalities" of today's schools.

* Addendum Ten: Updates.

HOW ELECTRONIC BOOKS COULD COST LESS AND BE EASIER TO READ THAN PAPER ONES

By David H. Rothman

The Kid Next Door helped confirm the big bang theory. He was no longer T.K.N.D. of course--rather, a bearded professor of astronomy--but I could still see him as a gangly child perusing his father's physics journals. Ned was always a reader. Even before he could puzzle out words on paper, he was begging his mother to read to him about internal combustion engines. Years later he relied on public libraries, not just the local junkyard, when he built his first telescope. Luckily for science, Dr. Edward L. Wright grew up in affluent Fairfax County, Virginia--not in Harlem or Watts, where the libraries were wanting and where he could never have found those arcane journals.

We just cannot say where potential Wrights will show up. Given current demographics, more will have to come from ghettos, barrios, and other book-short areas. Suppose, however, that we live out an old dream of hackers and librarians. What if computers can drive down the cost of providing books to African Americans, Hispanics, Appalachians, and, yes, Fairfax Countians?

Already politicians have proposed online libraries. In the *Scientific American* of September 1991, for example, Al Gore wrote: "We have the technical know-how to make networks that would enable a child to come home from school and, instead of playing Nintendo, use something that looks like a video games machine to plug into the Library of Congress." A technology plan, unveiled February 22 in Silicon Valley, helped confirm the White House's interest in computer networks for the masses. With Bill Clinton looking on, Gore even summoned back his high-tech child.

Questions, however, abound. How much will it cost average Americans to dial up books, articles, government records, phone directories, and other material? And what about Al Gore's mythical child? Just how many books will he or she be able to retrieve without impoverishing the whole family? Will middlemen make killings at the expense of the rest of us? If commercial databases are any clue, the news will be bad. Extensive online research on just one topic can cost hundreds of dollars today, a real burden for students or small business people.

What's more, special databases for education would not be the final answer, even if they were free. The Edward Wrights of this world need all kinds of information, not just facts from designated journals. Except for proprietary material, we should put almost everything online for Americans to dial up for free or at little cost; and reading-computers should be affordable to potential users of online libraries.

Technology is destiny. What's our destiny, though, if video stores are everywhere but half the school libraries in California have closed since 1982? Even the libraries in Fairfax County, the ones where young Wright read about the galaxy, have cut back their hours.

Some optimists rejoice that private enterprise will take over from underfinanced public institutions, and that business people will make billions off an enlarged information industry. As a country, though, we can never grow richer just by selling bits and bytes to each other. Real wealth--for example, 100-miles-per-gallon automobiles, cures for cancer, and a well-informed electorate--will come from how we use information. The fewer price tags on knowledge, the more wealth created.

One researcher, Robert B. Cohen of the Economic Strategy Institute in Washington, D.C., says a sophisticated data highway in the U.S. could add \$321 billion to our national wealth over 16 years by making it easier for Americans to exchange ideas, develop new products faster and enjoy other benefits. Now imagine the social advantages of universally affordable databases containing tens of thousands of dial-up books and other material for our country's Ned Wrights.

Let me, then, propose a three-part plan, TeleRead, which would help students, other readers, writers and the American computer industry, too, and even save the taxpayers money in the end.

I. Make Powerful, Affordable Computers Available to All

The student-computer ratio in American public schools is about 16-1; imagine a bureaucrat at Agriculture or Exxon sharing a PC with 15 colleagues. So let's start a long-range program to buy portable computers that schools and libraries can lend to students and the public at large. Eventually the schools could even give away TeleReaders to many students from low-income families. By encouraging mass production, the TeleRead program would make computers almost as cheap as calculators, so that middle-class children could buy them without any subsidies.

Using TeleReaders or substitute machines, students would learn word-processors, swap electronic mail, and work with personal databases, spreadsheets and other applications, such as educational software. Especially, however, TeleReaders would encourage reading, the most vital skill. They would be small and affordable and boast sharp, American-made screens that you could read more easily than you could a paper book.

The screens would be flickerless; and you could adjust the size and style of the type, and perhaps the screen colors, too. If you wanted, you might even detach your TeleReader's keyboard and curl up in bed with just the screen. You could move on to other "pages" or reach other chapters by pressing a button or by touching the appropriate part of the screen with a pen-like device. A bar at the bottom of the screen might be divided into sections that each represented chapters or sections thereof. The same device could let you jot notes electronically, or underline or highlight key paragraphs.

Children could use the electronic pen to write essays by hand, but in my opinion we should encourage them to switch to typing by the end of elementary school. As a rule, good typists are far more productive on computers than nontypists are. Sooner or later TeleReader machines could all take dictation, and users could write in corrections with the styluses; but even then, keyboards would help. Many people might want to avoid the verbosity and imprecision that dictation often fosters.

Yes, TeleReaders could be designed not only to be light enough for reading, but also to be comfortable for extended periods of writing on a keyboard. You could use a pull-out wire stand to prop up your screen on your desk. In fact, the stand could even help you position the screen at the best angle and height.

Different TeleReaders might serve different needs. Some machines, for example, might be able to read material aloud and highlight the spoken words on screen--one way to help bring books to the very young, the vision-impaired, and the semi-literate. Even early on, we could make TeleReaders with voice recognition to pick up commands from the handicapped.

What about printers? Since the screens on TeleReaders would be so good, you would not have to print out books or magazines. Why clutter up your house? If need be, however, TeleReaders could work with low-cost inkjets, lasers or other printers. TeleRead wouldn't just promote the production of affordable portable computers.

The program could also make certain that machines were used regularly and well--it could help pay the salaries of computer instructors to bring teachers and librarians up to speed. Let's not turn teachers into programmers, however. Rather, instructors could show teachers how to apply high-tech effectively to their respective disciplines. Teachers in the future should be able to tell students how to write clear, well-organized prose with a word-processor, use spreadsheets, dissect electronic frogs, retrieve facts on a proposed national budget, or send e-mail notes to local members of Congress.

While aiding education, the TeleRead program would be a boon to Silicon Valley and other high-tech areas hit by defense cutbacks. Flat screens, new kinds of memory chips, and other technologies would grow more attractive to our oft-skittish venture investors. TeleRead would not ban the use of foreign parts or ideas, but within reason would favor computers with a high American content. Simply put, TeleRead would be a sane alternative to mindless tariffs such as the duties that the United States once slapped on some foreign-made screens for laptops.

Moreover, since the government would buy finished equipment, Washington would not need to set up a big research and development bureaucracy for TeleRead. Rather, the taxpayers could benefit from competition for TeleRead contracts and Silicon Valley could do its own R&D. What's more, the government would issue clear-cut standards for equipment so many vendors could compete on the basis of price, equipment capabilities, and past performance. A TeleRead agency could encourage small companies to team up with larger ones if doubts existed about their abilities to meet the demands of major contracts. Also to protect the taxpayers, the program would not buy up scads of portable computers at once; it would wait until the technology improved enough to justify truly large purchases. Even then, the program could send out RFPs on an ongoing basis to avoid overcommitment to outdatable technology.

II. Set Up a National Database As Soon as Possible

TRnet, part of the TeleRead program, would offer an electronic cornucopia. Like most public libraries, it would avoid pay-per-read. TRnet would be free or would charge reasonably for an annual subscription based on family income, and perhaps included as an option on federal tax forms. The poorest Americans, of course, should be able to dial up TRnet without paying a penny. Think of the I word, consider TRnet an investment in our economic and intellectual development, and use general revenue money to make the network affordable to all.

Reachable from anywhere in the U.S., TRnet would carry the full texts of all new books and other publications. How? Material longer than 10,000 words, and intended for publication, would have to be in digital form on TRnet for the government to grant copyrights.

We mustn't split hair at the expense of creators, so, certainly, exceptions could exist. For instance, if someone stole from an unfinished novel before the author had a chance to publish it, the writer would still enjoy full protection. So would an author shopping around for a publisher of a book or article. What's more, originators of informal postings on BBS systems, the Internet, and other networks would not have to register material to enjoy copyright protection.

Generally, however, the rule would apply. The government would phase in such a requirement with a voluntary program. As for undigitized material shorter than 10,000 words, scanners could pick up the images, either for conversion to computer text or as pictures to be dialed up on TRnet.

The United States would work closely with other countries to make such changes possible. Suppose an American copyrighted a book in another country that had agreed to the Bern Convention of 1988. Could such a copyright help circumvent the TeleRead laws? We must allow for such situations. Already TeleRead is in keeping with the Convention's intent to protect creators; as explained later, most writers would fare much better under TeleRead than under the present system. Still, TeleRead should be within the letter of international law, not just the spirit, and the solution is obvious: change the laws. The task is not so formidable as it might seem. The whole world is asking the same questions that we in the United States are: Just how can society compensate creators fairly and also make information affordable to rich and poor alike? And what to do about the flow of intellectual property across national borders by way of computer networks?

In the U.S. and elsewhere, debates are also heating up over the technologies that information networks could use to transmit books and other material. I propose no single solution. TRnet could use old-fashioned phone lines, fiber optic cables, or radio--whatever cost the least. No matter what the technology, the results would be impressive. *The Great Gatsby* could reach you in a fraction of the time it took to watch a rerun of "I Love Lucy."

Before you hooked into the network, you would answer a series of easy questions to pinpoint exactly what you needed. you might punch in the name of an author, dial up the network and instantly get a list of all of his or her works, with quick descriptions. Then your TeleReader would disconnect you from the network. At your leisure, without tying up the phone lines, you would go on to choose which books you wanted sent into your computer when you logged on a second time.

You could select not only by author, but also by publishers, your own pre-designated groups of publishers, editor, general category, subject, search words, geographical setting, or other criteria. If you keyed in "Washington" and "novels," you would see everything from *Democracy to Washington, D.C.* Or suppose you added the word "black literature"; then you could call up Afro-American fiction from the local writers. Inner-city teachers could easily track down books that meant thousands of times more to bright teenagers than anything on television. In fact, they could tailor reading assignments to individual children.

Electronic indexes needn't be the only technique with which TeleRead might eventually direct users to the right material. Via hypertext, you could highlight a word or phrase and be referred to another place in a text, or even to another book or article. Or you might use intelligent agents, sometimes described as electronic butlers.

Intelligent agents could prowl networks, looking for material of greatest interest to you, even while you slept. As telecommunications costs shrank, the agents could grow in importance. Certainly if we trusted agent-style software to ferret out books for us, a centralized subscription arrangement such as TeleRead would make more sense than a motley series of collections from providers of often-

pricey information. What if an agent accidentally downloaded megabyte after megabyte of material from a commercial library that charged outrageous fees? Or suppose that an agent-created summary misled you into thinking that an expensive e-book was much more valuable to you than it actually was? A truly centralized TRnet with low-cost, flat-fee subscription rates would end such risks. (For a clear explanation of intelligent agents, see Steve Levy's article in the May 1993 issue of *Macworld*.)

Although I have mentioned books and article in examples, TRnet could carry educational software, too, from which teachers and students could choose the best programs for them. Math and science students could especially benefit. And young immigrants could use software rich in moving images and synthesized speech to help learn English. In addition, it is also possible that TRnet could carry business and entertainment programs from people who now distribute their work as shareware. Let the software community help decide if TeleRead should include shareware of a noneducational nature. Certainly, given the high rate of piracy at many schools, TeleRead should cover educational software at the very least.

Educational videos also might be included eventually, and perhaps digitally transmitted radio programs of National Public Radio or similar networks. If NPR wanted, it could send out computer files of "All Things Considered" to be retrieved at the recipients' convenience. A private service called Internet Radio already offers digitized interviews for technically oriented people. The service even features a "Geek of the Week" spot.

Someday TeleRead could also offer electronic reproductions of art. That is exactly what the Library of Congress is already trying in a small way through a noteworthy experiment on the America Online service. Multi-media experts at the Library look forward to the time when people at home could take virtual-reality tours through great art galleries of the world.

The main purpose of TRnet, though, should be to preserve the written word. So often it is the best way to pass on detailed instructions, tell stories, and convey abstract idea and feelings. Powerful interests are aggressively promoting the growth of multi-media; now we need TeleRead to protect the survival of text.

Whatever the medium, TRnet would pay fairly. For example, software houses or independent programmers would receive fees based essentially on the number of times the public dialed up their creations. And the same arrangement could apply to individual articles from newspapers and other publications. When writers kept rights to the articles, then payment would go to them.

TRnet would allow publications a delay--maybe two weeks for daily newspapers and eight weeks for monthly periodicals--before the network posted issues online for all to see. The online editions could be highly customized for individual subscribers, just as some experts now foresee. These electronic periodicals could even offer interactive ads through which subscribers could order merchandise--which TeleReaders eventually would be able to display in color, and with moving images.

Newspapers and magazines could rely directly on phone companies and cable systems to speed these current editions to paid subscribers, but often TRnet might make more sense. Understandably, many newspapers see phone companies as rival publishers. Suppose, however, that telecommunications firms signed long-term contracts with TRnet; then the network could act as a buffer between them and the newspapers that subleased the lines at discount rates. The proposed merger of Bell Atlantic and TCI is just one more example of the need for TRnet to protect newspapers and other information providers.

What about TRnet's compensation for professional writers of books--and for their publishers? Authors could sell to TRnet directly, or, armed with this new bargaining power, they could sign contracts with publishers. Without heavy production and distribution costs, publishers could pay far better. Under TeleRead, writers and publishers would earn fees based on how often people retrieved books, and perhaps on other criteria such as length and subject matter. As a mass purchaser of material, TRnet could pay de-escalating royalties on best-sellers to discourage publishers from overhyping "big" books at the expense of mid-list titles. Publishers could set advances by the expected number of dial-ups. Outside business people could pay authors and publishers for rights to anticipated dial-up fees; let Wall Street invest in literary futures.

Yes, if TRnet gouged readers, then the public would bootleg books electronically and cheat authors, publishers, and literary investors; but if network use were free or low cost, piracy just would not be worth the trouble. Electronic books especially demand protection of this nature. Aging far better than most newspaper and magazine articles, they would otherwise be excellent prey for bootleggers.

TeleRead, in fact, would safeguard literary property better than any copy protection scheme that technologists might happen to be contemplating. Copy protection can often be just plain cumbersome, the last thing we need if we want to make reading as easy as possible. Users will demand the ability to back up or print information. And even if the computer world could devise a seemingly painless way to safeguard digitized text from bootlegging in the usual fashion, pirates could simply print out the material and then scan it back into digitized form. Inevitably, in fact, bootleggers could make the process all-electronic. Even CD-ROMs will not be safe in the future: you don't have to be Sony to be able to copy them. And the more powerful computers grow, the easier it will be to defeat our existing copy-protection schemes for all kinds of media.

Many hackers love a challenge and enjoy sharing the fruits of their labor with the world at large. The other day I copied off the Internet a book that sold in disk form for hundreds or thousands of dollars, and that self-destructed when read electronically. Hackers had defeated all protection, in effect placing the book in the public domain. I chuckled when I heard that the author had wanted this to happen. Witting or not, the lesson here was clear. Basing copyright law on the copy-

protection scheme du jour is like building a nuclear reactor and relying on advice from the administrators of Chernobyl.

Even encryption would not suffice by itself for popular books and many other kinds of material, illegal versions of which could be reproduced without much ado from authorized copies. Serial copying controls similar to the recording industry's just would not work. Critics have complained of crippled technology in digital audio recorders for consumers, and outraged editors have described easy ways to bypass the copy protection. Readers of electronic books would hate this intrusive technology even more. They would want to manipulate and share information without worrying about obnoxious protection schemes; and, inevitably, solutions would proliferate, everything from sophisticated software to the scanning of printouts.

Doubtless, then, we would be fools to rely on just encryption. Yes, it would be valuable in protecting material on the way to readers--for example, during a radio transmission. But the risks are too great that the information providers would lose control after the material reached its original destination.

So we need another level of protection, too: a way to drive down the costs of books to consumers and remove the incentive for bootleggers.

Without a TeleRead style approach, professional cyberthieves will thrive. And amateurs may do just as well. "You could join a collective to purchase some information and decrease your actual cost by orders of magnitude--that is, until it is almost free," one hacker has been quoted in *Wired Magazine*. He praised such arrangements as "increasing the margins where the poor can survive."

That is the mindset that our legal system would face unless we changed the letter of copyright law to preserve the spirit. Get set for Prohibition II--the cybernetic equivalent of the bathtub-gin era--in which law-breaking becomes the norm. Yes, existing computer software tends not to have copyright protection, and major bootlegging does occur already; but illegal users often go legal in the end because they want technical advice. By contrast, the readers of electronic books wouldn't need such assistance and could more easily share and sell the pirated copies.

Unlike newspaper and magazine publishers, many publishers of books would not enjoy the consolation of knowing that more readers saw advertisements in an era of mass bootlegging. They might oppose ads in practice and principle. Certainly, if too conspicuous, ads would lessen the worth of serious books requiring sustained concentration. I myself can see unintrusive ads in some books, but would hate to see them become the norm, as they might without TeleRead. Many advertisers might then be loath to sponsor "downbeat" books, and our national literature would become more TVish than ever. Moreover, the written equivalents of sleazy infomercials would grow more prominent in the publishing industry. And schoolchildren, millions of whom are already forced to sit through Channel One's pitches for fast food and through other hard sell, would end up with ad-riddled

textbooks. The most conscientious publishers would try to avoid obnoxious advertisements in textbooks and serious books in general, but then would face the bootlegging problem. Such would be life without TeleRead, especially as computer networks grew in speed and even average users could transmit whole books over the wires in seconds.

If we did go the TeleRead route, would the virtual central database itself invite abuses? Could the unscrupulous type their names over and over again, go on for 60,000 words, and have friends dial these nonbooks at public expense? Unlikely. Anyone could post almost anything on TRnet, after storage costs dropped sufficiently; but professional librarians, each working within his or her own allotments, could help decide which works merited royalties. The librarians would be at national, state and local levels.

After a certain number of dial-ups, almost any book or program could earn fees regardless of the wishes of the librarians. Writers and publishers would also be able to bypass librarians by gambling a certain amount of money up front to reduce the number of dial-ups required for royalties. The TeleRead laws might require TRnet to reserve maybe a third of its budget for "bypass books," as I'll call them: books that librarians did not approve. By raising or lowering the fees charged authors or publishers, the network could help control the total bypass expenditures. Sharply de-escalating royalties on the very biggest best-sellers would also keep a lid on costs.

That still leaves open the question of TeleRead's total expenses. To be hypothetical, suppose we could immediately put all paper books and some other material on TRnet. My tentative estimates add up to \$30.05 billion:

- * \$10 billion for online books, which would be more appropriate than the less than \$5 billion that book publishers most likely spent on writers and editorial workers today. The \$5 billion is my estimate based on a book industry study and on informal talks with publishing authorities. In a nation with a Gross Domestic Product of more than \$6 trillion a year, it is an outrage that so little now goes for editorial expenses associated with books. All of society suffers when book writers--major disseminators of knowledge--do not receive fair compensation for their work. If you want to place the present \$5 billion in context, consider the 1992 revenues of just one company in the computer industry, Intel. The gross reached some \$5.8 billion.

- * \$0 for fresh editions of newspapers and magazines--including academic journals--since TRnet would be a mere conduit.

- * \$5 billion for past editions and old articles. That's a fifth of the approximately \$25 billion that American readers pay each year for newspapers and the magazines, according to Commerce Department figures.

- * \$50 million for articles and papers that TRnet bought directly. As any professional writer or academic can tell you, some of the most valuable writing will never find readers because it is outside the commercial or academic formats of existing publications. Granted, thousands of Americans would upload material to

TRnet without counting on financial rewards. But TRnet could at least hold out a slim possibility of pay. The amount of money in this category would be kept small, so that TRnet was not competing with commercial newspapers and magazines.

- * \$3 billion for educational software, or about three times the amount that schools and families now spend if you extrapolate from statistics of the Software Publishers Association.

- * \$2 billion for computers for libraries, schools and some low-income people, and some computer training programs for librarians and teachers. A billion dollars could buy a million TeleReaders at \$1,000 each, or, eventually, 10 million computers at \$100 each. Again, the idea is not to give every American a machine, but rather to spur production of good, affordable portables for reading.

- * \$10 billion for staffers, telecommunications and leasing of computer facilities. Many would consider the \$10 billion to be far high. I've tried to err on the cautious side. Staff costs would be low since TRnet would rely heavily on existing librarians, who are already accustomed to choosing books for public use. Telecommunications might well be the biggest cost. Rather than squandering tax money on rapidly outdatable technology, the government could rely on cable systems and private phone companies. As much as possible, TeleRead could take advantage of the nooks and crannies of existing networks. The system might even offer bargain subscriptions to user willing to dial up their books outside peak times. Also, TeleRead could lease private computer facilities to avoid technolock (technolock: n. A tendency of many large bureaucracies to keep using antique equipment to justify past investment).

The hypothetical \$30.05 billion total is about two percent of the federal government's 1993 budget, or around half a percent of the Gross Domestic Product. What's more, the actual first-year expenses of TeleRead could be in the hundreds of millions, and perhaps much less. Only a minority of Americans would sign up in the beginning if we limited the first users to specialized books and articles of a scientific, technical, medical or educational nature. Modest subscriptions fees--maybe \$50-\$100 per year for an average family--could help pay this scaled-down program.

Let a lean TeleRead sell itself. Then, as the economy picks up and reading computers grow more powerful, support will pick up for a full-service system that can give Edward Wrights all the books they needed.

Of course, TeleRead and its TRnet should be just one option for readers. We should still be able to buy electronic or paper books from publishers, stores and authors. That would be one way to cope with the risk of censorship by politicians. Another way would be to make TeleRead an independent agency with long-range funding, or, at the very least, insulate a part of the Library of Congress from political influence.

Also, TRnet must not compromise privacy. If the program charged nothing or just flat subscription fees, there would be no need to keep permanent records on

the reading choices of individuals. When you retrieved a controversial political work--in fact, anything--your machine would tell TRnet to pay the author or publisher. But the central computers would be programmed to forget your personal selections in a week or two. TRnet would keep the temporary records only as a way to guard against constant dial-ups by those profiting off them.

What's more, for the really worried, private companies such as Barnes & Noble could set up vending machines that would accept old-fashioned, untraceable paper money as well as nameless debit cards. The machines would copy books onto a tiny memory card that plugged into your computer and held many volumes. Bearing bright logos, such machines could be a fixture at malls, airports and other public areas. They could serve both the privacy-minded and people who just did not want to become regular subscribers (revenue would go both to TRnet and operators of the vending machines).

America's bookstores, and copy shops, could also profit in other ways. For readers who favored paper books, they could print out material distributed on the network. The book industry has long talked about paper books on demand as a way to reduce inventory problems. TRnet might electronically transmit eye-appealing covers and page layouts; and with the high-resolution color printers of the future, these books-- on-demand could win over even the most die-hard technophobes. Each time a store downloaded a book, the author or publisher would receive a dial-up fee as if a reader had logged on to TRnet directly.

Printing machinery could hook into TRnet to report multiple copies-- no great burden on the merchants' part, since they would pay low subscription charges for unlimited access to whole network. Of course paper has its environmental costs. But as one reader of this proposal has suggested, discarded papers books could be recycled--perhaps for credit. Without doubt, instantly printed books hold great promise as transitional technology.

In the end, however, TeleRead's purely electronic books would be the best, most economical way to spread the written word. Without TeleRead, students, teachers, and other Americans may never be able to read so much and so cheaply by way of one easy-to-use database. Dr. Vicki Hancock, an educational technology expert at the Association for Supervision and Curriculum Development in Alexandria, Va., says: "This program would benefit average students as well as gifted ones, and it would better prepare Americans for work in an information-dependent society."

III: Cost-Justify TeleRead By Encouraging the Use of TeleReaders For Government-Related Paperwork

Visit a government office, and you'll see batteries of clerks typing away, tapping out data from citizens and businesses. What a waste. Suppose Americans could fill out forms on TeleReaders or equivalent machines, then send the

information over the phone lines--directly to government computers. Easy-to-use software could guide you as you worked on your taxes or otherwise engaged in an official transaction.

These programs would be no dummies. You would supply the relevant facts about your family or business, and then the software would tailor the questions to you. Perhaps you could even switch on a synthesized voice--if you wanted--to reinforce the instructions you saw on the screen. What's more, the programs might tie in with commercial software meeting official specs, so that, for example, you would not have to re-enter items from your electronic checkbook. Indeed private industry could supply "TeleForm" programs of its own for people not wanting to use the official software. Public or private, the software would let you know how it toted up your taxes--and let you change any entry if you disagreed. The Internal Revenue Service might challenge your return later on, but at least you would still enjoy just as much control over the tax form as you do now.

Working with these TeleForms, we'd all come out ahead. We would spend less time and money keeping Uncle happy. Small businesses, especially, would welcome the reduction in paperwork, which is as much a cost of government as taxes themselves are. And the bureaucracies could more easily digest the information--without any need to rekey it, and with less need to pester citizens about errors or missing facts. The forms would be well enough structured to encourage more responsive answers. Moreover, since TeleReaders would use pen interfaces, not just keyboards, citizens could even sign tax papers and augment digital identification the old-fashioned way.

Tax forms are just one example of how TeleRead could help Americans in areas besides reading. What about Social Security forms? Software could deal with all kinds of "ifs" when Americans applied for benefits. We could reduce the staffs of hundreds of local Social Security offices--doing this slowly over a period of time to cushion effects on workers. Similarly, government at all levels could use "TeleForms" to handle matters ranging from drivers licenses to unemployment compensation, health-care claims, and applications for government-backed loans. What's more, e-forms and databases could help match up workers and jobs in a truly massive but cost-effective way. Imagine the benefits for small business.

Computerized forms, of course, are hardly a revolutionary idea. Even now, with inexpensive software, you can create a paper tax-return or even an application to work for the government. And the IRS is working toward electronic filing of returns from ordinary citizens directly--not just from tax-preparation firms. IRS also plans to spend a fortune on scanners to pick data from paper returns. But direct filing by computer is the future, if the National Performance Review is any indication. TeleRead would dramatically advance such goals. It would drive down the cost of computers for all, promote mass computer literacy, and encourage refinement of computerized forms.

As I have said earlier, a huge TeleRead program should not start immediately. But imagine the potential for greater efficiency in government when TeleRead reaches full size and most Americans use TeleForms. Americans today are spending hundred of billions of dollars a year in time and money on paperwork for federal, state and local governments; so says the U.S. Chamber of Commerce. Whatever the amount, it's surely mind-boggling. If electronic forms can trim the total by just a fraction, we are talking about tens of billions of dollars of savings from increased efficiency--enough to pay for TeleRead and still come out ahead.

Even with financial benefits galore, skeptics might dismiss TeleRead and its TRnet as socialistic; but they are not, any more than a public library. If Andrew Carnegie--the 19th-century capitalist extraordinaire--were alive today, he would be probably be funding demonstration projects, just as he helped small-town libraries across the United States, hoping that ambitious Americans could use the technology of the day to better themselves.

David H. Rothman is the author of *The Complete Laptop Computer Guide* (St. Martin's Press).

WHO WINS AND WHO LOSES IF ONLINE LIBRARIES ARE AFFORDABLE?

No, electronic books will not make all teachers and librarians go the way of blacksmiths--quite the contrary. Even book chains could find new roles. On the other hand, TeleRead could be traumatic for some of the more mediocre of Washington's think-tankers.

Move ahead twenty years now; here's life in the TeleRead era.

Teachers and Students in General

Humans in the classroom offer kindness and encouragement that silicon chips can never replace. Teachers dial up TRnet to learn their subject matters better. On paper and in classroom discussion, they demand more of students--who can tap into the same databases. With so many books and educational programs to retrieve, teachers can customize lessons for students with all learning styles. If high school students show enough discipline, they can spend just several hours each day in school.

Also, students suffer less rote learning and fewer multi-choice exams. TeleRead has revived the old-fashioned essay as a way to teach the research skills and logical thinking that 21st-century workers need. Students modem in their term papers. From elementary school on, they accustom themselves to working off computer screens.

Schools at all levels save billions on textbooks and have more to spend on other resources and faculty salaries. And students at public schools and state universities can retrieve the same books as those at prep schools or Ivy League institutions.

What's more, students can keep using TRnet long after they earn their college diplomas. Back in the '90s, some farsighted educators proposed that colleges and universities build the costs of electronic books into tuition; and certainly such an approach would have been superior to the old system of overpriced paper textbooks. But it was not the ultimate solution, not in an era when Americans needed to keep updating their skills. The educators realized, then, that there was a better way, and they lobbied for affordable books for all citizens on and off campus. They understood the mission of great universities: not just to enlighten students, but also society at large.

Professors of Literature--and Historians

Taking advantage of dramatic reductions in the cost of mass storage, TeleRead lets most everyone contribute to the central database. Granted, readers can filter out the extraneous and restrict searches to publishers of their choice, but they at least have the capacity to track down out anything. One database contains all--everything from first novels to Homer.

Now, think what this mean to professors of literature. Centuries from now, academics can discover obscure works that mean more to them than the most heralded books of the current century. Does not each generation relive the past? At the same time, this secure database means that already-ancient classics can better survive TV, multi-media, and the rest.

Historians benefit, too. With so many thousands of contemporary manuscripts preserved, future researchers will better understand our politics and culture. TeleRead is be an electronic time capsule.

See Addendum Six, "How to Make All Books Immortal." Also please see the "Everyone" section of this essay.

Librarians

Paper books remain on library shelves. But spending for new ones has fallen off steeply. Librarians teach patrons to use TRnet, offer assistance online, and help the national program select books that immediately qualify for dial up fees. The profession enjoys new power. Well-educated librarians play a bigger role in determining the nation's reading tastes than do the marketers at the large book chains.

Compared to the past, today's librarians devote less time to clerical duties and more time to judging the worth of potential acquisitions. Under pressure from librarians with easy access to a wide variety of facts, book publishers are more diligently fact-checking their nonfiction than in past years.

This is not to say that librarians reign unchallenged. Publishers and writers can bypass the librarians more easily than they could bypass the large book chains of the past.

Small Bookstores

Book-loving proprietors still cater to traditionalists who favor the paper books.

For a few dollars, however, a bookstore or copy shop will print out a paper copy of anything online and put it in an attractive binding. When a store runs off a paper copy, the author or publisher will receive the standard dial-up fee. If the store makes 25 copies of a single book, its machinery simply reports the fact to the TRnet--but the store pays nothing extra, since TRnet is flat-fee. Merchants pay fees through the Internal Revenue Service and would be guilty of tax fraud if they misreported the incomes on which the fees were based. But the fees are so small that this rarely happens.

What about the prices of these instant books to consumers? Since readers can dial up material directly on TRnet, the bookstores and copy shops try to keep prices reasonable.

Publishers, of course, do what they can to encourage dial-ups by stores as well as individuals. Via TRnet, they transmit digital information through which local stores could print attractive covers and page layouts.

Besides offering paper books, small stores have set up vending machines that can copy electronic books onto memory cards owned by the customers. Even the bookstore owners will not know the choices of customers who insert paper money or nameless debit cards into the machines.

Certain bookstores have also become publishers, often specializing in locally oriented books. Thanks to TeleRead, however, it's easy to distribute books nationally.

Many good clerks have remained behind to sell paper books, answer customers' questions, and put out chatty newsletters online that draw people into the stores to discuss books and meet local authors. Some other clerks have left the business and become literacy instructors, teachers, editors, and, yes, writers.

Bookstore Chains

Like the small stores, chains still sell paper books*traditional or printed out from TeleRead. They also:

- * Sell TeleReaders with capabilities far beyond those of basic models.
- * Have installed thousands of book-vending machines in their stores and in public places.
- * Offer electronic networks, too, for people who would rather not deal directly with the TeleRead program. The program lets the chains enjoy enough of a markup to make such efforts worthwhile.
- * Encourage their local stores to imitate independent stores and publish online newsletters--and otherwise serve the people of Albuquerque, Chicago, or San Jose.
- * Publish books themselves.

Since books are available directly to consumers everywhere by way of TRnet, the chains no longer dictate to the publishing world as they once did. But a major

role for them still exists. And of course, some chains have themselves become publishers.

Book Publishers

Editors have risen in importance in the book industry; sales reps and marketers have declined. The overwhelming majority of professionally edited titles qualify for royalties on TRnet; if they do not, the publisher can pay to get them on the network as bypass books. All publishers enjoy coast-to-coast distribution. What's more, readers can easily key in list of their favorite publishers to limit the scope of subject searches or check up on the latest offerings from Random House, St. Martin's, or whatever other houses they favor--small publishers or large.

Midlist works thrive. Publishers of all kinds have grown more adventurous in their selections since they do not need to gamble fortunes on paper, printers and warehouse space. They no longer worry about local or federal governments taxing their back lists to the detriment of non-best-sellers. What's more, publishers no longer have to bow so often in the direction of chains obsessed with sales. They will encourage stores to tell customers about their latest, greatest books; but they no longer must endlessly court the chains' book-buyers.

Thanks to TeleRead, the transition to electronic books was less bumpy than publishers expected. When a voluntary program started, some publishers even used TRnet as a way to test the market for certain paper books. Now, of course, virtually all new books are available electronically. Also online are many old titles that were copyrighted before TeleRead; authors and publishers naturally gravitated to where the big market was.

Newspapers and Magazines

Like paper books, traditional newspapers and magazines have not vanished, but sooner or later, most readers switch to TRnet. Good reporters and editors thrive. Publishers must offer enticing news and prose, or see start-ups take business away. Many old publications, however, are earning bigger profits these days--since they spend less on paper, printing and distribution, and since Americans are more word-oriented. TeleRead is the ultimate newspaper-in-the-classroom program. Students dial up textbooks on the same machine they can use to read the *New York Times* or the *Chicago Tribune*.

Writers of Books and Articles

Few have become millionaires, just as in the past; but thanks to TeleRead's de-escalating royalty rates, the average writer stands more of a chance of enjoying a middle-class income. Technical, scientific, and medical writers fare much better than before. Instant publication allows books and articles to appear with fresh, easily updated facts, spurring innovation in the fields about which the authors have written. The big losers are the best-selling authors who are better marketers than writers.

Software Developers

Small software houses can distribute their wares more easily than ever--either for free or for very reasonable charges.

Back in the 1990s, many Americans programmers were not that different from writers. They came up with original ideas, but often had to pay too much to middlemen. Now a programmer on a West Virginia hilltop can reach big urban markets even if he (or she) lacks contacts with national software chains. He needn't rely on the uncertainties of shareware distribution.

TeleRead has been especially helpful to publishers of educational software. No longer is bootlegging so major a threat.

The Elderly

TeleReaders have sparked a boom in reading among older Americans. The machines can vary the size and style of type to make reading as enjoyable as possible for people with poor vision. Pleasant, synthesized voices can read out anything.

The Disabled

Why stop at wheelchair ramps for public libraries and bookstores? Thanks to TeleRead, even the bedridden can enjoy whole libraries. Affordable machines respond to spoken commands and can take dictation. They make telecommuting--working from home--far easier for the disabled.

Politicians and Bureaucrats

Sleazes lose more elections; honest politicians do better. Average Americans can easily use TRnet to scour government records, and also to retrieve the precise wording of politicians' past promises. Voters can see the words that the candidates themselves posted online. That is the norm. It isn't just limited to the high-tech elite.

What's more, via TRnet, people can write back to politicians and bureaucrats at all levels of government, while knowing exactly which ones to complain to. Do you want a traffic light near your intersection on the George Washington Memorial Parkway? TRnet will bring you up to date on the relevant laws and regulations, the accident rates, and whom you should contact at National Park Service.

TeleRead makes government more attentive than push-button TV plebiscites ever could. If a GS-15 tells you to get lost, then you can whiz copies of your correspondence to the newspapers and broadcasters, and if journalists ignore you, then you might post your grievance on an electronic bulletin board and organize other voters to pressure the bureaucracy. Not that TeleRead is anti-government worker. The best workers and their supervisors welcome TeleRead as an opportunity to serve the public better by being more responsive. Bureaucracies can

fine-tune programs and plan ahead more effectively; that means less tension for federal employees at the working level.

Like the push-button TV approach, TeleRead does allow the public to register opinions on issues--in this case, at local, state, and national levels. However, those votes are not truly instant since not all citizens have an opportunity to vote at same time. Furthermore, politicians are not expected to abide by these polls. Indeed, their opponents may accuse them of wimping out if they hew too closely to all the results of the votes. Society recognizes that participants in electronic balloting may be better off--with more time to participate in civic duties--than the nation as a whole. Just the same, by encouraging mass computer literacy, TeleRead makes the online votes much more representative than they would be otherwise. If nothing else, TeleRead allows ordinary people to keep up with government more easily than before. Hence, public opinion means more.

No longer are there outrages such as the one in North Carolina in the mid-1990's. Back then, a fax newspaper was charging \$1,200 a year to tell subscribers about the status of bills in the State Legislature. As you'd expect, customers of *The Insider* were rich banks, giant corporations, and the like. Mind you, the hardworking editors of the fax newspaper were not to blame. They were just fulfilling a legitimate need. But why couldn't the state government have gone online and made the basic information convenient to everyone with a computer--not just the rich and powerful? Without such measures, how could the American public not have been cynical about government at all levels? Luckily, in Washington and state capitals such as Raleigh, major information reforms started even before TeleRead. The Government Printing Office began disseminating many documents electronically, and states cobbled together their own networks.

Acting as a central network, however, TRnet greatly reduced the cost of online governments, enlarged their scope, and made the networks much simpler for the nontechnical. Moving from Boston to Charlotte? Nowadays you can use the same easy network commands to find out about government in your new state.

No matter where you live, you can dial up just as many public databases on politicians as the wealthiest lobbyists can. You can log on TRnet, key in the issues of greatest interest to you, then receive a list of relevant bills and actions at all level of government. Plain-English summaries of the bills, and their actual words, are readily available. So are politicians' voting records on those issues. You can even jump to newspaper and magazine articles--from many local and national publications--on the subjects discussed.

The results are (1) greater faith in government and (2) more responsive government, since citizens can act on information once it is available. No longer is government a voodoo process hidden from all but the elite. Large banks, wealthy corporations, and other institutions have benefited, too--in the sense that TeleRead has led to greater social stability, not just a better-educated workforce.

Literary Agents and Lawyers

Writers can publish directly on TRnet, but most pros continue to rely on editing and promotion from publishers. Literary agents and lawyers are still around to help authors negotiate with publishers and Hollywood.

Also, TRnet is a good research tool for lawyers of all kinds, whom private information services can no longer gouge. Lawyers and nonlawyers alike can look up official explanations--in clear language--of local, state, and national laws.

Americans Selling to International Markets

The United States helps other nations start their own TeleRead programs, and negotiates agreements with countries where similar programs exist. An international agency carefully audits the dial-up counts of all programs to assure fair compensation for writers and others. Thanks to TeleRead, nations can offer whole libraries to each other--and at the same time respect the rights of individual creators.

Via TeleRead, we create new markets for American books while sharing technical expertise with the Third World. We adjust charges with the wealth of the country in mind. By treating developing countries well, the U.S. encourages greater enforcement of anti-piracy laws and promotes future business for our publishers and authors.

At the same time, foreign countries can develop their own electronic library systems--well-stocked with indigenous literature. The TeleRead approach encourages cultural diversity. Perhaps someday one TeleRead system will serve entire planet, but not until more countries grant freedom of the press.

Of course, even now, people in most countries can dial directly into the American TeleRead system or pick up books via satellite broadcasts, as long as they have ways to route their payments. TeleRead thwarts many a censor.

Corporations

Years ago, when TeleRead was proposed, some corporations saw the plan as a budget-buster from Satan. Instead, however, it consumes just a tiny fraction of our Gross Domestic Product and has added vastly to our national wealth. The smarter CEOs realized that the best way to protect capitalism was to be more flexible than the communists of Eastern Europe were. Now employers of all sizes can benefit from computer-savvy workers who need not be supervised constantly. This skilled workforce makes us a more competitive nation.

Other countries can tap into databases, ours or their own, but in no other land is high-tech so integral a part of the educational system. Even the poorest American children can grow up with TeleReaders. We were among the few countries that could make a computer available to each child, one way or another; and we took advantage of this.

(For an example of what a well-educated workforce can accomplish with high tech, read *The Virtual Corporation: Structuring and Revitalizing the Corporation for the 21st Century*, written by William H. Davidow and Michael S. Malone and published last year by HarperCollins.)

What's more, TeleRead is a boon to corporate R&D departments. TRnet's powerful search capabilities enable researchers to keep up more easily with work in their fields. Small journals can publish more inexpensively and have more money left over to pay contributors. Too, these periodicals cost much less to receive via TRnet than they did in the heyday of paper. In fact, researchers can dial up past articles and issues for free (TRnet pays that expense). TeleRead has dramatically accelerated the pace of medical research, not just work on better alarm clocks or jogging shoes. It's saving thousands of lives each year.

Corporate marketers as a group have also come out ahead. With so much information online for free, they can more easily anticipate national and international consumer trends--by searching databases for patterns. Good companies enjoy more business since consumers can dial up detailed reviews of specific cars, woks, or washing machines. Badly run corporations are failing faster as word spreads of inferior products or financial or environmental scandals. Stockholders can dial into TRnet for past articles on companies, large and small; markets are more efficient at rewarding winners and punishing losers.

Businesses also benefit from the electronic forms that the government uses to reduce the time that Americans on federal, state, and local paperwork. The savings add up to tens of billions of dollars. Accounting and other administrative departments within corporations are smaller. After all, in streaming paperwork for the government, corporations discovered they could reduce their internal paperwork as well.

Religion

TRnet is a dream come true for the Gideon Society and equivalents. The Old and New Testaments, the Talmud, the Book of Mormon, the Koran, and other major religious works are online. Christian fundamentalists once worried about dial-up pornography, but now rejoice that the new generation of young people is more contemplative, less hedonistic, as books regain much of the influence they lost to television.

With so many books and educational software on TRnet, it is easier for conservatives of all faiths to home-school their children or start private schools without draining resources from the public education.

Volunteers

Retired managers and executives use TRnet to tutor students and consult with small business people from afar. An Electronic Peace Corps lets Americans share technical and medical expertise with people abroad (see my proposal in the

Washington Post of Feb. 5, 1984, Page D5). Thanks to the EPC, we can now learn of any AIDSlike epidemic long before it threatens the United States (see *International Health News*, November 1987, Page 4).

Anybody Displaced by TeleRead and TRnet

No worker got a pink slip without plenty of warning; everyone knew TeleRead was coming. With so many educational resources online, career-switching is much easier. Although employers have eliminated useless mid-management jobs, many ex-managers have re-established themselves as consultants.

Washington Think-Tankers

A few hacks at Washington think-tanks--not the true stars, but rather the plodders who turned corporate or government propaganda into academic research--are among the displaced. TRnet for them is a nightmare come true. Grubby high school students, Idaho professors, and small business people in Florida can now dial up the same arcane information as our national elite can.

Fresh Insights are more of a commodity. The outsiders still can't go to Washington cocktail parties and hear the latest gossip. But the more diligent among them can dial up a number of databases in search of trends invisible to the duller of the D.C. think-tankers.

Everyone

TeleRead offers a "symbiotic cyberspace library (SCL)" with "individual bits of knowledge entered by all kinds of people," a concept originated by computer systems manager Billy Barron at the University of Texas at Dallas. "These bits" can be "accounts of an event, recipes, little 'how to' tips, ideas for new inventions, opinions on political and other issues...anything." Certainly TeleRead's SCL should enhance its usefulness to future historians.

(For details, see the "Symbiotic Cyberspace Libraries" essay in *Thinking Robots, An Aware Internet, and Cyberpunk Librarians: the 1992 LITA President's Program*, Chicago: Library and Information Technology Associates, 1992).

We now return you to 1993 and a more immediate prediction. Somewhere a dutiful think-tanker will boot up his word-processor and write, "Fascinating idea; but of course it will take decades to resolve the copyright issues, and we'll all go broke and end up slaves of the Japanese if we even dream of spending half percent of our Gross Domestic Product on TeleRead." -D.H.R.

STAMPING OUT CURIOSITY: THE TROUBLE WITH "PAY-PER-READ" AND "KNOWLEDGE STAMPS"

Via computer, you've just dialed up Shakespeare, a biology text or maybe a manual telling you how to fix a diesel engine. You log on the network for the next

series of books. And then a rude message flashes across your screen: "User hereby agrees to transfer \$20 for the designated material. Type Y or N."

Get used to such hassles if we go in the direction of pay-per-read. One of the worst proposals comes from a Washington consultant who has suggested that Americans receive "Micro-vouchers" to pay for courses and instructional material and tools. Couldn't these knowledge stamps help replace "government-run and -controlled institutions" with "free enterprise"?

Excuse me. What about the Stalinist institutions known as public libraries? When thousands of books go online and many are not even available on paper, a national public library should store copies of everything for ordinary Americans to dial up. Otherwise, we may have to dart back and forth between, say, a Time Warner computer network and a McGraw-Hill equivalent to retrieve all books on topic X.

Even more important, our government should not limit our free reading to stamp-style allotments (why have stamps if allotments or pay-per-read schemes won't prevail?). A traditional public library encourages curiosity and browsing. We must not let the pay-per-read gang discourage them.

If pay-per-read wins out instead, future Michael Dirda will suffer. Dirda, a Washington *Post* editor from the Ohio steel town of Lorain, has written how his clever working-class father used reverse psychology to cultivate a love of books. Now, what if pay-per-read prevails in the 21st century? Then, knowledge stamps or not, a future version of Dirda's father might truly mean it when he discouraged reading:

Mr. Dirda (looking at a record of young Michael's account): "Why are you wasting your stamps? If I've told you once, I've told you a thousand times--no more novels this month."

Michael: "Not even Tolstoy? Not even Faulkner?"

Mr. Dirda: "I thought you were practical."

Michael: "Tom Mikus reads all the novels he wants. Bellow, you name it."

Mr. Dirda: "Look, Mike, you've got only so many stamps. If we could afford all those books on our own--believe me, we'd get them."

Michael: "Just because his old man's a lawyer--"

Mr. Dirda: "You've still got \$300 in credit this year. Why not take accounting?"

Michael: "But I want to go to Oberlin. I want to save my stamps for the classy stuff."

Mr. Dirda: "Forget it, Mike. That's for people like Tom."

I'm assuming, of course, that the future Michael could befriend the future Tom in a public school attended by children of diverse backgrounds. By draining away resources, knowledge stamps might kill off many public schools where social classes mixed.

WHAT IF THEY BRING UP WOZ'S GARAGE? TEN MYTHS--AND RESPONSES

Say "TeleRead" to a certain species of "information management" guru, and it will be like touting Fords to a buggywhip maker.

After *Computerworld* printed an early version of my TeleRead proposal in July 1992, it received an angry letter from a Chicago consultant who was "appalled." He hated the idea of the government spending money on "universal access to on-line information." Presumably we should reserve the full benefits of high-tech to the information priests in those white-tiled rooms.

I won't blame some elite consultants and others for loathing the idea. While many would adapt to TeleRead--and actually come out ahead--others would find that it took away their *raison d'être*. Many prospective clients could dial-up information for themselves.

With people like the Chicago consultant in mind, I'll list ten myths and rebuttals:

* Myth #1: Apple started in Steve Wozniak's garage, or something close to it; so why do we need a new government program like TeleRead? What a waste.

Reply: By the time Apple came along, the government had poured billions into military and space technology. Would integrated chips and other key components have been invented without years of investment in more primitive forms of electronics? Consider, too, the shot in the arm that the laptop industry received when the Internal Revenue Service and other federal agencies started buying portable computers.

Such benefits, however, are small compared to those that TeleRead could bring over time. Without being too xenophobic--not the smartest mindset in an industry as international as high-tech--TeleRead would try to favor vendors with American-made screens and other key components.

The biggest need for TeleRead, of course, has nothing to do with the immediate welfare of regions such as Silicon Valley and the Route 128 corridor in Massachusetts. It has to do with the decline of reading in the United States. Millions of students are growing up in bookless homes and going to schools that lack money for books or squander the funds.

Some of the worst examples are in Washington, D.C. Schools there spend more than half a billion a year, of which a mere \$2 million goes for books. Teachers are tired of using their own money to buy extra books and other supplies for students.

Courtland Milloy, a *Washington Post* columnist, recently wrote: "In the absence of up-to-date textbooks, many teachers say they must rely heavily on current publications, routinely spending more than \$100 a year just on duplicating news articles."

Anyone still question the need for TeleRead?

* Myth #2: Wouldn't TeleRead stifle competition among publishers and writers. What's this about de-escalating royalties?

Reply: But what's so competitive about our present system? Go to the computer-book stands at your local chain stores, for example, and you'll very likely see the same colophons again and again. That's a hint of what the rest of the book world may face.

At least one famous publisher tells agents that it no longer wants mid-list books, only potential best-sellers or specialized professional books.

Marketers at some big publishing houses don't exactly dream of publishing Nobel Prize winners and printing scores of good first novels. Their secret fantasy is a little more MBAish. They would like to print just one book a year--anything, good or bad--and sell 20 million copies.

Forget about the explosion in the number of small publishers. Desktop publishing technology makes it easier to set type and lay out books, but what's the use if you normally can't get the big chains to display your wares as well as those from major houses? Most small publishers survive by sticking to niches and paying meager royalties to writers, who, with less at stake, often turn out sloppy, badly researched work.

Nor does the present system truly promote competition among writers. In a country of a quarter of a billion people, fewer than 10,000-20,000 freelancers are writing books full time and giving the trade their best efforts. Going full time is normally out of the question unless you're rich, hyperfrugal, or have a working spouse. Write a \$20 paperback, and you may receive all of \$1.40 for every copy sold.

Sociologist Paul Kingston once calculated that writers could earn more per hour by flipping hamburgers at Wendy's than they could make at the typewriter. He co-authored a book with a rather apropos title: *The Wages of Writing: Per Word, Per Piece, or Perhaps* (Columbia University Press, 1986). No meaningful government figures exist on the average incomes of professional book and magazine writers who freelance full-time; but you can bet that you wouldn't want your daughter to marry one.

Meanwhile, publishers keep bidding up the prices of a lucky few writers without truly encouraging them to write better or even in a more popular style. Judith Krantz will never turn out *Pride and Prejudice*--or even a more popular Hollywood saga--just because the industry pays her \$3 million rather than \$2 million. The industry would be far more competitive without such high blockbuster advances and without a tendency to promote just a few writers at the expense of many.

And that's where the concept of de-escalating royalties would come in. It could revive the midlist book in America.

Right now, printers give discounts for large printings--favoring best-sellers, in effect, and harming many technical and educational books, along with literary novels. And even with computerized inventory systems, big chains would rather play up certified best-sellers than mid-list books. Most chain stores are in malls.

Booksellers must pay the same rent on the space a book takes up, whether it sells one or 1,000 copies a month.

TRnet, however, would be different. It wouldn't cost that much more per dial-up to distribute a first novel rather than a Krantz book. Moreover, as suggested in the main TeleRead proposal, TRnet should be entitled to a steep discount as a mass buyer.

In the end, then, by way of de-escalating royalties, the new book-distribution system would be skewed in favor of competition and diversity.

What's more, even under TeleRead, best-selling authors could still accumulate great wealth. De-escalation could affect only the biggest blockbusters, and even those writers would come out ahead since more money would be available for less-lucrative books that they *wanted* to write.

* Myth #3: The government has no business funding writers and publishers. What about the risk of censorship? Do we really want the feds telling us how to spend money on books?

Reply: Marketers already are censoring new ideas more relentlessly than any government bureaucrats could.

Write a book about a social or political problem, and watch the typical publisher run in the other direction if you aren't good talk-- show fodder. Ideally, of course, you'll have your own show and a large audience that shares your prejudices. Rush Limbaugh is the publishing world's gift to itself.

Pesky new idea lose out under this system. The wonderful witticism from the late A.J. Liebling, the media critic, has held up well; freedom of the press is for those who own one.

TeleRead, on the other hand, would be a boon to new publications and to small publishers of books, newsletters and magazines with original ideas. I think of people like Roldo Bartimole, a former *Wall Street Journal* reporter. For decades he has been taking on the Cleveland establishment. Read his *Point of View* newsletter and you will understand why new skyscrapers rose in Cleveland while neighborhoods crumbled.

PoV is a delight for citizen activists, many small business people, journalists, librarians, academics, and others. In fact, some of its most constant readers are its targets. They keep up with Bartimole's little sheet for the same reason many financiers read the front page of *The Wall Street Journal*; his exposes enrage them at times, but uncover fresh facts that they could never find elsewhere.

The problem is, many big law firms and others are not buying *PoV* so much as they are photocopying it.

Under TeleRead, Bartimole-style mavericks could reach larger audiences without worrying about the costs of postage and printing, or the hassles of collecting subscription money. Yes, some copying would take place. But the mavericks would still benefit from the wider exposure. And like publishers of newspapers and magazines, many Bartimole-style people could be eligible for inclusion in databases

of back issues, meaning yet more income (newsletter publishers could charge the public for back issues if TRnet did not pay for them).

At the same time, big dailies would come out ahead, too, since they could distribute electronic editions without relying on the goodwill of the local telephone and cable monopolies.

But what about the risk of Washington politicians censoring material? That is exactly why TeleRead might be an independent agency or a well-- insulated part of the Library of Congress; receive long-range funding; have many librarians involved in the selection of books and other material; rely heavily on input from state and local levels rather than being a top-down organization; offer explicit procedures for writers and publishers to bypass the librarians; and allow private publishers to run their own networks and sell books and magazines independently through subscription programs of their own.

TeleRead would not even have to be in Washington near the normal policymakers and lobbyists. Spread out the functions. Let a Silicon Valley office do much of procurement of portable computers. Have Boston help handle contracts for the memory-bank facilities, in many different areas of the country. Let the librarians--most of whom would work for local, state, and university libraries rather than for TeleRead itself--live anywhere.

In short, make TeleRead a decentralized, virtual organization without a Washington headquarters around which the usual lobbyists could hang out. Astute politicians should welcome this approach. It would provide less opportunity for book-burning group to hassle them over TeleRead.

A decentralized TeleRead might lease TRnet computer facilities in several regions and cut down on communications costs. Granted, each facility would store the same books (so that comprehensive searches for information would be easier and faster). But many librarians, in different locations, would be able to certify titles for dial-up fees. With so many people recommending books--not excluding them--- TeleRead would be a censor's nightmare.

These TeleLibrarians, although federally funded, would be working within their own budgets, just like doctors at HMO's. Consider a librarian in Bismarck, North Dakota, who was employed by the local library system there; he or she would use the central database to monitor all new books submitted for possible certification--no matter where the authors or publishers were located. Thanks to the powerful search capabilities of computers, our North Dakotan could flag the system to look regularly for books of interest to her.

No book on the Great Plains or on the Dakota history would escape her attention, nor would any biography of her favorite composer or artist. The central database would tell her which books already received enjoyed certification. Armed with all these facts, she could intelligently approve a certain number of books each month or two--whatever her budget allowed. The money would come from the federal government, but this local TeleLibrarian would be watching out for the interest of her fellow Dakotans.

Statisticians would help TRnet monitor the dial-ups patterns and constantly adjust the allowances for purchases of certain kinds of books and other than the Dewey Decimal system. Clearly, then, ways would exist for TRnet to avoid cost overruns, especially if royalties on best-sellers were de-escalating.

With clear selection and budgeting procedures in place, TRnet in some respects would be like the Internet, the giant network of networks that is available to thousand of researchers, academics, business people and others in the United States and throughout the rest of the world. The U.S. government made the Internet possible, but the network has taken on a life of its own. It now carries thousands of message areas on topics ranging from ozone to "Practical Christianity."

In fact, the Internet offers much more freedom than people find on some private networks. Last year, while researching a computer book, my wife and I asked Prodigy members what they thought of the service's Food and Wine Club. Our neutrally worded notice vanished within hours. The book was many months from publication and we did not even mention a title, yet Prodigy claimed we were using the network for commercial purposes. Prodigy has added some wonderful new wrinkles, such as 9,600-b.p.s. services, and I very much hope that this innovative network will survive and thrive--but with more freedom of expression. Carly and I were hardly the first victims of the Prodigy censors. A New York Times gardening columnist had a brush with them several years ago and wrote about it in his paper.

Should you still see TeleRead as more Big Brotherish than "Free Enterprise" is, then you might consider the following scenario:

Let's say the government gave your local newspaper what some have called "a license to print money." As a believer in separation of state and press, would you approve of this practice? Would you consider it to be unfair federal intervention? Then you are a little too late. Television licenses already exist--for newspaper companies and other businesses--and the Federal Communications Communication can take them away if the FCC believes that TV stations are not acting in the public interest. Beyond that, Washington has granted anti-trust dispensations to many a newspaper.

What's more, even opinion magazines must plead their case with the Postal Service if they want to enjoy special mailing rates. And publications of all kinds of all kinds must satisfy the Internal Revenue.

So true separation between government and the media is a dream. If it were reality, copyrights would not be with us. Jesse Helms notwithstanding, federal copyright law makes it possible for *Hustler* to turn a profit--by assuring Larry Flynt that if someone pirates his girlie photos, then Flynt can sue. Copyrights do not exist like the Rockies and the Atlantic Ocean. Bureaucrats must grant them or at least recognize them.

The real way to promote freedom of speech, then, is not to deny the inevitable governmental role in what we read, watch, and hear. Rather it's to come up with a

system of checks and balances to guard against censorship by bureaucrats--or marketers.

* Myth #4: But if you don't have censorship, you won't be able to control what books children read.

Reply: The best way for parents to protect their children is to set good examples and spend enough time with their offspring. Certainly few books are as likely to promote negative behavior as the barrage of graphic material on commercial television.

But, yes, for parents wanting a technological solution, TeleReader could prevent children from dialing up objectionable material. Parents and children could use different log-on procedures, just as they can right now on some commercial computer networks.

* Myth #5: A good \$50 or \$100 portable computer? You've got to be kidding.

Reply: What sells for \$1,000 today is likely to sell for a tenth of the price within the next two decades. Consider how much the early televisions and calculators cost. Even without a government program, you can pay \$100 for a used PC that would have sold in the mid-80s for several thousand dollars.

Engineers are squeezing more power into less space, and driving down costs in the bargain. Twenty years ago, it's been noted, we could not cram more than 5,000 transistors into an integrated circuit. Now the upper limit is well into the millions, and will keep multiplying. Meanwhile, computer memories are growing. An entire chip someday might house the entire contents of the Library of Congress.

What's more, portable computer screens are sharper than ever. Already the Knight-Ridder chain has been studying the use of tablet-style portables for reading newspapers. The technology may be ready in the next two years or so.

Today the screen of the typical portable is still not good enough for many people to read whole books with. But we are not that many years from the time when flat screens actually could be easier to read than paper. The screens could be sharp and flickerless, and you would be able to vary the color, type size, and type style. Besides, the first material on TRnet could be of the "must read" variety--for example, medical and technical material--so that the readability of the screen mattered less than for recreational use.

What about battery life? High-tech companies are steadily increasing the time between recharges. The batteries pack more energy and the circuitry draws less power. This is one area with plenty of room for progress, but hardly hopeless. Some portable computers without good screens can last dozens of hours on penlight cells. Besides, what's so tragic if the very first TeleReaders rely more extensively on AC power than future models do?

So in the end, the issue isn't technology. It's money. Get publishers to digitize books, create enough of a market for TeleReaders, and Silicon Valley will oblige. No, a powerful \$100 portable won't be here immediately. But it will appear in the future--if Silicon Valley works on driving the costs down, not just on pushing the limits of technology.

* Myth #6: Wouldn't the kids steal or destroy the equipment?

Reply: But who says every child must get a TeleReader immediately?

Schools could loan the first machines to the children with the best prospects--the bright and the hardworking; reward them. Drug-peddlers flaunt beepers. Now let's get some high-tech into the hands of honest, well-motivated students who otherwise could never afford powerful computers (some might be honors students; others, students who showed potential in other ways).

Also, etch serial numbers into the cases. Compile a register of legitimate users of government-supplied machines, and make it illegal to sell unregistered TeleReaders. Impose stiff penalties on offenders.

Reduce damage to equipment by starting the program in the high schools and working down. Also, insist that durability be one of the criteria for awarding TeleReader contracts. Sooner or later we'd reach the point where first-graders could blithely play catch with their TeleReaders or drop them on the sidewalk.

Yet another way to fight theft and breakage would be to involve parents in the TeleRead program from the start. The machines could improve their own literacy skills and make them more employable. Special video games--with audio and flashy, Sesame Street-style graphics---might even be designed to help parents and children work together to build up their skills.

* Myth #7: Isn't it un-American to tax other people to support readers?

Reply: But don't we tax single people and childless couples to support the public schools? And isn't it in society's interest to encourage reading?

Even putting best-sellers online--everything from mystery novels to Judith Krantz's work--would contribute to general enlightenment. People do not maintain and sharpen their reading skills by just reading what they must. They also do this by reading what they want. That's especially true of children; literacy specialists are among the biggest boosters of comic books.

* Myth #8: But don't some TeleRead-style projects exist now? How about competing activities such as Co-NECT Schools? What about groups such as the New American Schools Development Corporation, which is promoting into some of the same technologies?

Reply: These programs are a fraction of the size that TeleRead would eventually be. Besides, the more the technology is tested beforehand, the faster we can get TeleRead off the ground. TeleRead's TRnet would be a wonderful way to distribute already-developed educational materials to children--and adults. And educators already working in this area could help set up programs to accustom American teachers to high-tech.

The point to remember here is that no private effort could ever offer as many books and as much educational software as TeleRead could, and do this at affordable prices for all.

Nor could any other program stimulate technological development as much, by offering so massive a market for reading-computers.

I have not heard of any private projects using machines as viewable and affordable as the proposed TeleReaders, but if those ventures can perfect such machines, that will help. It would especially be good if educators in existing endeavors, computer companies, newspaper people, book publishers, writers, and others worked with the government to come up with goals and standards for TeleReaders and the TeleRead program in general (obviously public interest groups should participate too).

* Myth #9: But don't we have the Internet already as a low-cost way to spread knowledge? Who needs something else?

Reply: The Internet's offerings in many respects are scanty compared to a large public library's. No surprise here. Few commercial books are on the Internet.

Besides, TRnet wouldn't replace the Internet as an electronic forum for researchers and the university community at large; let's not destroy something that has served the United States so well. The solution is to have books distributed through TRnet--while letting many users pop back and forth between the two networks. TRnet and the Internet could work in tandem. In fact, TeleRead might fund both (or at least participate in the Internet's funding). See Addendum Five for more details.

* Myth #10: Still, what about bills already introduced in Congress? Aren't people already planning electronic libraries for the public?

Reply: TeleRead would guarantee that a broader range of materials would be available online for free or at low cost. And of course TeleRead would also drive down the prices of powerful reading-computers, so that virtually all Americans would benefit.

THE ORIGINS OF TELEREAD

Several years ago, William F. Buckley, Jr., complained that many students were using computers rather than card catalogues at the library. He had a point. Library skills were declining. Skimming a few facts off databases wasn't like reading whole books. I thought, "Why couldn't the complete texts be online?"

The idea of dial-up books was already many years old. But to my knowledge, no one had truly resolved the big issue: Just how could we make online books affordable--yet also provide for fair compensation for writers and publishers? Without such a plan, we might well reach the point someday where most public libraries folded. Suppose only the rich could afford to be well read. I wondered if our library system would start failing the average American as badly as our health care system had. Middle-class people were reading books, but some of the fastest-growing demographical groups were not. What's more, I feared that future technology might increase the gap between the middle-class and the rich.

My worries have been all too justified. Within the past year or two, local libraries have cut back hours; this happened to me in Fairfax County, Va., not Harlan County, Kentucky. I have just moved to the nearby city of Alexandria,

where, if anything, the libraries for years have been worse than in Fairfax. (If I couldn't buy Fairfax County library card, I would not have moved.) Even the Library of Congress has scaled back the schedule of its reading rooms. On top of that, more and more students are shunning careers with cash-strapped public libraries, preferring to collect lawyerish money working for big corporations. Who can blame them?

Something else is happening, too: Publishers and stores are even more cavalier toward non-best-sellers than in past years. My books keep coming out late for business reasons, costing me thousands of dollars in sales because high tech is always changing. A XyWrite III guide appeared just time to greet the arrival of XyWrite III Plus. Typically my publishers are too busy promoting books by celebrities or hawking the 10 zillionth WordPerfect guide. When a writer for major computer magazines wanted to review *The Complete Laptop Computer Guide*, he could not find a copy on sale in all of Salt Lake City.

Another problem right now is the high price of books. Why is it that schoolchildren must pay \$8 for little paperback editions of classics? Or that more and more college textbooks cost \$50 or \$75? Or that many students must resort to used, outdated textbooks because the new ones are so expensive? Or that some novels list for \$30? Just how can publishers lobby for more aid to libraries when the prices of books keep zooming? And yet we cannot blame publishers alone, not when production costs have risen.

I conceived TeleRead, then, as a good solution for readers, writers, and publishers alike--and even for bookstores, too, if they were willing to adapt to the new technology. As I've noted elsewhere, bookstores themselves might print books downloaded from the network. They might even become publishers themselves.

Refining this proposal, I found that the Association of American Publishers was helpful with facts on the economics of the trade. An AAP staffer seems open-minded. Certainly TeleRead addresses a problem of major concern to publishers--the vulnerability of digitized books to bootlegging. Perhaps readers, writers and publishers can put aside their differences and work together to hasten the coming of TeleRead.-- D.H.R.

ACTING ON THE IDEA

If you like the TeleRead idea, spread this file around and write the White House or the appropriate people on the Hill. Many officials in Washington would rather not have their fax or e-mail boxes tied up. So please use paper mail. Feel free to reproduce this file on paper to accompany letters.

I'm a writer, struggling with the usual deadlines, and I have just so much time to lobby for this idea. I hope that others can follow up.

Below are possible people to contact. This list isn't all-inclusive; some of the best prospects may not be mentioned here. Do not worry about writing to all the names below, just to whoever you feel would be responsive. Please note that the

office of Dr. John Gibbons (listed in the Executive Branch) has received the proposal from Vice President Gore's office.

Executive Branch (In Alphabetical Order)

* Pam Barnett, Executive Assistant for Domestic Policy, Office of the First Lady, White House, 1600 Pennsylvania Ave., N.W., Washington, D.C. 20500. We all know of Hillary Clinton's interest in educational matters.

* Ronald Brown, Secretary of Commerce, Washington, D.C. The Commerce Department is playing a major role in the Clinton Administration's plans for a National Information Infrastructure--especially in regard to the protection of intellectual property. Mr. Brown chairs the Information Infrastructure Task Force (IITF), with high-ranking members from different federal agencies. See the listing for Terri A. Southwick, a Patent Office attorney who has solicited NII-related comments from the interested.

* President Bill Clinton, White House, 1600 Pennsylvania Ave., N.W., Washington, D.C. 20500. Contacting President Clinton and Vice President Gore, have made the point at a national data highway is just a start. What really counts is what will be online, and whether the average household will be able to afford it.

* Jeff Eller, Media Affairs, White House, 1600 Pennsylvania Ave., N.W., Washington, D.C. 20500.

* Dr. John H. Gibbons, White House Director of Science and Technology, Old Executive Office Building, Washington, D.C. 20500.

* Vice President Albert Gore, Jr., White House, 1600 Pennsylvania Ave., N.W., Washington, D.C. 20500.

* Ira Magaziner, Senior Advisor for Policy Development, Domestic Policy Council, 1600 Pennsylvania Ave., N.W., Washington D.C. 20500.

* Roy Neel, Chief of Staff to the Vice President, Old Executive Office Building, Washington, D.C. 20503.

* Robert Reich, Secretary of Labor, 200 Constitution Ave., N.W., Washington, D.C. 20210. Secretary Reich, of course, has long pointed out the connection between educational opportunities and national prosperity. In commenting on the TeleRead proposal in a letter dated April 14, Assistant Labor Secretary Thomas C. Komarek noted that "one of the primary goals of DOL's Workforce 2000 initiative is to increase the compute literacy of the American workforce."

* Richard Riley, Secretary of Education, 400 Maryland Ave., S.W., Washington, D.C. 20202-0100. Education has sent me a letter requesting more information on TeleRead, and when deadlines permit, I'll be following up.

* Greg Simon, Advisor to the Vice President for Domestic Policy, Old Executive Office Building, Washington, D.C. 20503.

* Terri A. Southwick, Attorney-Advisor, Office of Legislation and International Affairs, c/o Commissioner of Patents and Trademarks, U.S. Patent and Trademark Office, Box 4, Washington, D.C. 20231. She is helping to organize hearings on behalf of the Working Group on Intellectual Property of the Information Policy

Committee of the Clinton Administration's National Information Infrastructure Task Force. The hearings are scheduled for November 18, 1993.

* George Stephanopoulos, Senior Advisor White House, 1600 Pennsylvania Ave., N.W., Washington, D.C. 20500. Mr. Stephanopoulos has resigned as White House communications director, but President Clinton says he will "be working with me more closely...on important matters of policy and strategy and day-to-day decision making, helping me to integrate all the complicated debates that confront my office." Ranging over a number of areas, TeleRead just might be of interest to Mr. Stephanopoulos.

* Laura D'Andrea Tyson, Council of Economic Advisers, Old Executive Office Building, Washington, D.C. 20503.

* Margaret Williams, Chief of Staff to the First Lady, White House, 1600 Pennsylvania Ave., N.W., Washington, D.C. 20500.

The Senate (Alphabetically):

* The Honorable Max Baucus, U.S. Senate, 706 Hart Senate Building, Washington, D.C. 20510-2602. Sen. Baucus has shown an interest high-- tech. His state, Montana, could benefit dramatically from a national electronic library and improved telecommunications.

* The Honorable Robert Byrd, 311 Hart Senate Building, U.S. Senate, Washington, D.C. 20510-4801. Sen. Byrd chairs the Appropriations Committee, and, like Sen. Baucus, comes from a rural state where most citizens lack easy access to large libraries. West Virginians might appreciate TeleRead's de-centralized nature. In this era of computer networks and faxes, why should the Washington area drown in federal offices while people in other states are begging for good white-collar jobs?

* The Honorable Byron Dorgan, 825 Hart Senate Building, U.S. Senate Washington, D.C. 20510-3405. A North Dakotan, he sits on the Commerce, Science and Transportation Committee. And like Senators Byrd and Baucus, Sen. Dorgan is interested in ways to use high-tech to increase educational opportunities for rural people.

* The Honorable Edward Kennedy, 315 Russell Senate Building, U.S. Senate, Washington, D.C. 20510-2101. Chairman of Labor and Human Resources, the Senator has been interested for many years in long-- distance learning.

* The Honorable J. Bob Kerrey, U.S. Senate, Washington, D.C. 20510. Last October he gave a speech to the Software Publishers Association calling for online networks for education. Sen. Kerrey is from Nebraska, one of the many rural state that could benefit from affordable online libraries.

* The Honorable Daniel Patrick Moynihan, U.S. Senate, 464 Russell Senate Building, Washington, D.C. 20510-3201. Himself an author (well known for sociology), he represents New York state--which of course is to books what Florida is to oranges.

The House (Alphabetically):

* The Honorable Rick Boucher, 405 Cannon House Office Building, U.S. House of Representatives, Washington, D.C. 20515. He is on the Science, Space and Technology Committee, and he has just introduced legislation to hasten the day when thousands of books would be online. His bill also provides for hardware purchases for schools and libraries. This is helpful. But now we need affordable computers for virtually all American homes--and assurances that databases will charge little or nothing for the same material that paper libraries offer for free. Let's make knowledge truly affordable to all.

* The Honorable Edward J. Markey, U.S. House of Representatives, 2133 Rayburn, Washington, D.C. 20515-2107. Rep. Markey sits on the Energy and Commerce Committee and the Telecommunications and Finance subcommittee. As befits anyone from Massachusetts, he is intensely interested in high-tech issues such as national data highways.

* The Honorable Major Owens, U.S. House of Representatives, 2305 Rayburn, Washington, D.C. 20515-3211. Rep. Owens, the only professional librarian in Congress, is on the Education and Labor Committee and is from Brooklyn.

* The Honorable Charlie Rose, U.S. House of Representatives, 2230 Rayburn, U.S. House of Representatives, Washington, D.C. 20515-- 3307. The chairman of the House Administration Committee, Rep. Rose jokes that he is the "techno-nut" of the Hill. His state, North Carolina, has a number of high-tech firms in the Raleigh-Durham-Chapel Hill area.

REACHING ME

You may contact me through the following networks:

- * America Online (DavidHR).
- * CompuServe (73577,3271).
- * GEnie (D.Rothman1).
- * Internet (rothman@netcom.com, DavidHR@aol.com, 73577.3271@compuserve.com or 106-5024@MCIEmail.com).
- * MCI Mail (David H Rothman at the "To:" command)
- * Prodigy (TNFN63A). E-mail on this network can be cumbersome to answer, so please use alternatives if possible.

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A shorter version of the TeleRead proposal appeared in The Washington Post Education Review (page 5, April 4, 1993, and earlier articles have appeared in Computerworld (page 77, July 6, 1992) and the Baltimore Sun (page 4G, August 9, 1992). Opinions expressed here are my own, not necessarily the Review's or any other publication's. You may make as many electronic copies of this expanded version as you want without permission--as long as you do not alter the text. Please check with me about publication on paper.

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ADDENDUM ONE: IS BRIDGEPORT THE FUTURE?
(AND A FEW WORDS ON THE KNOWLEDGE
CRISIS IN OTHER CITIES)

Bridgeport (pop. 143,000) is turning even bright children into future cooks and janitors. A story in the April 6 *Washington Post* tells of the decline of literacy in Connecticut's biggest city: "The public school system is so strapped for cash that it spends less than one-third of the state average on new books for its libraries.

"And the public library system, a beacon for literacy for 143 years, is open only about one-third as many hours as in the late 1980s."

You can blame Bridgeport for short-sightedness, and you would be right; but another reason exists, too--the disparity between the library budgets of rich and poor cities. That is exactly what TeleRead would help address.

Contrast Bridgeport with Westport and Fairfield, nearby towns that boast thriving bookstores and libraries. The *Post* correctly notes that middle-class Americans are buying and borrowing more books than in past decades. That's good news in some respects (it suggests that a full-service TeleRead program could enjoy a sizable constituency). But white, middle-class America is not the whole country.

Some of the fastest-growing demographical groups are the least likely to be readers; besides, women in all economic groups lag far behind men in mastery of technical subjects. In an age when white male workers will soon be a minority, we could all lose. The yuppies in Westport will not fare well in their retirement if we lack enough skilled workers to support them.

"With the growing inequities in schools and the cuts in libraries across the country, literacy is becoming increasingly class-based," the *Post* quotes Patricia Shulman, former president of the American Library Association.

Furthermore, as shown by the library cuts in Fairfax County, Va., even the middle-class may not be safe in the end. And this information gap will only grow worse if electronic libraries are not affordable and old-fashioned libraries go the way of the streetcar.

In Baltimore...

Bridgeport is hardly alone in its miserliness toward books.

Once Baltimore politicians bragged about "The City That Reads." Now, however, Mayor Schmoke, a former Rhodes Scholar, talks of shutting down neighborhood library branches. He asks citizens to lobby the Maryland Legislature for more funds. And yet, as columnist Michael Olesker has written in the *Baltimore Sun*, Baltimore is already receiving "about 40 per cent of its Pratt Library money from the state."

Strange, isn't it? Baltimore has money for convention centers, professional sports facilities, and the rest; but somehow the Mayor regards books as frills.

Understandably, some 10,000 citizens have mailed in letters to the librarians, who, according to Olesker, are displaying many in the windows of the Central Library. He quotes one writer, a student named Joseph: "The Pratt Library is the very backbone of the public education system. I owe every A+ on every book report and research paper I've done to the Pratt Library. Who can afford an entire volume of *Encyclopedia Britannica*? The Pratt provides to poor students for free what more privileged may have at their fingertips at home. It gives poor students a chance at high academic excellence."

If TeleRead laws passed, even children in public housing projects could dial up encyclopedias from their living rooms.

Meanwhile, unwittingly, Mayor Schmoke has illustrated the pitfalls of simplistic reliance on high-tech. He speaks as if we're all enjoying online libraries right now, this very nanosecond. Proposing to reduce the number of neighborhood branches, Schmoke said: "With changes in technology, it may be that this number of library branches is passe."

That's claptrap, of course. Millions of children are growing up illiterate while politicians, lawyers, lobbyists and Fortune 500 companies debate America's high-tech future. We need more money for paper-era libraries now, along with explicit guarantees that the electronic versions will serve Joseph.

Ideally, some of the 10,000 people who wrote to protest the Pratt cuts will also contact the federal government about TeleRead. Why shouldn't Joseph be able to dial up the same books as richer children in the suburbs?

(Thanks to Dr. James Farrell, a TeleRead supporter in the Baltimore area, for sending me the *Sun* clip.)

In Los Angeles...

A black computer consultant has just sent me a e-mail note--in which he commented on the differences between textbooks in white suburbia and minority areas.

"It's funny how this has been an issue for so many years," he says. "I remember that even when I was a child (I'm 26), my father and I were always aware of the fact the books in inner-city schools were much older and in poorer condition than those in more affluent areas.

"Of course busing was not the answer, because I was more unhappy and alienated than ever before. What needs to be done is to bring quality tools to the inner-city."

That means common, full-service electronic libraries for the rich and the poor. Otherwise the rich will care no more about online libraries for the poor than they care about decent schools for them.

In Boston...

William R. Murrell, the black owner of a high-tech firm called MurrellBoston Telesis, agrees with the consultant that the inner cities are underbooked. See the essay in the next addendum. Mr. Murrell is spreading word of TeleRead on the black BBS circuit. Clearly minorities can be just as keen on high tech as the rest of us are. According to Mr. Murrell, an electronic bulletin-board system oriented toward blacks has attracted 2,000 members. (A typical BBS in the U.S. has a fraction of that number.) Still, without easy access to good computers, millions of other blacks are unable to prepare for life in the silicon age.

In Texas...

Billy Barron recalls going to college in Denton, Texas, and finding "a very small and poor public library. It wasn't open on MWF nights and had limited weekend hours. I also discovered that Denton had the best used bookstore that I have ever seen. Was this because the population didn't have a good public library? What about the poor families that couldn't afford even used books?"

If nothing else, why should millions of Americans have to buy used books on fast-changing fields such as computer science? The idea of finding an old, leather-bound copy of *Great Expectations* is charming. What's not so charming, however, is to need information on the latest computer technology and learn that the newest books available are two years out of date. Ideally, used bookstores will be around many more years. But ideally, too, TeleRead will come along in time to help the citizens of Denton prepare themselves for the era of the virtual corporation..

Mr. Barron, Network Services Manager at the University of Texas at Dallas and until recently Electronic Journal Archivist at CICNet, has done his part to encourage the transition to electronic media and make online books affordable to all. He helped amass a collection of 500 electronic journals, access to which is free to any Internet user. The collection is the CICNet Electronic Journal Project and is distributed on the Internet by CICNet, a regional network.

If you are seeking free or low-cost electronic books and want them now, then contact one of the leading pioneers in the field, Michael Hart, via the Internet (hart@vmd.cso.uiuc.edu). Or write him at Project Gutenberg, Illinois Benedictine College, 5700 College Rd., Lisle, Illinois 60532-0900. Mr. Hart hopes to assemble a collection of thousands of classics and other books without copyrights in effect. Yet another book-related project is the Online Books Initiative (obi@world.std.com), at Software Tool and Die, 1330 Beacon St., Brookline, Massachusetts 02146. Why not volunteer if you believe in any of these causes?

Even with TeleRead around to distribute books online, activists such as Messrs. Barron and Hart would be valuable; they could use TeleRead to spread the collections they have built up over the years.

There is, too, another compelling reason to support their activities. "I am a big fiction reader myself," Mr. Barron says, and I would hope that he and others would lean on TeleLibrarians not to slight novels and other nontechnical material.

My own concern is one reason why the TeleRead proposal allows librarians to be bypassed if need be. Also, TeleRead should be as easy to use as possible, so that it isn't just a tool of techies. Build a good interface, and the lib arts types will come.

A more immediate solution, of course, is for lovers of literature-- -good librarians included!--to help shape the online books movement just as Messrs. Barron and Hart are doing now.

In North Carolina...

Anthony Policastro of Wilmington has written Rep. Charlie Rose to suggest that TeleRead would be one way to improve the state's public schools. Politicians in North Carolina have themselves talked about an "electronic highway" for the state. TeleRead, of course, would allow people in all states to dial up the same electronic books and share other resources.

Until that happens, state might do well to follow a suggestion from Mr. Policastro and set up demonstration TeleReads. Perhaps state or local jurisdictions could strike deals with publishers to authorize electronic reproduction of books. He envisions charges for access to individual books. My own preference is for flat fees; and, of course, the real solution is a national program for all sections of the country--rich and poor. Still, demonstration programs of any kind at the state level would be most welcome.

In West Virginia...

In Morgantown, West Virginia, long before he heard of TeleRead, Al Judy and friends wanted affordable dial-up libraries. He's bringing the TeleRead proposal to the attention of other local business people. TeleRead could be a boon for rural areas without good libraries; who says Bridgeport, Baltimore and Appalachia have different interests here?

In Alabama...

Ron Albright, head of the Digital Publishing Association, has endorsed TeleRead as a way to promote his members' technology. He also observes: "...Instead of flooding the young mind with yet another sitcom or soap, TeleRead would allow video to present them with quality reading materials. The table has been set to allow the writers and publishers of the world to start using the medium of video to stimulate the mind rather than allow it to stagnate." Certainly, TeleRead could help raise the quality of education in rural schools in Alabama just as it would in West Virginia.

For more information on the Digital Publishing Association, reach Ron Albright at 1160 Huffman Road, Birmingham, Alabama, or via e-mail (CompuServe: 75166,2473, GENie: RALBRIGHT, or MCI Mail: 370-7474 or Prodigy: DXBD80A).

ADDENDUM TWO: AN AFRICAN AMERICAN REFLECTS ON TELEREAD AND AFFORDABLE BOOKS

Author's Note: Please pass around this essay and the rest of this proposal. Ask your local newspapers to print or quote from the material, and editorials about TeleRead. Tell your children to contact their school newspaper editors. Spread the word among friends, teachers, and PTA contacts. Ask your minister to give a sermon on TeleRead. This is a person-to-person project! My computer addresses are at the ends of my essays, in case you want to reach me. The TeleRead idea means a lot to me as a parent and a Black person. In the past I have taught technology to African Americans, and my wife teaches third grade, and we're both of seeing children denied the books they need. Here is a constructive solution.-
W.R.M.

By William R. Murrell

Have you ever picked up a book and noticed the famous words below?

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form by any means electronic, mechanical, photocopying, recording, or otherwise, without the prior written permission of the publisher....

I know there are business reasons for such restrictions, but I can also imagine a world where knowledge can be free or at least cost much less than it does now.

Why should books be a "privilege"? Self-education is our right as Americans.

If we can read enough books, then we'll be able to repay society by using our skills constructively. My mother always told me, "The key to a self-sufficient life is to get a good education." It's been said that genius is born everyday, and a genius takes what he or she has and makes the best of it.

How to help this process along? What about the masses of our African American youth, potential geniuses? Someday could they use computers to dial up electronic books that were as easy to read as paper ones? And could these computers and books be extra-affordable, and even free to the some low-income people? Is this possible? I know it is.

Would this "TeleRead" program create more geniuses with better solutions to the problems that affect us and society at large? I know it would. And, since bookmaking is a business, would not smaller African American publishers and writers be able to share in the dream of a successful publishing business if they could effortlessly reach the best markets for their products? I know so.

Could not our high-tech entrepreneurs become more successful at selling their services and systems? Could they not create viable, profitable community-based

businesses able to employ local folks? And could they not also help foster a new generation of reading-computers affordable by every household? Again, I know so.

This TeleRead proposal should be taken seriously by anyone who believes that technology should help all Americans, not just the rich.

So before the "Information Highway" comes to your area, make sure that it will provide affordable electronic books for you and your children.

Black people and other Americans are fed up with the cost of health-care, and now the politicians are getting the word. Let's do the same for books. Let's work to make them affordable.

Write the White House and your congressman now and tell them about TeleRead. In particular you might want to write Greg Simon, Assistant to the Vice President for Domestic Policy, Old Executive Office Building, Washington, D.C. 20503. Also write Dr. John H. Gibbons, White House Director of Science and Technology, Old Executive Office Building, Washington, D.C. 20500. Dr. Gibbons's office is now considering TeleRead.

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ADDENDUM THREE: TELEREAD--ONE PERSON'S VISION, ONE PERSON'S RESPONSE

By Jack E. Frisch

Professor Emeritus, Communications and the Arts
University of Wisconsin-Green Bay

I find it difficult to write in great specifics on the value of TeleRead to the academic community because I've recently "left" it. With retirement, I now only seldom have quite the need for many of the very exciting and positive values of this proposal. Just as with the fact that *for me* the incredible richnesses of the Internet arrived rather too late for me to take full advantage of them in my everyday work-world, so also with TeleRead.

But also as with the Inet, I can dream, I can proselytize, I can promote, I can cajole. I do it all the time. Too much needs to be available, developed, expanded and *used* by the *entire* populace.

That is what is so profound about the information revolution we are experiencing in these decades: information free and freely-exchanged. It has changed the world surprisingly suddenly, and it must continue to do so. Indeed, it will continue to do so regardless. BUT *control* is simply no longer the be-all and end-all of successful societies, as some startling examples of just the opposite have illustrated.

So a question must remain, *how* will future changes come about and whom will they most affect?

I realize I am very fortunate to have an attachment to a university and hence the availability of an account on its mainframe that allows access to the Internet. However, precisely because of that realization, I now more and more recognize a likelihood that such a resource may well go the way of so many things--available only (or even primarily) to a very restricted elite. An elite I may or may not be considered a part of; but in any event, the real concern must be with the many, many who are not and will not be so considered.

Clinton/Gore are excited by the Inet "Superhighway" idea, but they are being conned by various people (in congress, in corporations, in the combinations) to drop it all in the infamous laps of the money-changers. Which of course means paying through the nose to even sneeze on-line.

I really do think we need to find means to support this way of "freedom of use" in the information society upon us. Or we are going to lose it. As Stewart Brand liked to say (in the early years of Whole Earth Catalog, at any rate), "information wants to be free."

But a lot of people differ with that concept, and the statement "freedom of the press belongs to he that owns one" will be the password online as well. Of course, once that happens, we don't get such resources back. I well remember the course readings and discussions during my own student days, as well as my faculty days, about the mishmash and losses to the general public which occurred because of early-century decisions about licensing/awarding of those marvelously ephemeral, available-to-everyone-as-a-natural-resource airwaves.

It wasn't only a long time ago: much of that same approach was repeated with the advent of Cable television, with certain results recently resurfacing.

David Rothman's TeleRead design to have virtually everything available electronically and "free" is not of course free, and he addresses that fact. It also critically depends upon the development of a **very** readable screen as part of whatever the system. He addresses that fact as well, which also indicates how much this entire idea is somewhat futuristic. Yet, the incredibly rapid technological advances with which we are all familiar leaves quit open-ended the question of how distant or near the future of that particular advance.

He also of course addresses the questions of payment for the authors of material which is going to be freely accessible. In doing so, he does a convincing job of illustrating that authors would receive even better payment (and treatment) than before. Furthermore, it would not be the "pay-per-read" so outrageously looked forward to by AT&T, Cable, et al. To say nothing of the fact that books would not have to go out-of-print as readily -- a particular personal complaint of mine during university teaching/research days.

In other words I think Rothman's proposal has much to do with education in many of its possible manifestations. For myself now, that particularly includes

adult, distance, continuing, special-circumstances education. It is his vision; it is my response; I hope something can come of it, and the sooner the better.

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ADDENDUM FOUR: TELEREAD AND THE INTERNET

Should the Internet be used for distribution of electronic books and educational material for the masses? How does it fit in with the proposed TRnet?

A dilemma troubles the Internet community today. On one hand, networks and BBS's should not imperil the protection of intellectual property by spreading material around. On the other hand, the Internet should serve the needs of the curious; it should be a browser's friend, not just a marketer's tool.

TRnet would end the dilemma. Users could swap messages and post discussions and preliminary research findings on the Internet, other networks and BBS's, and still enjoy at least as much protection as they do now. Then, later, when they reached final conclusions and wanted full professional scrutiny, and, yes, money, too, they could distribute their material via periodicals and books on TRnet. They would enjoy far wider exposure on TRnet due to its centralized index, its elaborate hypertext capabilities, and its easy interface.

The Internet and TRnet might work together in another way; they might share phone lines and computer facilities, thereby allowing both to benefit from volume discounts. Much or most of TRnet might even be the Internet in disguise, or vice versa. The differences could often be invisible to the user. For example, if you liked a book and wanted to contact an author who enjoyed mail from readers, you could click your mouse on a "button" within an electronic book and compose your message. Then next time you went online, the message could go into the writer's mail box on the Internet.

Moving on to another example of integration, suppose that Internet User A sent the complete text of someone else's published book to a User B. Would this have to be piracy? Not at all. Characters in the file might trigger a message to TRnet to have the author compensated. If User A were on a BBS or other net unconnected to TRnet, then the compensation notice could arrive when A next logged on TRnet.

What's more, to use a third example, intelligent agents might be designed to search both TRnet and the Internet simultaneously. Since the Internet consists of

many servers, searches could not be done as quickly or as efficiently as searches restricted to TRnet's centralized database. But they would be possible.

Clearly the Internet would not be a substitute for TRnet, or the opposite. Rather the two should work in tandem. If nothing else, a TeleRead agency might eventually be a source of funds for Internet software developers. Quite understandably the developers of some software used on the network are tired of working without normal compensation. TeleRead funding would be one way to make their programs available to all while allowing these innovators to earn a living from their efforts.

ADDENDUM FIVE: A GREEN IDEA--GOOD FOR THE ENVIRONMENT

Not long ago, major computer makers started work on new "green computers" that would use far less energy than existing models. A prototype of IBM's green machine has already made the cover of *PC Magazine*. Given the number of PC's humming away in offices today, the ultimate energy savings should be substantial. And the less coal and oil burned, the less pollution--which suits the Environmental Protection Agency just fine.

But tens of millions of older PCs (including, yes, the one on which I'm writing this addendum) are not energy misers. How to speed up their replacement? TeleRead would help. Laptops are far, far more efficient than computers as a whole, and by driving down their costs, TeleRead would promote energy conservation and help the environment. What's more, government specs might call for cases to be made of the most easily recyclable material.

Needless to say, too, TeleRead would promote the shift from paper --books, magazine and newspapers. It would not happen immediately. But it would in the long run, as screens grew sharper.

Paper books on demand would be only a transitional technology, and even they would be superior in some ways to the present system; right now bookstores each year return millions of pounds of unsold paper books to publishers hundreds or thousands of miles away. What a waste of energy. By contrast, every book printed on demand would find a reader. Furthermore, the same shops that printed the paper books on demand could offer credit for recycling.

Clearly, however, all-electronic books and periodicals are the greenest solution of all, and TeleRead would help us reach this goal much faster than otherwise.

ADDENDUM SIX: HOW TO MAKE ALL BOOKS IMMORTAL

Back in 1985 a division of Random House published my first book, *The Silicon Jungle*, a blend of computer tips and stories from Silicon Valley. The *Washington Post* called the Jungle "sprightly" and "thorough." The book was not *Madame Bovary* or even *Soul of a New Machine*, but it did serve up many new facts about the industry and the people in it. *My Jungle* also carried predictions from Arthur C. Clarke; what's more, it told of the travails of reaching his Kaypro II in Sri Lanka in

the days of 300-b.p.s. modems. I had helped set up the trans-Pacific computer link for the scriptwriting of the movie 2010, and in the future, a few technobuffs just might want to know what went on.

To the Library of Congress, however, *The Silicon Jungle* apparently did not exist until I called the omission to the Library's attention in summer 1993. Earlier I could find it in neither the copyright records nor the catalogue.

Perhaps Ballantine Books division of Random House never sent a copy to the Library for full, formal registration, or else the librarians lost my book, discarded it, or never filed it away in the first place. If other writers dialed up the Library of Congress catalogue, some might very well see similar omissions. A library official believes that Ballantine Books may be at fault here, and I'm prepared to accept this explanation. I thank her for promptly correcting the oversight after she learned about it. My criticism here is over the system, not the dedicated librarians who run the Library of Congress.

Still, a lesson emerges here: Computerized libraries are only as reliable as the people who run them, or at least the publishers on whom the libraries rely. What happens in the future, especially if we use centralized databases; just how can TeleRead be a safe repository of books and other material? Can we really immortalize books? After two thousand years, historians still mourn the destruction of the great library at Alexandria, Egypt; it's been said that the calamity cost society most of its gathered wisdom. How can we avoid a high-tech reenactment? Note, too, that in 1851, a fire destroyed all 35,000 books in the main library of the Library of Congress.

Below are two precautions to take against the failings of people and machines.

Precaution #1: Realize That Books Are Too Important to Entrust Just to Librarians and Publishers

Imagine how many good books would drop out of sight if writers and publishers had to depend on bookstore sales alone. That is why TeleRead should increase the power of librarians and decrease that of the buyers at big book-chains. Thousands of librarians across the country could take part in this process to avoid too much influence from Washington or New York.

Just the same, writers and publishers should also play a role in deciding which books go online and get compensation; TeleRead would allow this by way of "bypass" books (explained in the main essay).

Eventually, most every manuscript should be fodder for the central database so that future generations can second-guess librarians and our publishing establishment. Moby Dick was not exactly a brisk seller in its time. At least, however, it found its way into print; without TeleRead, future Melvilles may not fare so well in the present commercial climate.

Precaution #2: Protect the Central Database-- To Avoid an Electronic Alexandria

TeleRead could actually be more secure than our present library system. Among other features, TeleRead could offer:

- * Geographically dispersed databases--as many as we could afford. Some might even be outside the United States, and, eventually, in space as well. To the user, of course, America's collection of memory banks would seem like one central database. Even if the world did not have one database, there is no reason why individual nations could not protect each other's virtual libraries.

- * Real-time replication of information to the extent that technology would permit. This should be at least a goal.

- * Constant backups on read-only media of different kinds*and constant monitoring of the integrity of media, since questions still exist about the permanence of some storage methods.

- * Use of different contractors to run databases.

- * Perhaps different operating systems among the databases. This would be one way to reduce the virus threat, beyond scanning.

- * Building TeleReader machines with enough mass storage so that eventually users could preserve almost everything they had ever dialed up.

- * Letting the TeleReaders themselves use different operating systems if possible, so that (a) it would be harder for a virus to infect all of them and (b) more vendors could compete for contracts. Detailed standards would allow compatibility with the central database, regardless of the operating systems employed.

* * * * *

By truly immortalizing all books, we would not just help literature. We would also advance the cause of peace. Hitler, it will be recalled, did not just try to exterminate the world's Jews; he also sought to wipe out their culture. Today the Serbs are burning their enemies' books. But with everyone's heritage preserved for the ages--in databases across the world--ethnic-cleasers would have one fewer motive.

ADDENDUM SEVEN: TELEREAD AND COMMUNITY NETWORKS

Big commercial services like to talk about "online communities"--people with similar interests, even if they may be thousands of miles apart. That's fine. But how about *real* communities? Can high-tech help bring them together--help citizens communicate with each other; learn more about their local governments and schools and libraries; and perhaps hook in with the outside world through the Internet or other networks? The answer is an unqualified yes. Around the United States--and in Canada, New Zealand and elsewhere--citizens are forming community networks. Many are called Free-Nets and use similar software. Patched together mainly by volunteers, community networks could be a national treasure if nurtured.

TeleRead would not replace these networks--quite the opposite. If people from a community showed an interest, they could use TeleRead's infrastructure for their

own networks at a fraction of the cost now needed. Under TeleRead, even small rural towns and cash-- strapped communities could establish networks. If nothing else, by driving down the cost of computers, TeleRead would vastly increase the number of people using the networks in poorer cities.

The program might also help finance the technical training of the system operators who ran the local networks. You might liken this to the programs to train people for community access television. Training for local community networks would be no more elaborate than training for cable television; the heavy-duty programming, after all, would be done elsewhere.

ADDENDUM EIGHT: WHAT TELEREAD WOULD MEAN FOR THE BLIND AND DEAF

Imagine the frustration of the blind and other visually impaired people. Only a small percentage of books, magazines and newspapers ever make it into Braille, which most blind people do not know anyway.

TeleRead, however, would put virtually all new publications online-- and old ones, too, eventually. And it would encourage the development of affordable portable computers with speech synthesizers that could read aloud material from TeleRead's network. What's more, people using TeleReaders could vary the size and style of print--a big help to the visually impaired with some sight left. Certainly TeleReaders could work with large-screen monitors.

What's more, TeleRead would benefit the deaf, who, if the printed word gives way entirely to sound-intensive multimedia, could be more cut off from the rest of the world.

The blind and the deaf would also come out ahead through the use of electronic forms. Speech synthesizers could read aloud from detailed prompts to guide the blind through the e-forms; and the deaf could benefit from instructions far more explicit than those on paper forms.

But it is the electronic library that perhaps could most change the lives of the blind and the deaf. From Gallaudet University in Washington, a deaf-oriented institution, comes an e-mail note from an educator named Kathy Pongor. She writes of TeleRead: "It would be such a boon for the population I'm currently designing a computer lab for--the deaf blind.

"Speech synthesizers don't work, and most of the output must be either in Braille or large print..... We have three people working full time just trying to handle the textbook and class note needs of five students (who are not even taking a full classload).

"So much time is wasted, trying to 'reinvent the wheel,' or in this case retyping the text (although we should be upgraded to a scanning/translation system by the end of the month).

"I also work with multihandicapped deaf children. They are so threatened by the printed word, but LOVE computers. They would read or write anything off a computer screen, but don't spontaneously pick up books unless prodded to do so.

"Keep in touch."

ADDENDUM NINE: OF TROLLEYS AND SAVAGE INEQUALITIES

Public libraries, on and offline, will be like schools in the future. If the middle and upper classes do not rely on them, then many libraries will suffer just as public schools have declined in our large cities. The best precaution against this would be a virtual central database for rich and poor alike. Then we would not replicate online the "savage inequalities" of our schools. Whether children lived in McLean, Virginia, rural Nebraska or Harlem, they could still dial up the same books.

Imagine my disappointment, then, when Ken Dowlin, city librarian for San Francisco, wrote a paper in which he said that "local libraries inter-connected with a sophisticated navigation system will become a Global Village Library. This is in contrast to the view of some technologists who believe that there is need for one gigantic electronic library in a central location. Not only is the one gigantic electronic library impractical, it is undesirable. The world is not homogeneous and we should not wish it so."

TeleRead does not insist on one big world library, and I am most baffled why Ken Dowlin acts as if we must choose between local collections (connected via networks) and a Big Brotherish database that serves the entire planet from one city.

I myself favor a mix of Internet-style servers (connected computers controlled by many different individuals, schools, companies, other institutions or governments) and an easy-to-use *national* library--a form of electronic federalism. The big library could pick up the best technology and some content from the servers. We could replicate the virtual central library at different locations for security's sake, and also to reduce communications costs.

This hybrid system, this electronic federalism, would be far more desirable than local servers alone. Long ago, many Americans once could go good distances by following one trolley line to the next. It was a fine system, but no replacement for express trains. We need both trolleys and trains.

Alas, much of the time, when I board a trolley on today's Internet, it goes nowhere. I may get a message saying that a server is down, or that the material is not available to me (perhaps for copyright-related reasons). I'm also irked by slow-responding servers when I key in commands. A virtual central database, on the other hand, could maintain technical standards better and be more easily upgraded as computers improved.

But what's meant by the words "virtual central" in this context? A schoolchild or other person dialing up the database would see it as one big, electronic library, even though people and machinery could be in different locations. A database like this would be much, much easier to use than a whole collection of independently run servers.

If anything a virtual central database would be better for individual communities. Local and university librarians, using federal money, but working

within their own allotments, could help choose books qualifying for royalties from the national database. Then local authors in San Francisco and other cities would fare much better than now. They could self-publish or get published more easily than under the present system, in which so many houses are fixated on best-seller lists and national and international markets. Isn't *content* one of the best ways of reflecting local sensibilities? And couldn't this system give local authors a better shot at a truly national market--and perhaps a global one, too, since interested nations could exchange books and whole libraries? With more opportunities for writers beyond the Hudson River, publishers in New York would appreciate talent in the boonies more than ever.

Even more important, with a national library for rich and poor alike, we would stand less chance of replicating online the "savage inequalities" of the American school system. Otherwise the upper-middle and upper classes would favor their own private alternatives and neglect the reading needs of the poor. If nothing else, public libraries in Bethesda and Beverly Hills might enjoy better funding for online acquisitions and services than those in Anacostia and Watts. Steve Cisler of Apple Computer once looked up materials costs for public libraries in California in this era of paper books. He found "sort of a library version of J. Kozol's 'savage inequalities.'" In 1988 the per capita figures were: \$87.46 for Beverly Hills, \$4.93 for Butte County (rural north), \$16.77 for Los Angeles, \$27.63 for Menlo Park, \$25.52 for San Francisco, \$30 for Santa Clara County, ~~\$30.00~~, and \$2.51 for Shasta County.

Statistics of this kind are not abstract to me. I live in Alexandria, Va., where the public libraries have a horribly limited selection of books compared to nearby Fairfax County, and where many on high-tech topics are obsolete. I pity the students here without easy transportation to better-off suburban libraries. Unless libraries could freely share online holdings without copyright worries, Ken Dowlin's approach just would not work. The Alexandria students couldn't dial up the same material as those in Fairfax County.

That leads to the issue of how authors and publishers would be compensated and protected if the local server system were fair to children and other library users in different places. To Ken Dowlin's credit, he admits that his vision does not already include "a system to deal with copyright and dissemination that protects the ownership of information and knowledge in an electronic display." Hold on a moment. As the author of six books, I have a slight interest in the above. Other people do, too--Random House, Time Warner, Knight-Ridder and the rest. And you can bet that talks between information companies, libraries and other special interest groups will go on forever, while our schoolchildren suffer, especially students from low-income and rural families.

Meanwhile I notice that an online bookstore wants readers to pay \$5 to download a 25-page short story from Stephen King. When trying to get children to enjoy books, do we really want the meter running at 20 cents a page? Stephen King just might be the author whose works most excited a young reader, and I don't have

to tell Ken Dowlin about the relationship between recreational reading and reading skills in general. Without the central database, we may well have arrangements like the one for the King story. And I won't blame publishers. In a similiar situation today, I, too, might charge the 20 cents a page to allow for illegal reproductions of copyrighted material. I'd have to let honest reader subsidize the freeloaders.

An aside: The existence of a central library would not rule out private companies' publishing paper books or setting up their own databases. I suspect, however, that in most cases, companies would make more money by focusing on the big national library. If censorship problems did arise, some Lyle Stuart-style publishers could do very well with their own networks. I myself, however, suspect that with a system of many librarians involved there, TeleRead would offer *more* diversity and freedom of expression than today when many marketers are trying so hard to homogenize books.

The biggest irony, however, is that some of the same librarians talking against true centralization online believe in centralization of a traditional kind. An author's note about Ken Dowlin says: "He directs twenty-seven facilities with a \$21 million operating budget. Projects currently in progress include the supervision of the building of a \$140 million New Main Library and \$20 million in capital improvement in the branch libraries. The New Main Library will be a 370,000 square-foot building, doubling the size of the current Main..."

Just what does such pride in size tell taxpayers in an era when governments are trying to get the most for the money? While the \$140-million building may be necessary today--given the *current* state of technology--it should not be a source of pride but rather a source of frustration. The \$140 million could have bought more than 140,000 portable computers even at today's prices. It could have paid the advances on at least 25,000 first novels or have purchased tens of thousands of new paper books, magazines and professional journals. And without such a massive Central Library, the number and size of local branches could be dramatically increased.

Again, I can see the need for \$140-million libraries now, but not in the future. Much of the money might better go toward small neighborhood branch libraries--offering in-person advice and encouragement to children and other people who wanted to dial up books from home. Talk about the need for decentralization.

ADDENDUM TEN: UPDATES

* Greg Simon, domestic policy advisor to Al Gore, has forwarded the TeleRead proposal to the Office of Science and Technology Policy for consideration.

* Thomas C. Komarek, Assistant Secretary of Labor for Administration and Management, has written: "Your proposal contains some very interesting concepts for expanding and enhancing computer technology throughout the nation. Moreover, your suggested database containing books covering a broad spectrum of

subjects would certainly encourage reading." Dr. Vicki Hancock, a technology expert with the Association for Supervision and Curriculum Development also sees major benefits here.

* William F. Buckley, Jr., endorsed the basic TeleRead concept, "a bracing idea," in a column published around May 21, 1993. The exact date may vary from newspaper to newspaper. The column went out under the suggested headline "The TeleRead in Your Future." Among U.S. journalists, Mr. Buckley is one of the foremost defenders of property rights--perhaps the foremost. In supporting TeleRead, he is being consistent. Existing copyright laws are incapable of protecting digitized books and other intellectual property.

* Grass-roots reaction is terrific. One of my favorite comments is from Loretta Trentanelli--who, as LoriHon, is active in the Home Schooling Forum on America Online. "If TeleRead becomes a reality," she says from Illinois, "it'll open a world for all kinds of people, me included! Heck with the kids. They can come in and read after Mom is finished!" But why keep them waiting? TeleReaders in the end could be almost as cheap as calculators, meaning that families could afford one for each child. Loretta Trentanelli goes on: "Even anti-taxers like me would be willing to foot the bill for something so practical and knowledge-infectious." By putting tens of thousands of books online--for free or for small subscription fees--TeleRead could help public schools, private schools, religious schools, and home schools alike.

* Michael Dirda, the steel-town native whom I mention in my argument against "Knowledge Stamps," has just won the Pulitzer Prize for literary criticism. As if that isn't enough, novelist Toni Morrison, also from Lorain, Ohio, has won a Nobel Prize. The point here is that some of world's best talent comes from out-of-the-way places; and TeleRead could help future Dirdas and Morrisons. Their numbers would dramatically increase, benefitting society in general. We mustn't let good books become the province of just the elite.

* Xerox's research center in Palo Alto, California, has developed experimental LCD screens with a resolution as good as that of most laser-printed documents. Don't look for such miracles at your computer store tomorrow. The screens, however, are one more indication that the technology for TeleReaders isn't as exotic as the ignorant would think. What's more, industry gossips are already talking about Intel's plans to produce the powerful Pentium chips for notebook computers. The old wisdom from Arthur C. Clarke is truer than ever: Experts are more often wrong in saying that something can't be done than in saying that it can.

* Having shown how TeleRead could save money through the mass use of electronic forms, I am dropping my suggestion for a five-percent TV tax. It is no longer necessary. Ideally cable companies--along with phone companies--will see benefit in the plan as it now exists. TeleRead could send billions of dollars of business their way. As before, I suggest that TeleRead could use telcom leased from the private sector.

* I don't know if Peter Drucker, the management expert and business philosopher, has seen the TeleRead proposal, but it would appear he might be quite open to it. He recently told *Wired* magazine: "We have to rethink the whole concept of intellectual property, which was focused on the printed word. Perhaps within a few decades, the distinction between electronic transmissions and the printed word will have disappeared. The only solution may be a universal licensing system. Where you basically become a subscriber, and where it is taken for granted that everything that is published is reproduced."

* TeleRead is the topic of a friendly article in the summer issue of the magazine published by the Internet Society.

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AACC

AMERICAN ASSOCIATION OF COMMUNITY COLLEGES

October 29, 1993

Bruce Lehman
Assistant Secretary of Commerce and
Commissioner of Patents and Trademarks
U.S. Patent and Trademark Office
Box 4
Washington, DC 20231

Dear Mr. Lehman:

I write as president of the American Association of Community Colleges (AACC). AACC represents well over 1,100 of the nation's associate degree-granting, regionally accredited postsecondary institutions. I would like to testify at the public hearing on intellectual property issues involved in the National Information Infrastructure (NII) Initiative to be held November 18, 1993. I will be speaking in particular about issues of access and equity related to intellectual property, as well as the impact of the NII on community colleges.

The nation's community colleges, as deliverers of distance learning and lifelong learning are poised to reach out in new ways to the communities we serve. We look forward with much anticipation to the imminent changes in national network policy and the opportunity to testify next month. I appreciate your consideration of my request and I hope to hear from you soon.

Sincerely,



David Pierce
President

DP/ag

BEFORE THE PATENT AND TRADEMARK OFFICE

Intellectual Property Issues)
Involved In the National)
Information Infrastructure)

COMMENTS

We submit these Comments on behalf of The American Association of Community Colleges (AACC). AACC represents well over 1,100 of the nation's associate degree-granting, regionally accredited postsecondary institutions. AACC's member colleges enroll more than six million students in college credit programs and an additional five million students in courses for personal enrichment and lifelong learning. They serve the majority of Americans first entering college, as well as the largest undergraduate populations of women, ethnic minorities, and the economically disadvantaged.

Community colleges promote an open door admissions philosophy. Their students come from all walks of life, with varying academic credentials, and pursue many different goals. The curricula of community colleges are extraordinarily diverse; they include occupational, technical, and lifelong learning programs in addition to university transfer programs. Community colleges also work in partnership with high schools and the civic and business communities to develop the world-class work force that is prerequisite to success in today's international economy.

Community colleges provide essential resources to their local communities. In the rapidly developing global economy, where the skills necessary for personal and economic success are constantly changing, community colleges are one of the principal providers of training and continuing education for the local work force, small and large businesses, and health care providers. The need for continuing education, skills upgrading, and work force training programs is growing at a tremendous rate. Community colleges are located within reach of nearly all of the nation's employers and can provide these services economically. Nearly all community colleges already provide some work force training designed to meet the specific needs of business, industry, labor, and government in their service areas.

Community colleges will continue to lead the way in helping all elements of society to use new information technology; and community colleges must be an integral part of the development of the National Information Infrastructure (NII). Let us elaborate.

1. NII must be developed in a partnership. Business, industry, labor, government, and higher education must work together to develop the NII. Community colleges are a vital element in this partnership. They have pioneered in the use of telecommunications to bring education to the student. Therefore, they are a natural vehicle to ensure access and equity to the NII for both urban and rural communities, and are well-positioned to

serve as the conduit for local communities in accessing, retrieving, and communicating information from the NII.

2. Funding, standardization, and interoperability must be integral to the components of NII. Many obstacles can inhibit the growth of the NII. Diverse protocols, the lack of interoperability, and the high cost of equipment, connection and operation will frustrate access to NII and could prevent many entities, including community colleges, from full participation in the information age. As the various aspects of the NII are developed and implemented, funding must be made available to the public sector to assure connection to the NII.

For example, one of the big jobs in implementing the NII will be converting library collections to digital formats. Copyright laws should be modified to make this vast task less complex and burdensome, and federal financial support should be provided on an initial and on-going basis. To compensate copyright owners, a new statutory license should be developed. This license would eliminate cumbersome clearance procedures, while allowing financial benefit to flow back to copyright proprietors.

Further, standardization and interoperability must be strongly encouraged. Educational institutions cannot afford to invest in equipment, hoping that their choice will become the norm. Educators must be confident that their investment in technology will be useful over the long term.

3. The NII must be easy to use. The technology must be transparent. Users, whether they are faculty, students, or laypersons in business or industry, should not be burdened with the process of determining what can and cannot be accessed due to a lack of interoperability. With adequate funding and a strong guiding force in determining interoperability standards, community colleges can provide access to the NII to all economic levels of the communities they serve.

4. Intellectual property rights and fair use provisions must be modified and then reviewed on a continuing basis. In order to assure that the needs of both the education producers and users of intellectual property are met, current educational exemptions and fair use provisions of the copyright law must be modified. When the Copyright Act was passed in 1976, face-to-face interaction between teachers and students, as well as "Sunrise Semester" television programs, were the model. The vast potential of telecommunicated learning was yet to be recognized.

Today, community colleges are well aware of the potential conflicting issues and problems with the NII involving intellectual property rights and fair use provisions of the copyright law. As educators, the issues of intellectual property and copyright are significant to our daily operation. Community colleges address these both as users and producers of intellectual property.

With the advent of multi-media, community college educators are developing lessons using a vast array of voice, video, and data resources. They are able to create complete lessons from a variety of information sources and record them on compact disk for playback by students in the classroom, at work or at home. In the future, many student will operate in an independent learning setting due to the increased number of resources available to them.

However, cumbersome copyright regulations, complicated licensing procedures, and prohibitive costs could derail students and professors alike. As educators of the nation's work force, community college teachers must have economical and open access to information available via the NII. We cannot afford an NII that does not provide students and faculty with the resources necessary to reach their full academic potential.

With these educational goals paramount, the copyright exemptions in Section 110 should be clarified to include not only certain "transmissions of performances," but also recordings and distributions of those performances. It stands to reason that if the original classroom performances and transmissions were exempt, then their recordings should also be exempt. Because modern telecommunications equipment, which forms the backbone of the NII, enables students who cannot attend "live" classroom presentations to record them for later viewing, there should be no legal impediment to that recording, or to the colleges themselves distributing those recordings to students.

Community colleges also represent an ever-growing population of information producers. Community college staff publish educational materials and research. As leaders in the implementation of technology for teaching and training, community college staff create instructional and multi-media software as well as teleconferences and telecourses for use in education and business throughout the nation.

Pedagogy and technology are constantly changing. Fair use and other provisions of copyright law must keep pace. This review of copyright policy should be on-going, so that its revisions are consistent with our educational community's changing needs. Without such revision, the cost of and access to information via the NII would be prohibitive to community college faculty and students.

5. Community colleges can provide education and training for the NII. As the NII is developed and the issues of intellectual property and copyright law are reviewed and updated, community colleges, leaders in the use of technology for the delivery of education and training, are eager to play an important role in increasing public awareness.

Community colleges are logical links for communities to the NII. Community colleges also will be sought out for training and information on intellectual property and copyright. As active developers of distance education programs, including telecourses and national interactive teleconferences, community colleges have the technical skills to reach a majority of the

urban and rural populations in the United States and throughout North America.

Government and private industry will use the community college system as a vehicle for training and supplying information on the policies and procedures for utilizing the NII. A grant program to develop and deliver on site-training, electronic town meetings and local public hearings needs to be established. Community college partnerships with government and industry should be a priority to assure timely dissemination of new regulations as they are developed and implemented.

As noted, community colleges are and will be a primary link between the NII and local communities throughout the next decade. It is critical that community colleges be directly involved in all aspects of the National Information Infrastructure's development.

6. Request to Testify. David Pierce, President of the American Association of Community Colleges, requests the opportunity to testify before the Working Group at the Public Hearing on November 18, 1993.

Respectfully submitted,

American Association of
Community Colleges

Dow, Lohnes & Albertson
1255 23rd Street, N.W.
Washington, D.C. 20037

By 
Michael B. Goldstein
Arnold P. Lutzker
Richard D. Marks

November 8, 1993

Its Counsel

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SUMMARY OF STATEMENT BY

FRITZ E. ATTAWAY

**Senior Vice President and General Counsel
Motion Picture Association of America, Inc.**

Before the
PATENT AND TRADE MARK OFFICE
Working Group on Intellectual Property
of the
Information Policy Committee
of the
National Information Infrastructure Task Force

November 18, 1993

-2-

Adequate and effective copyright protection is an essential element of the national information infrastructure. Without effective protection of the rights of those who create copyrighted works, the wondrous potential of communications technology will be delayed, if not subverted.

The value to society of a national information infrastructure will depend in large part on the availability of information. A communications superhighway is of little use to a society that does not create and disseminate large quantities of information.

Faithful adherence to basic principles of copyright protection has helped this country become the largest creator, user and exporter of intellectual property in the world.

The economic importance of America's copyright industries is illustrated by the following statistics recently released by the International Intellectual Property Alliance:

-- The core copyright industries accounted in 1991 for over \$206 billion in revenues from their copyright-related activities, or 3.6% of the U.S. GDP.

-- In 1991, the total copyright industries accounted for \$325 billion in value added, or about 5.6% of GDP.

-- The core copyright industries grew at close to three times the rate of the economy as a whole between 1977 and 1991 (4.2% vs. 1.5%). Total copyright industry employment in 1991 stood at 4.8% of all employment (5.5 million).

-3-

-- These industries employed new workers at a greater rate -- 3% between 1977 and 1991 -- than any other comparably sized sector of the U.S. economy and at more than three times the remainder of the U.S. economy (3.0% vs. 0.97%).

-- These industries delivered over \$36 billion in foreign sales to this country in 1991. Preliminary data for 1992 indicate growth of 9% to \$39.5 billion, an achievement exceeded only by the aerospace and agriculture industries.

-- The motion picture industry alone -- movies, TV programs and home video material -- contributes some \$4 billion annually in positive balance of trade.

Trade is vital to the production of copyrighted works in the United States and copyrighted works are essential to achieve the full potential of a national information infrastructure. Therefore, the ability of U.S. copyright owners to protect their works from theft in foreign lands, and to gain access to markets abroad, must be of great concern to this Task Force.

The Task Force should actively support the efforts of the U.S. Trade Representative to negotiate a GATT agreement that fully applies free trade principles to U.S. copyright industries. Specifically, the Task Force should call for, as part of the National Information Infrastructure Initiative, a GATT agreement on services that assures U.S. copyright industries open access to the markets of our trading partners. Moreover, the Task Force should call for an effective TRIPS agreement that provides full national treatment -- an essential safeguard that is lacking in the present text. (I should note in this regard that the Patent and Trademark Office has been in the forefront of the GATT TRIPS negotiations and is to be commended for its efforts on behalf of U.S. copyright industries.)

-4-

Domestically, the Task Force should seek to insure that the exclusive rights provided in Section 106 of the Copyright Act are broadly construed to cover new uses of copyrighted material made possible by technological advances. One of the great features of our copyright law is that it lays down basic principles in simple language that can be adapted to changing circumstances.

It should be presumed that the National Information Infrastructure can function effectively under the current strictures of the Copyright Act. In most cases, the marketplace can and will adapt to insure maximum availability of copyrighted works within the bounds of the Copyright Act that maintain financial incentives necessary for the creation and distribution of new works. Exceptions to the exclusive rights enumerated in Section 106 should be considered only after clear and convincing evidence has been presented that the marketplace cannot adapt under the existing statute to maximize the long term interests of creators and users of copyrighted material.

Turning to the specific questions presented in the Notice of this hearing, I would like to make the following points:

1. With relatively modest fine tuning, including the recognition of performance rights for sound recordings, our existing copyright law is adequate to protect the rights of those who will make their works available via the NII. If, as recommended above, existing law is given broad application to protect the rights of copyright owners, few statutory or regulatory changes should be necessary.

-5-

2. The Fair Use provisions of existing law do accommodate legitimate user interests and should not be expanded with regard to works available via the NII. To expand Fair Use at the expense of rights owners would be counterproductive because rights owners would be discouraged from using the NII.

3. Government should avoid to the greatest extent possible the imposition of standards for labeling, encoding, intercommunications, interoperability, licensing etc. The marketplace should be given maximum opportunity to meet the needs of NII users.

4. Technical means to prevent unauthorized reproduction should be encouraged, but use of government mandates should be limited to situations where the marketplace cannot adapt to meet the needs of owners and users of copyrighted material.

5. There is a need for greater public awareness of intellectual property laws and their value to society. Children should be educated at an early age that intellectual property rights are as important as other property rights.

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**Before the
WORKING GROUP ON INTELLECTUAL PROPERTY
INFORMATION POLICY COMMITTEE
NATIONAL INFORMATION INFRASTRUCTURE INITIATIVE TASK FORCE**

**COMMENTS OF
THE RECORDING INDUSTRY ASSOCIATION OF AMERICA
ON THE INTELLECTUAL PROPERTY ISSUES INVOLVED
IN THE NATIONAL INFORMATION INFRASTRUCTURE INITIATIVE**

Introduction

The Recording Industry Association of America, Inc. (RIAA) is a trade association representing the interests of American record companies. Our member companies create, manufacture and distribute over 95 percent of the prerecorded music sold in the United States and 60 percent of all sound recordings created worldwide. We submit these comments in response to the October 19, 1993 Federal Register notice of the Working Group on Intellectual Property raising a number of issues associated with the protection of copyrighted material that may be disseminated via the National Information Infrastructure (NII).

The National Information Infrastructure holds the promise of transforming, and in many ways enhancing, the manner in which the public receives and enjoys a wide array of entertainment services, voice and data communication services, and other forms of information. Everything capable of being reduced to zeros and

ones, whether literary text, audio or audiovisual works, or other information can be delivered digitally via the NII without the transfer of a physical product. As a result, the NII can become the electronic entertainment/information "superstore" of the future, challenging our basic assumptions on the adequacy of our intellectual property laws to achieve the proper balance between the rights of creators and rightsholders and the interests of NII users.

We also see the orderly development of the NII as critical for the United States to maintain its status as an economic superpower as we enter the twenty-first century. Our nation's intellectual property and telecommunications industries remain world leaders. In particular, the U.S. copyright-based industries remain one of the largest and fastest growing sectors of the U.S. economy, continuing to greatly outpace other sectors of the U.S. economy in creating jobs for American workers and in generating impressive foreign sales that produce a substantial net balance of trade. The manner in which our government nurtures the development of NII, and the copyright-based industries whose works are delivered via the NII, may well determine how other nations treat our property rights in their own electronic superhighways.

For these reasons, the RIAA welcomes the Administration's leadership in helping to forge the formation of the new electronic superhighway. We are particularly gratified that your Working

Group has been assigned the critical task of exploring the myriad of intellectual property issues associated with the NII. Our nation's intellectual property laws are intended to provide authors and publishers the incentive to create and disseminate new works of authorship for the public benefit. Yet, without the proper intellectual property foundation necessary to maintain these incentives, the new electronic superhighway may be nothing more than a modernized telephone system comprised of fiber optic lines and wireless communications channels. Unfortunately, of all the copyright-based industries, the recording industry may be the most endangered by the NII. If the full range of capabilities of the NII are allowed to develop without the necessary complement of intellectual property rights for sound recordings, the very core of our industry's survival will be threatened.

The Notice sets forth a series of issues to be examined by the Working Group. Each issue will be addressed in turn, not only in this Statement, but also during our testimony at the November 18, 1993 Hearing. Of course, the RIAA stands ready to further assist the Working Group as its work on this important matter progresses.

Issue 1: Is the existing copyright law adequate to protect the rights of those who will make their works available via NII? What statutory or regulatory changes, if any, should be made?

Response to Issue 1: In the main, the bundle of exclusive rights set forth in Section 106 of the copyright law is both elegant and comprehensive. Accordingly, there does not appear a need to create any new types of exclusive rights directed at NII transmissions.

What needs to be done, however, is to assure that **every** type of copyrighted work is afforded the necessary scope of these bundle of rights to function properly in the NII environment. Unfortunately, in the area of protection of sound recordings, our current copyright law is noticeably deficient. Today, every type of copyrighted work **except** sound recordings enjoy among their rights the exclusive right of public performance.

Thus, under current law for example, when a prerecorded song is performed via the NII, the artist who sings the song, the musicians and back-up singers, and the record company whose creative and technical contributions and financial investment made the recording possible, have no rights to authorize this performance of their work. (On the other hand, songwriters and music publishers do have these rights since musical works, unlike sound recordings, have a public performance right.)

This glaring gap in copyright protection has historically prejudiced the interests of record companies and performers. While unfair and suspect in relation to existing analog broadcasting, the absence of a public performance right in all digital audio transmission environments, including digital audio broadcasting (DAB), digital cable audio services, as well as the NII, can be devastating. Under current law, based on the purchase of a single compact disc, any digital audio transmitter will be able to transmit that product to all those receiving the signal without permission from the creators of that prerecorded music.

We have already seen the emergence of two digital cable audio services, Digital Music Express and Digital Cable Radio, that each provide to cable subscribers for a subscription fee over thirty different channels of uninterrupted CD-quality music twenty-four hours a day. Additionally, proposals are currently before the Federal Communications Commission to establish both terrestrial and satellite-delivered digital broadcast audio services. These services will be able to deliver CD-quality sound on an advertiser-supported and/or subscription basis. Patterned after the evolution of cable television services, they all can further close the gap between transmissions and record store purchases by offering pay-per-listen services, which, like current cable pay-per-view services, will enable listeners to obtain a direct, time-certain transmission of an album of their choice with a pricing structure likely to be cheaper than that of record stores. And just beyond that is the advent of on-line electronic delivery services, what some have called "audio on demand" or the "celestial jukebox", which will enable consumer to select music to listen to at their convenience without ever making an actual copy.

All of these types of services -- and more -- could be available, perhaps with enhanced capabilities, through the NII. Should they operate, as they would under current law, outside the control of the company producing the recordings, there would be no financial return either to the record company, or to the artists and others involved in the creation of the recording. The NII

would thereby siphon off and eventually eliminate the major source of revenue for investing in future recordings. Over time, the uncontrolled messenger would strangle its host, as investment in the production of recorded music dried up in the absence of record sales. It is contrary to our nation's interests to allow this scenario to become reality.

Though not directly related to the development of the NII, it also must be recognized that the absence of a performance right in sound recordings prejudices the interests of American record companies and performers, as well as the position of the U.S. government, in the international trade and copyright arenas. Approximately sixty nations, including at least nine European Community member states, grant public performance rights in sound recordings. Much of the revenue presently collected for public performances around the world is either denied to U.S. record companies or at risk since the U.S. does not grant reciprocal protection. Moreover, just as the United States' reluctance to accede to the Berne Convention once placed U.S. trade negotiators in the awkward position of asking for more copyright protection in the international arena than afforded at home, the absence of a performance right in sound recordings now similarly frustrates and embarrasses U.S. negotiators. This situation completely undercuts U.S. credibility and affords our trading partners with a far too easy excuse to deny extended protection to U.S. sound recordings in their own states. And the problems of securing such necessary

extended protection will be exacerbated as other states make plans for their own electronic superhighways. The American recording industry is too important to our nation's balance of trade to allow this situation to continue.

Fortunately, legislation has been introduced in both houses of Congress, H.R. 2576 and S. 1421, that would close this glaring gap in U.S. copyright law and grant owners of sound recordings the exclusive right to control the digital transmission of their works. This legislation is essential to establishing the proper legal framework for the recording industry to function in the NII environment. We urge the Administration and this Working Group to support and work actively towards its enactment.

Issue 2: Do the existing fair use provisions of the copyright law adequately accommodate the interests of users of the works available via the NII? What statutory or regulatory changes, if any, should be made?

Response to Issue 2: The fair use doctrine plays an important and appropriate role in U.S. copyright policy. Fair use remains, however, an equitable rule of reason, with each case decided on its own particular facts. Assuming that alternative means of access to copyrighted works also available through the NII remain, we see no reason why statutory or regulatory changes need to be made to accommodate the interests of "fair users" in the NII environment.

Issue 3: Should standards or other requirements be adopted for the labeling or encoding of works available via the NII so that copyright owners and users can identify copyrighted works and the conditions for their use?

Response to Issue 3: It is in the interests of both copyright owners and NII consumers, that the government require NII transmitting entities to include as part of their transmissions the digital subcode information embodied on copies and phonorecords of copyrighted works that identify the works and their conditions of use. In addition to providing consumers with useful material about the works they receive, this information may also help facilitate licensing transactions in the NII environment.

With respect to sound recordings, we urge the mandatory transmission of the International Standard Recording Code (ISRC), which has been adopted as a world standard (ISO-3901) by the International Organization of Standardization (ISO) in 1986. The purpose of the ISRC is to provide a permanent means for electronic identification of audio, video, or audio-visual recordings. It is applied to entire programs, and individual sound tracks within the programs, without regard to what physical product format -- for example, compact disc (CD), Mini-Disc (MD), Digital Compact Cassette (DCC), or digital audio tape (DAT)-- may be employed.

The ISRC is alphanumeric, using digits (arabic numerals 0-9) and letters of the Roman alphabet. It consists of twelve characters, representing the five code elements: Country of Origin, First, Owner, Year of Recording, Recording Code and Recording Item. The RIAA serves as the U.S. registry to allocate

company (First Owner) codes. The balance of the code elements are administered by companies or individual program producers.

Most of the record companies worldwide have recently implemented the ISRC or are now in the process of doing so.

DCC and MD currently provide additional consumer information identifying the performing artist and the musical selection. Our industry now is examining the inclusion of similar useful data on compact discs. A plethora of additional information can also be embodied in the prerecorded digital subcode including, for example, detailed artist biographical notes, recording session history, and lyrics. The desirability of such enhanced recording information to NII consumers are obvious.

With respect to information relating to conditions of use, we note that the NII should allow for the delivery of such information, both as may be set forth by the copyright owner or, as the case may be, by the service transmitter. The inclusion of copy protection data is further addressed in our Response to Issue 6.

Issue 4: Should standards be established to encourage or require intercommunications or exchange of information and the interoperability of the different types of computer software and systems supporting or utilizing the NII?

Response to Issue 4: In recent weeks, we have seen proposals for mega-mergers of telephone and cable television companies, as well as "strategic alliances" among programming and communications companies, all aimed at serving as part of the new electronic superhighway. Because of the differing transmission and digital

compression systems that may be employed by these entities, it is clear that the technical standards and related matters concerning the NII will require, at minimum, a significant measure of liaison and coordination.

It is unlikely that the NII will ever achieve its full potential until standards can be developed which encompass the varied user requirements over the full spectrum of the telecommunications, computer and entertainment industries. At the present time, no such standards exist. While premature standardization may carry the risk of inhibiting further innovation, it can also be argued that the establishment of a basic framework of operation will actually encourage innovation.

A configuration of the NII as a simple "open architecture" network can facilitate the interconnection of some professional users, but it would probably be inadequate to serve consumer needs. The problem is due to the multiplicity of data formats which are presently vying for marketplace acceptance and which are mutually incompatible with one another.

In multimedia applications, for example, incompatible optical memory formats include CD-ROM, CD-I, CD-FMV, and CD-G, and no interface standard has yet been developed. For digital audio applications, some professional interface standards have been developed by the Audio Engineering Society, but these do not apply to consumer equipment.

The proliferation of various mutually incompatible formats for prerecorded audio media appears to be increasing as new products, such as DCC and MD are introduced in the marketplace to stand beside the CD. Since it may be presumed that music encoded in any digital audio format may serve as a program source on the NII, it will be necessary at a minimum to develop an interface standard with identification codes to instruct receiving devices to use an appropriate decoder algorithm. Of course, differing media embodying other types of copyrighted works will only add to the complexity of establishing proper standards.

An additional problem of multiple audio encoding formats arises from the desire to reduce the required data capacity of recording media and transmission links. New proprietary audio data compression algorithms called "perceptual encoders" are becoming widely used. Unfortunately, a program encoded with one system cannot be decoded by another. DCC employs the "PASC" compression system and MD uses "ATRAC"; high definition television (HDTV) sound will likely use "AC-3" and, for digital audio radio systems now under consideration by the Federal Communications Commission, the choice seems to be between "AT&T-PAC" and "MPEG-II". Not only are these compression schemes incompatible with one another, but there may also be a significant reduction of audible quality when program signals are cascaded through multiple codecs of similar or different formats.

Accordingly, the development of the NII will require, at minimum, significant liaison with various standards groups which are presently established. At the international level, there are the International Electrotechnical Commission (IEC), the International Organization for Standardization (ISO) and the various agencies of the International Telecommunications Union (ITU). In the U.S., the Society of Motion Picture and Television Engineers (SMPTE) deals with standards for professional video applications while the Audio Engineering Society (AES) does the same for audio. The Electronics Industry Association (EIA), often in cooperation with the National Association of Broadcasters (NAB) recommends standards for various broadcast services, and the recently organized Interactive Multimedia Association (IMA) hopes to resolve certain compatibility issues with respect to optical memories. In the field of HDTV, the so-called "Grand Alliance" of seven competitors is seeking to recommend HDTV standards, while in Japan, a group of manufacturers are attempting to develop a standard for consumer High Definition Digital VCR.

As the foregoing alphabet soup of systems and standards organizations amply demonstrates, technical standards and related matters concerning the NII will require, at minimum, a significant measure of liaison and coordination.

Issue 5: Should a licensing system be developed for certain uses of any or all works available via the NII? If so, should there be a single type of licensing or should the NII support a multiplicity of licensing systems?

Response to Issue 5: Assuming the proper scope of rights are provided to sound recording rightsholders (discussed supra in Response to Issue 1), we believe that the copyright marketplace functions best when left to marketplace forces. Licensing systems are likely to evolve over time as creators, service providers and NII consumers become more accustomed to the potentials of the NII. For this reason, it is too early for us to determine exactly the kinds of licensing systems that should be employed or the antitrust issues that may need to be addressed in connection with one or more of them. With this being said, we tentatively believe that the NII should support a multiplicity of licensing systems as determined by the rightsholders and their service providers.

Issue 6: Are there technical means for preventing unauthorized reproduction or other unauthorized uses of copyright works that should be mandated or required to comply with certain standards (similar to the serial copying controls required in digital audio recording devices and digital audio interface devices under the Audio Home Recording Act of 1992)?

Response to Issue 6: With respect to digital audio recording, the Serial Copying Management System (SCMS) prescribed by the Audio Home Recording Act of 1992 is the appropriate means of preventing unauthorized noncommercial private home copying. The SCMS was originally described in a standard (IEC-958) issued in 1989 by the IEC.

The Audio Home Recording Act requires that non-professional digital audio recorders imported, manufactured or distributed in the U.S. incorporate SCMS. The SCMS circuitry in these recorders decodes certain information encoded in the digital subcode data stream of digital audio recordings that instructs whether to allow the material to be digitally copied without limitation, to allow the material to be copied only on first generation copies, or, to prohibit any copying. The Act excludes professional digital audio recorders from the application of the SCMS, and neither the Act nor the IEC-958 standard apply the SCMS to video or computer equipment. These latter exclusions may not be appropriate for the NII.

Consideration should be given to requiring NII transmitters to deliver the SCMS information (current law merely requires digital transmitters to deliver the SCMS information accurately, if they choose to deliver it at all). While the "optional" approach of current law may perhaps be appropriate in a digital broadcast environment, we believe stricter controls may well be called for in the NII.

As the NII provides access to copyrighted works generally, it also provides the opportunity for abuse, such as in the area of piracy. Obviously, the Audio Home Recording Act, through SCMS, only addresses the issue of unauthorized second generational digital audio recording. An SCMS solution may be inadequate with respect to the dissemination of other types of works. Therefore, the Working Group should examine how source code and other

technical means can and should be applied to protect the integrity of the various types of intellectual property generally that will be available through the NII. The Working Group also should consider circumvention issues associated with possible technical protection systems and the level of software and hardware industry cooperation that may be required to implement these systems and to minimize their circumvention.

Issue 7: What types of educational programs might be developed to increase public awareness of intellectual property laws, their importance to the economy, and their application to works available via the NII?

Response to Issue 7: Educational programs can play a valuable role in underscoring to NII users, as well as the public generally, the importance of intellectual property protection to our national, economic and public interests. The RIAA stands ready to work with other governmental and nongovernmental organizations to assist in such an effort.

At the same time, the intellectual property industries cannot rely solely on educational programs to assure compliance with appropriate copyright rules for use of NII. For this reason, we believe that education should be combined with technical measures to assure against abuse of the NII system.

Conclusion

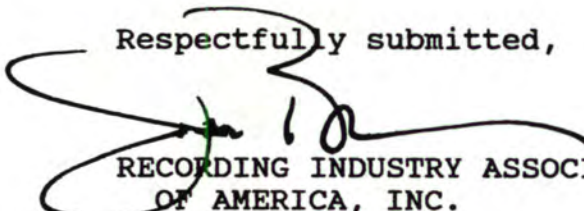
The NII holds the promise of dramatically enhancing our nation's economic and public welfare. At the same time, as authorship and information in the NII are transformed into a series of zeros and ones, it is critical that our copyright laws create a

seamless web of protection. Enactment of H.R. 2576 and S. 1421, providing a public performance right for sound recordings in digital transmissions, is an essential first step in this process. We urge the Administration and this Working Group to support, and work actively towards, its enactment.

Formation of the NII also poses numerous technical challenges, not only in terms of the types of the "content based" and "user interface" information that should be included within its transmissions, but also in achieving necessary levels of transmission compatibility. With respect to the transmission of sound recordings via the NII, the Working Group should recommend the mandatory transmission of the IRSC and SCMS codes and carefully consider the mandatory transmission of other NII consumer information that may be embodied within the digital subcodes of these recordings.

The RIAA is grateful for the opportunity to present these Comments and looks forward to further assisting the Administration in the formation of the NII.

Respectfully submitted,



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