

1 we can simply protect sound recordings in the same way we
2 protect all other copyrighted works. And you don't have to
3 draw that line in the law.

4 CHAIRMAN LEHMAN: If there are no other questions,
5 we'll move on.

6 Our last witness of this morning, who I'll assume
7 we'll hear quite a different point of view from, Mr. Richard
8 Ducey who is Senior Vice President and Director of Research
9 and the Information Group for the National Association of
10 Broadcasters, and Ben Ivins, Assistant General Counsel for
11 the National Association of Broadcasters.

12 TESTIMONY BY RICHARD DUCEY, Ph.D., AND
13 BENJAMIN F.P. IVINS, ESQ.

14 MR. IVINS: Thank you, Commissioner Lehman. My
15 name is Ben Ivins, I'm Assistant General Counsel for the
16 National Association of Broadcasters. With me today, as you
17 said, is Rick Ducey, Senior Vice President of NAB's Research
18 and Information Group.

19 Mr. Lehman, let me begin by commending you and
20 those others in the Clinton Administration responsible for
21 creating the infrastructure task force. I think the mandate
22 that the task force has established, for both itself in
23 general and for your Working Group in particular, is daunting

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1 and formidable. On the one hand you are to promote universal
2 access and the dissemination of information to all Americans,
3 rich and poor, and to those highly educated and to those in
4 need of being educated; on the other hand, your mandate is to
5 ensure the integrity of intellectual property rights and
6 copyrights in information and entertainment products.

7 To be candid at this juncture NAB is nowhere near
8 the point of coming up with the proposed solutions to many of
9 the vexing questions your Working Group must confront.
10 Indeed, we profess not even to have thought probably of all
11 of the questions. Nevertheless, with that caveat, we would
12 like today to give you a two-part presentation of some of
13 NBA's preliminary view on the role we see broadcasters
14 playing with respect to the NII and some of the copyright
15 implications regarding those activities.

16 First, Dr. Ducey will provide you with a synopsis
17 of some of the challenges and opportunities broadcasters
18 foresee will be provided by the advent of digital and
19 compression technologies. And then I will provide you with
20 some of our thoughts on the copyrights issues relating to
21 these developments.

22 MR. DUCEY: Thank you. Good morning to the Working
23 Group. I'm pleased to be here and offer some brief comments

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1 on broadcasting as it faces the digital NII age.

2 I think if you pause to consider how people
3 actually consume information, broadcasting is clearly part of
4 the information infrastructure already. In fact, more of the
5 bits pumped into the average home or car or many other places
6 in society these days are broadcast originated. So much of
7 the bit consumption, even though it's transmitted in an
8 analog format, the information and entertainment content is
9 broadcast originated. Certainly there is a lot of television
10 programming consumed and a lot of radio programming consumed
11 in our society.

12 The impact of digitalization in the broadcasting
13 industry -- I think the parameters of that we're trying to
14 explore and understand, and certainly we see a lot of
15 advantage in that. Both radio broadcasting and television
16 broadcasting are leaping one way or another into the digital
17 age in terms of signal format at the transmission level and
18 well in the production and reception level. More
19 intelligence is being added to the process in consumer
20 receivers.

21 For digitalization and its impact on broadcasting
22 there are a couple of different dimensions I think that are
23 important to broadcasters. One is compression. With the

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1 same spectrum now more intelligence, more information content
2 can be transmitted from once place to another. Another
3 important factor is at the reception end with smarter
4 receivers, digital receivers of various kinds being built and
5 installed by consumers in various locations. There is a lot
6 more opportunity to receive, store and use those signals in
7 various ways.

8 I think for broadcasters basically this is being
9 viewed as an opportunity to expand our traditional range of
10 services, information and entertainment services; enhance
11 what we have already, the traditional services; and expand
12 into new, different kinds of services.

13 The broadcasting industry is different than other
14 parts of the telecommunications infrastructure in that we
15 operate under a policy of universal and free service. We
16 serve as a statutory mandate in the public interest,
17 convenience and necessity. That, again, makes us a little
18 bit distinct from other kinds of communications media. As
19 part of the National Information Infrastructure, radio and TV
20 broadcast facilities serve essential roles in matters of
21 public safety and emergency communications. We also serve a
22 broader social interest in informing and entertaining the
23 public.

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1 By drawing upon different kinds of advances and new
2 technologies, radio and TV broadcasters will provide to the
3 public not only these traditional kinds of radio and TV
4 programming services that we most often associate with
5 broadcasting, but also, again, on the universally-available
6 basis, mobile basis, in addition to the commercially-
7 supported free to the consumer services, other kinds of new
8 advanced services, more kinds of data communications than
9 certainly are being provided over broadcast facilities.
10 Things like electronic mail, video mail, paging services, fax
11 services and various kinds of signalling and telemetry
12 services.

13 A number of these kinds of services are available
14 in a small quantity now using existing broadcast facilities.
15 In fact, I believe even tomorrow there is a committee of
16 National Data Broadcasting Committee working to come up with
17 a standard to provide an additional 1.5 megabytes per second
18 using traditional analog TV broadcast signal. By moving into
19 a digital domain, a normal TV signal in that 6 megaHertz
20 spectrum can be increased to perhaps 20 megabytes per second
21 broadcast over the air. With compression that could yield a
22 lot of different opportunity for moving information through
23 the airways.

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1 From a broadcaster's perspective, we truly hope
2 that the National Information Infrastructure is truly
3 technology-neutral, that broadcasters aren't counted out in
4 the deliberations and proceedings and how the infrastructure
5 is envisioned by your group, as well as other groups.

6 Broadcasters look forward to expanding not only on
7 the traditional platform of services that are now made
8 available to the public, but also entering into new markets,
9 new information and data markets on a competitive basis.

10 Unless there are questions, I'll stop here and let
11 my colleague, Ben Ivins, take over.

12 MR. IVINS: Thank you, Rick.

13 From an intellectual property perspective, I think
14 the broadcasters are interested in this proceeding both as
15 prospective copyright owners and users. Accordingly, we look
16 forward to actively participating in this particular Working
17 Group's activities.

18 The cornerstones of American Broadcasting System
19 have and will continue to be universal access, localism, and
20 providing viewpoint diversity. These principles have served
21 both broadcasting and the American public well through the
22 years, and their preservation will be the basis upon which
23 NAB develops its policy with respect to the NII.

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1 To the extent that the NII serves to advance these
2 principles, NAB will support its development. To the extent
3 the NII appears to threaten these principles, for example by
4 creating a society divided into those who have educational
5 and financial means to gain access to the NII and those who
6 do not, or by creating info-monopolies that can limit access
7 and control viewpoint diversity, NAB will raise objections
8 and concerns.

9 Historically, significant changes in U.S. copyright
10 law have resulted only through a process of negotiation,
11 compromises, building of consensus where possible, and a
12 balancing of interest among affected parties. There also has
13 been a bias against such changes absent a significant showing
14 of need by those proposing them.

15 Because copyright law has been viewed as a seamless
16 web of compromises and interest balancing among many parties,
17 revisions usually have been general and systematic as opposed
18 to piecemeal to avoid upsetting the delicate balance of
19 interests. While the advent of digital technology and the
20 creation of the NII may or may not warrant changes in the
21 copyright laws, NAB sees no need or justification for
22 departing from the above-reference time-tested approach to
23 considering any such revisions.

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1 We commend the infrastructure and the agenda for
2 action for seemingly to adopt this approach of considering
3 all of the aspects of intellectual property and the
4 implications simultaneously.

5 While NAB recognizes that conversion to a digital
6 world and implementation of the NII may require revisions to
7 intellectual property laws, we also see a danger in the
8 attempt by some to use the spectra of these futuristic
9 developments to justify premature, overly-broad and
10 indiscriminate changes to such laws.

11 There is nothing inherent in the digital technology
12 which necessarily demands an immediate radical departure from
13 existing copyright principles. Rather, it is the way in
14 which that technology might be deployed and ultimately used
15 which may give rise to the need for changes in intellectual
16 property law.

17 Thus, for example, a broadcaster's conversion to a
18 digital mode of transmission merely to enhance signal quality
19 over the air or by wire as part of a free ubiquitous service
20 and would not, in and of itself, justify a change in current
21 copyright law regarding performance rights in sound
22 recordings as applied to broadcasters. To the extent that
23 digital technology or deployment of the NII facilitates

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1 unauthorized uses of a broadcaster's signal, such as copying
2 of sound recordings or other portions of the signal for
3 commercial gain, the remedies must be targeted to the
4 unauthorized user.

5 In testimony earlier this morning you heard
6 representatives of the recording and motion picture
7 industries urge this Working Group to support pending
8 legislation that would create a sweeping new exclusive public
9 performance rights and sound recordings transmitting by
10 digital means, including broadcasters that transmit in
11 digital.

12 We would strenuously urge you not to endorse this
13 legislation in its current form for several reasons. First,
14 the creation of a such a sweeping new right could profoundly
15 and adversely affect the interests of broadcasters,
16 composers, publishers and the listening and viewing public
17 and would upset the delicate balance and systems of
18 remuneration among these groups.

19 Second, proponents of the creation of this new
20 right have failed to meet their heavy burden of justifying
21 why it should be applied to all broadcasters transmitting
22 sound recordings in any digital format regardless of whether
23 they in fact pose any potential or actual threat to sound

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1 recording sales.

2 And thirdly, in this regard, they tend to lump
3 together all of the digital transmissions regardless of the
4 threat to sales.

5 I notice my time is up. In my written comments I
6 have given several specific suggestions relating to some of
7 the questions that you asked. I would be happy to expand or
8 elaborate on those either now or in subsequent written
9 comments.

10 CHAIRMAN LEHMAN: Are there any questions that the
11 members of the panel have?

12 (No audible response.)

13 CHAIRMAN LEHMAN: I was interested in your role in
14 educating the public. One of the issues that we've raised is
15 public education about intellectual property. It occurs to
16 me that broadcasters certainly do, from time to time, educate
17 people about the need to exercise precautions in the health
18 and safety area. Maybe we could work with you on public
19 interest programs to educate people about intellectual
20 property rights.

21 MR. IVINS: We would be more than happy. That was
22 in my prepared remarks. We would be happy to consider that,
23 again, as a free, ubiquitous service. I think we would be in

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1 a unique position to provide that kind of education.

2 CHAIRMAN LEHMAN: If there are no other questions,
3 we will adjourn and we will return in a little less than an
4 hour, at 1:10 we'll start up again.

5 (Whereupon, the public hearing in the above-
6 referenced matter recessed, to be reconvened at 1:10 p.m.
7 this same date.)

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A F T E R N O O N S E S S I O N

(1:17 p.m.)

CHAIRMAN LEHMAN: Next I would like to call Mr. John Masten, Executive Vice President of the New York Public Library.

TESTIMONY BY JOHN MASTEN

MR. MASTEN: Good afternoon, Mr. Chairman and members of the Working Group on Intellectual Property. Thank you for the opportunity to testify today.

I am John Masten, Executive Vice President of the New York Public Library and my comments today reflect the perspectives of this unique institution.

The New York Public Library is a private not-for-profit corporation with a public mission. Founded in 1895 it is a network of 86 libraries consisting of four world-renowned research centers and 82 branch circulating libraries in the neighborhoods of Bronx, Manhattan and Staten Island, with 6 million users annually in those branch libraries and over 1 million in our research libraries.

Those research libraries, with holdings of more than 38 million items representing more than 3,000 languages, are the only comprehensive research facilities in the United States other than the Library of Congress that are freely

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1 accessible to the public.

2 Mr. Chairman, the founding of American public
3 libraries arose from the same commitment to enlightenment,
4 the broad dissemination of knowledge, and the encouragement
5 of learning and creativity that lies behind the concepts of
6 copyright and patents. The U.S. Constitution gives the
7 Congress the power, in the words that we all know, to promote
8 the progress of science and the useful arts by securing for
9 limited times to authors and inventors the exclusive right to
10 their respective writings and discoveries. This is meant,
11 not only rewarding the creators, but also fostering and
12 ensuring public access to their work.

13 For example, the system of depository libraries for
14 U.S. patents, of which the New York Public Library is just
15 one, is intended not only to inform the public which devices
16 have the protection of patents, but to increase access to
17 ideas and advances in technology and promote their
18 development and contribution to the economic life of this
19 country.

20 Public libraries and the free flow of information
21 are in fact key contributors to creativity in America, the
22 creation of ideas and products. The New York Public Library
23 has always embraced that role. The doors to our collections

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1 have been open to all regardless of the means or the
2 affiliation of the user. Inside our doors, countless great
3 books and works of art have been researched. And in our
4 reading rooms, inventions from the Polaroid camera,
5 xerography, to even SoHo soda have been developed.

6 In a more anonymous, but equally important way, the
7 small businesses that use our science, industry and business
8 library daily find access to market information or technology
9 updates that immediately benefit their operations and
10 products. A letter from one of our users speaks to this
11 clearly. "Our success is directly related to the science,
12 industry and business library's CD-ROM center. It has given
13 us the ability to find the right companies and their key
14 personnel in an extremely efficient manner. And since our
15 product increases the sales of our clients' products, the New
16 York economy is helped two-fold."

17 The New York Public Library and other libraries
18 have in the past been able to ensure public access simply by
19 keeping their doors open. Access has meant on-site access to
20 each institution's individual collections. In a
21 predominantly print environment, the fair use doctrine and
22 other provisions of the copyright law pertaining specifically
23 to libraries, have supported the public library's mission of

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1 open access to knowledge and information.

2 Now, like all libraries, we are planning for
3 explosive growth in the digital network transmission of
4 information. It is clear to all of us that in this new
5 digital environment, old concepts, including copying,
6 publication and distribution, lose their original meanings
7 and must be reworked. But substantially revising the system
8 of intellectual property rights opens up anew the critical
9 question of balance.

10 On the one hand, a system to manage intellectual
11 property rights must foster creativity by helping to ensure
12 that creativity will be rewarded. On the other hand, if
13 property rights become too rigid, they can restrict public
14 access to the ideas that spark creativity and growth. A
15 system that does not accomplish both ends, to use the words
16 of the Constitution again, cannot promote the progress of
17 science and the useful arts.

18 I would like to make several suggestions about what
19 is desirable in the revision of intellectual property law and
20 practice, suggestions which are grounded in our experience at
21 the New York Public Library.

22 First, the fundamental public good of democratic
23 access to information, a foundation of our economic,

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1 political and cultural vigor, must be at the center of that
2 revision. It would be a terrible irony if after having
3 secured open access to the world of ideas through public
4 libraries across America, this country could find no fair or
5 reasonable way to secure that same access to information on
6 the National Information Infrastructure.

7 At the New York Public Library, for example, much
8 of the promise and public benefit of our expanded science,
9 industry and business library that will open in 1995 will be
10 at risk if the network cannot be used to extend off-site a
11 wide range of our services and databases for small businesses
12 and individuals.

13 Second, focusing directly on the importance of
14 democratic access may be a better guide than relying entirely
15 on adapting the copyright concept of fair use to the
16 networked environment. This is not to say that the doctrine
17 of fair use has not played a critically important role in
18 protecting the process of scholarship and learning through
19 the nation's libraries. But the potential of network
20 software to monitor and to record all uses of a proprietary
21 databases is very likely to lead, as it has in fact site-by-
22 site, to separate individual contractual arrangements between
23 owners and users that fall outside the copyright law entirely

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1 and make in effect an end run around the concept of fair use.

2 Also, fair use, as free use, implicitly, offers
3 little practical guidance in those cases where network access
4 is found to put potential markets for intellectual property
5 at risk.

6 Third, as a single library, the New York Public
7 Library has been able to secure for our users on-site access
8 to a wide variety of proprietary databases. The costs in
9 site license fees are significant for us, but manageable.
10 But the cost of compensating the owners of those databases by
11 opening them to access through a regional or national network
12 would clearly be prohibitive for us as one institution.

13 Unless some viable mechanism can be found, for
14 example, the creation of a subsidy in aid of public access or
15 the building of a consortium of institutions to carry the
16 cost, it is precisely these proprietary databases, often in
17 high demand because they're the most current and well-edited
18 sources, that will not be available via the network except to
19 paying customers.

20 Two classes of users would be created, the
21 information rich and the information poor. And to put it in
22 a more traditional context, it would be like saying that
23 public libraries cannot offer free consultation of reference

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1 books unless they are out of date.

2 Finally, requiring or building into the network a
3 single standard licensing system would be a mistake. It
4 should certainly not be done just because it may be
5 technically feasible.

6 It is important, I think, to leave as much room as
7 possible for individual owners of property rights on the one
8 hand and libraries or other users on the other to negotiate
9 agreements at arm's length that seem mutually beneficial.
10 And it is important to recognize the wide variety of network
11 environments in which these negotiations will occur -- from
12 state-wide or regional networks to academic campuses and to
13 low-cost community networks or free-nets. These environments
14 are highly unlikely to share a single best solution.

15 Moreover, experimentation is valuable. It can
16 surprise us and teach us in which context there may become an
17 interest uniting owners and users.

18 A number of promising models for balancing the
19 interest of owners with a concern for democratic access are
20 in fact developing, including those which give deferential
21 treatment to the hierarchy of uses of material from reviews
22 of contents on to the transmission of full text.

23 It would be a terrible waste of the ingenuity being

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1 brought to bear on these issues across the country to impose
2 a single government approved form of licensing.

3 Mr. Chairman, to return to where we began, adapting
4 intellectual property rights to the network environment will
5 continue to require a thoughtful balance in this new setting
6 of two competing and familiar public policy concerns --
7 rewarding the talent and effort that creates intellectual
8 property and ensuring that it is accessible to all.

9 Giving either concern short shrift will betray the
10 promise of the NII and diminish the richness of the resources
11 it can offer to all Americans.

12 Thank you very much.

13 CHAIRMAN LEHMAN: Thank you very much, Mr. Masten.
14 I want to personally commend you on what I think is an
15 excellent statement of the problem of the NII as it relates
16 to libraries. Obviously you haven't given all the solutions,
17 but I think you've very, very much outlined the nature of the
18 problem and the issues.

19 I think particularly your distinction between fair
20 use and democratic access and the hierarchy of users, I think
21 that is extremely helpful. We would very much like to work
22 with you as we formulate policy.

23 MR. MASTEN: We appreciate that.

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1 CHAIRMAN LEHMAN: Thank you. Are there any
2 questions for Mr. Masten?

3 (No audible response.)

4 CHAIRMAN LEHMAN: Thank you very much.

5 Next I would like to call Gary Griswold, President
6 of InfoLogic Software of Troy, New York.

7 TESTIMONY BY GARY N. GRISWOLD

8 MR. GRISWOLD: Thank you. Please accept my
9 compliments for organizing task forces on the critical issues
10 of intellectual property privacy in government information.
11 I am very grateful to the committee for this opportunity to
12 present testimony.

13 I come to you as a software developer who has been
14 working on a license management technology which I believe is
15 suitable for the National Information Infrastructure. Our
16 report was submitted last week. At this time I can only give
17 the briefest synopsis of that report.

18 Regarding public libraries, I wanted to make
19 special note of the fact that the concepts of metering are
20 not at all incompatible with having a free public library
21 that is a digital electronic library. Having metered
22 transactions can be the basis upon which you in effect check
23 something back into the library. I'm diverting from my notes

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1 here.

2 But you can have an electronic library where
3 something is checked out for, say, a couple of weeks. At the
4 end of two weeks the access to that can be terminated even
5 though it resides on the customer's machine. That's the
6 tricky problem. Then the use of that same piece of
7 information can again return to the library. That would be a
8 way of having a free electronic library where you're using
9 concepts that people might think of metering concepts, but in
10 fact can be used to provide free electronic information.

11 A variety of alternatives have been proposed to
12 deal with copyright protection. Some have proposed using
13 national site licenses. This may work for some scholarly
14 information. But will a method based on planned economics
15 work in the competitive aspects of our market economy?
16 Statistical sampling is used effectively in the music
17 industry. Could it work in text where there are wide
18 variations in product pricing to reflect differences in
19 quality and demand?

20 Advertising works well in television. If no other
21 solution is found here, it may be on the NII as well. The
22 personal computer software industry uses no protection. Many
23 think the same approach will work for information.

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1 However, at least one study indicates that the
2 complexity of software makes piracy advantageous to the
3 seller by increasing the base knowledge about the product.
4 Does electronic information have the same requirement for
5 complex knowledge of the product to pull demand? Much
6 electronic information is currently sold with only
7 centralized control at the point of access and no control
8 after the information is distributed. Will this work when
9 information is redistributed at gigabyte speeds?

10 Finally, a number of methods of decentralized
11 control have been proposed. Most are hardware methods. Will
12 hardware vendors willingly add the cost of such devices to
13 computers they produce?

14 The solution I've been working on is a distributed
15 software method which uses encryption to ensure that
16 information is only accessed through the licensing system,
17 uses the network to communicate access events and uses
18 trusted servers to authenticate access to the information.

19 This method can be used to enforce site licenses by
20 preventing access off-site while at the same time allowing
21 the sharing of information on-site. It can also be used to
22 limit the duration of use analogous to the returning of a
23 book to the library. It can be used to implement an

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1 electronic subscription by providing an unending duration of
2 use of the product on one machine.

3 It can also be used to meter and charge for each
4 use of the information. It can be used as a way to transfer
5 information between people. In the paper world you can go to
6 the doctor's office and pick up a magazine and you haven't
7 violated copyright. You can give a copy of your magazine to
8 someone else and you haven't violated copyright. The same
9 provisions need to work in the electronic world in order for
10 information to be fully usable. And such a means of
11 centralized control to access to the information would
12 provide that flexibility.

13 In my opinion the selection of any one method is
14 premature at this time. Electronic copyright suffers from
15 controversy and strongly-held diverse opinions.
16 Unfortunately, precious little has yet been done to test any
17 of these methods in the marketplace.

18 My recommendations for further study include
19 national site licensing, statistical sampling, and
20 distributive control using networks and encryption.

21 In 1991 the HPCC Act contained language requiring
22 the N-RAN to protect copyright. One year after the signing
23 of the bill, the Director of the Office of Science and

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1 Technology Policy was required to report to Congress on key
2 issues pertaining to the HPCC Act. On the subject of
3 copyright he reported there was no known solution. The Grand
4 Challenges Report published by his office did not
5 specifically mention copyright protection as a research
6 issue, but did give the National Library of Medicine
7 responsibility for research in bibliographic information
8 retrieval and gave the National Science Foundation
9 responsibility for research into computer security.

10 From conversations with administrators of the
11 National Library of Medicine, I've been able to verify that
12 no work in copyright protection has been funded there.
13 Through an electronic search of National Science Foundation
14 grants, I have not been able to identify any research on
15 electronic copyright protection funded by them.

16 In H.R. 1757 Act, the National Information
17 Infrastructure Act, the National Science Foundation -- I
18 should qualify that this is the version I had at the time --
19 the National Science Foundation was assigned funding
20 responsibility for general issues, including copyright
21 protection. The National Science Foundation grant
22 applications are usually reviewed by university faculty. I
23 wonder whether the information industry represented here

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1 believes that their concerns will be well understood by that
2 group.

3 The H.R. 1757 Act also assigns funding
4 responsibility to NASA for work on digital libraries. Yet
5 NASA considers all of the information they produce as public
6 domain and not requiring protection or protection schemes.
7 Considering their policy of only funding research they expect
8 to use, it seems unlikely they will fund work in copyright
9 protection.

10 I respectfully suggest that everyone recognize the
11 uniqueness of this problem and identify a group to be
12 responsible for research funding. I personally believe that
13 the Department of Commerce is uniquely qualified on the basis
14 of these hearings and on the basis of the expertise in the
15 Patent Office and in NIST.

16 Thank you very much.

17 CHAIRMAN LEHMAN: Thank you very much for your oral
18 statement and for a very thoughtful written statement as
19 well, which I think will help us a great deal.

20 Questions?

21 (No audible response.)

22 CHAIRMAN LEHMAN: Thank you very much for coming
23 down.

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1 Next I would like to call Robert Kahn, President of
2 the Corporation for National Research Initiatives. Welcome,
3 Dr. Kahn. I had a meeting the other day with the Librarian
4 of Congress, James Billington, and we were talking about --
5 speaking of libraries -- about the issue of digitizing
6 libraries and computerizing the copyright registration
7 process and so on. I know that you have been very much a
8 part of that effort. Maybe you can help shed some light on
9 all of these problems that we've been discussing with
10 librarians and others. Welcome.

11 TESTIMONY BY ROBERT E. KAHN, Ph.D.

12 DR. KAHN: I'll do my best.

13 Thank you, Mr. Secretary. In conjunction with
14 that, I've submitted for the record a description of the
15 system that we're in the process of developing with support
16 from the Department of Defense, which I believe is applicable
17 to a wide range of purposes that I think your committee would
18 be interested in, including electronic management of
19 copyright in the network environment, the management of
20 confidential or proprietary information that is not subject
21 to copyright, such as patent filings and contracts and
22 licenses, the negotiation of licensing arrangements of
23 various sorts and royalty payments associated therewith.

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1 We are currently applying this technology in the
2 context that you just mentioned, namely to the problem of
3 electronic copyright management in the network environment
4 with the support of the Library of Congress. We plan to do
5 our first demonstration of that in approximately a month. So
6 we should be able to show how that kind of system could be
7 able to be worked.

8 In addition, we're applying that same system in
9 conjunction with a number of the leading universities in this
10 country in conjunction with the great literature that they're
11 developing. I think that's going to be an interesting
12 development as well. We expect several literary
13 organizations possibly to join in.

14 I believe that this is a particularly interesting
15 development, both for this committee and for the NII in
16 general, which we plan to make available to the government
17 since it's supporting this effort in the first place, for its
18 use in conjunction with the dissemination of protected works
19 in the NII.

20 I think it's also going to turn out to be
21 particularly important in conjunction with commercial
22 transactions in the NII which require some form of control of
23 that particular material. I need to say that we're not

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1 trying to address the issues of protection for transmission
2 through encryption or other similar transmission protection
3 means because many other groups have addressed that or are
4 addressing that.

5 But this system does deal particularly with issues
6 of computer applications where access by programs to
7 unencrypted data at some point is essential.

8 I think it's important to note that the computer
9 network environment is absolutely going to involve the use of
10 computer programs of many different types. Many of those
11 will be programs into which may be incorporated other
12 copyright related works. The resulting programs may
13 themselves be works protected by copyright.

14 I believe that the protection of the rights in
15 these programs needs to go beyond the right to simply
16 reproduce or distribute them. It would be especially
17 important, I believe, to consider the right to execute or
18 otherwise perform these programs in the network environment.

19 There are a number of technical areas being studied
20 by different groups that deal with unauthorized interception
21 and authentication of communications or objects in those
22 communications, particularly things like privacy-enhanced
23 mail, abuse of digital signature techniques, public key

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1 encryption. I'm sure you've heard from other people about
2 similar kinds of things. These are generally not useful
3 techniques for controlling further communication of these
4 computer programs, further control of their processing,
5 further digital information associated with the outputs of
6 these programs.

7 I really believe it is too early to mandate
8 controls on this at this point. We need to gain some
9 experience. I think pilot projects will be particularly
10 important, including the one I just mentioned earlier. Based
11 on that, I think we can end up providing some guidance on
12 what kinds of controls may turn out to be useful.

13 Much work is also going on in the standards bodies
14 in this country and around the world on information exchange
15 and software interoperability. We have been very involved in
16 that through the developments in the Internet going back over
17 20 years. I believe it's still unclear to what extent the
18 standard bodies are going to address the needs of copyright
19 users and other IP rights holders, intellectual property
20 rights holders.

21 This is an area I really believe needs considerable
22 study and coordination to determine what kinds of additional
23 standards, if any, are required to deal with the situation.

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1 Finally, let me just identify two issues which I
2 would like to see the committee put on its agenda if you have
3 time to consider. One of these is the question that many
4 people are encountering in the network environment about what
5 to do with information that they come across where it's not
6 easy to identify either what it is or where it came from or
7 who owns it or in fact what they can do with it.

8 Many of these individuals are going to naturally
9 scan it into their machines and otherwise deal with it. I
10 think that we need some mechanism to understand what it is
11 that we can do to facilitate or otherwise deal with this so
12 we don't become a nation of innocent infringers because we
13 simply don't have any way of dealing with this problem. I'm
14 particularly thinking of somebody who might come across an
15 old photograph of some sort with no identifier on it
16 whatsoever and wants to use it in their system because it's
17 interesting and has no way of knowing whether they're
18 infringing and if so, what the nature of the situation might
19 be.

20 The final issue I would like to put on the table
21 for you to consider is sort of the equivalent of the need for
22 copyright law in the first place in dealing with knowledge.
23 Now, copyright, as you undoubtedly have considered, was

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1 developed to try to make it possible for authors to put their
2 works in the hands of the public without losing their rights
3 to the essential elements of those works.

4 We've always had the distinction between knowledge
5 and sort of the expression of knowledge. And it's getting
6 clouded in the area of knowledge-based systems and the
7 development of knowledge structures more generally that can
8 be used by artificial intelligence programs.

9 Many of these systems have knowledge that is sort
10 of represented in only one way or the number of opportunities
11 for expression is very limited. Anything that we can do to
12 encourage people that develop knowledge in codified form to
13 put that in the hands of the public so they can see it
14 without losing their rights to that development of knowledge,
15 I think would serve this country and everyone well.

16 Maybe I should just stop there and take any
17 questions from the panel. Thank you very much.

18 CHAIRMAN LEHMAN: Thank you. With regard to that
19 last point are you really talking about the database issue,
20 really things that would not be classified as works of
21 authorship under the existing copyright law, but that would
22 be knowledge?

23 DR. KAHN: Yes. I'm not sure I would call them

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1 databases. But people who --

2 CHAIRMAN LEHMAN: Some of the things that may have
3 been associated with the Fiest decision, for example?

4 DR. KAHN: No, I was thinking more of someone who
5 has knowledge about how to treat a certain disease and its
6 codified rules. And there aren't very many ways to say if
7 the temperature is above 97.3 degrees and you have a history
8 of such-and-such, then use the following drug treatment or
9 whatever -- the codified rules of behavior, codified rules of
10 practice that might constitute the knowledge of a profession
11 that people today have codified in proprietary systems and
12 they're not willing to make that known to anyone else.

13 CHAIRMAN LEHMAN: In a sense, that's an in between
14 world, between copyright protection, the expression of the
15 idea and patents. You're talking about information which
16 really doesn't meet the test of patentability, but also which
17 is more than just the expression of an idea, but which may be
18 an idea and there is a need for some kind of middle ground.

19 DR. KAHN: That's accurate. I don't think that I'm
20 prepared -- I don't think I'm expert enough -- to know what
21 the right changes to the law are to deal with that or how it
22 should fit in. I just know that it's an issue that we need
23 to deal with and that we ought encourage people who create

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1 that kind of knowledge in a form that is more the idea than
2 the expression of the idea to be willing to put it in the
3 public's hands so they can see and understand what it is
4 without losing their essential rights in that material which
5 they otherwise would not make available.

6 CHAIRMAN LEHMAN: In the system that you're
7 creating or working on the test bed with the Library of
8 Congress and the Copyright Office, I think it was mentioned
9 here earlier by one of the witnesses this morning that isn't
10 it a shame, in effect, that the Library of Congress in I
11 think a recent American history project or whatever really
12 wasn't able to be all that it could be because you couldn't
13 get the rights clearances and so on where the Library ran
14 into this problem.

15 The Vice President's vision was referred to about
16 wouldn't it be great if the whole collection of the Library
17 of Congress could be online. I think most people's initial
18 reaction would be, that would be just terrific, if the
19 collection of the Library of Congress could be online.

20 Obviously, once you get beyond that, once you just
21 delve into that a little bit, you realize that the Library of
22 Congress is simply the repository for, at the present time
23 for the most part, of works in print and paper for which the

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1 rights, the propriety rights belong to others. But, of
2 course, the Library could be in a position where it could, if
3 it obtained the right permissions, could provide that
4 information.

5 My question to you, is that, from your point of
6 view since you're working on this and you're working with
7 this project with copyright registration, something that is,
8 in terms of the NII, something that we should be trying to
9 facilitate or not? Is that a model that would be an
10 appropriate model for the dissemination of information in the
11 United States?

12 DR. KAHN: I guess my take on that is as follows.

13 The technology is going to be in place where this
14 information, even if it's deposited in the Library for
15 copyright purposes, doesn't need to actually be deposited at
16 the Library. It can be put in repositories around the
17 country. They can be qualified or not, depending on how much
18 protection you need for that material. And those
19 repositories can be part of a national library system
20 architecture that falls on top of various nets that makes it
21 possible for citizens anywhere to get access to that
22 information.

23 What you said was important to get, if the rights

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1 and permissions were there, and assuming that the rights and
2 permissions are there, to be able to use it, either because
3 they're developed by some sort of agreement that is a blanket
4 agreement or because you negotiate for them in a
5 transactional mode. If those rights are there, they can be
6 provided by the system and it doesn't require any one
7 institution to actually do that. It can be the basis of a
8 business enterprise that can provide them.

9 The role of the Library of Congress, it seems to
10 me, as a national archive of some sort has real importance in
11 this country. One way that can be manifested is by making it
12 possible for people who go there to be able to access any of
13 the materials on the appropriate terms and conditions at the
14 Library. They had something called the Atrium Group that has
15 been thinking about making such a capability available in the
16 atrium of the Library. And there may be other ways that they
17 can help to facilitate this process.

18 I think that should be the subject of a discussion
19 with the various rights owners to see how it comes out.

20 I know there has been a lot of concern in the past
21 about just how that would proceed. They've had a pilot
22 project on the books going back to the mid-1970s on optical
23 disks for dissemination. That has been the subject of a lot

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1 of controversy and concern among the rights owners themselves
2 who had some concerns about the Library getting into that
3 particular area.

4 Frankly, I would like to see a harmonious
5 resolution to this whole area where the Library can continue
6 to play its more traditional roles, where some of this
7 information can get out through broader systems. I frankly
8 think there is a longer term role for the Library of Congress
9 in dealing with some of the aspects of the NII that most
10 people don't yet even recognize as being important, like the
11 development of the languages and the meanings and the
12 anthologies that are going to be necessary for people to
13 relate to the NII on common terms.

14 We know that English is an important capability
15 within our culture, but the ability to have commonly
16 understood linguistic constructs within the NII for
17 developing applications, for naming things, for terms and
18 conditions, for conventions, is going to be extremely
19 important. I think that is a role that the Library of
20 Congress may be particularly suited to help develop because
21 it's very humanitarian in nature. And that is a task that
22 nobody is undertaking at the present time.

23 So I think we're going to see new roles and

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1 responsibilities develop. I would hope we could get a
2 harmonious accord between the Library and the rights owners
3 so that they could play their role and we could still make
4 use of technology most effectively to get this capability out
5 to the country.

6 CHAIRMAN LEHMAN: Mr. Linn.

7 DR. KAHN: Your system here keeps blinking red and
8 blue.

9 CHAIRMAN LEHMAN: This is our time, not yours. You
10 were very courteous.

11 MR. LINN: Bob, you indicated that you had
12 reservations about standards related to the NII and yet your
13 professional experience takes you back to the early days.

14 A week ago I was at a meeting of the high
15 performance competing communications information and
16 technology. It was an open meeting with competing industry,
17 CSVP, plus the high performance computer representative.
18 Universally it was expressed that there was need for
19 standards for the NII to be effective.

20 Now, did I mishear you or am I misjudging the
21 situation? Where do you come down on it?

22 DR. KAHN: I want to be categorical about this.
23 The NII cannot work without standards. I mean, the whole

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1 essence of the NII architecture is going to hinge upon well-
2 defined interfaces, well-defined objects that flow through it
3 that are understood by not only individuals, but by the
4 machines that process them.

5 The point that I was making is that it's too early,
6 I believe, to try and standardize on those things today. We
7 need some experience in this wide realm of possibilities. We
8 need to find ways that people can introduce new servers into
9 the NII, have them express themselves, have other servers
10 learn about them, build new capabilities that are composed
11 from other capabilities, perhaps even automatically. Nobody
12 yet knows what the nature and form of those interfaces should
13 be.

14 I'm afraid that if we try and standardize too
15 broadly now, that we will inhibit our ability to develop the
16 NII in the future. There are lots of standards that are out
17 there that people are now using. TCPIP is one protocol
18 standard that is now part of the Internet culture. The
19 telecommunications industry is moving rapidly toward ATM and
20 SONET as another set of standards in the telecommunications
21 arena.

22 I can list you hundreds of standards that have been
23 well-developed and well-considered. They are simply pieces

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1 of the puzzle. And there is going to be a larger set of
2 interfacing concerns and standards concerns that it's just
3 too early to either identify and certainly to mandate at this
4 point. I think they ought to come out of some real
5 experience dealing with real problems with real applications.
6 Then we ought to systematically go about trying to figure out
7 what those standards are. But I think you just can't sit
8 down and standardize on it today. It would be very
9 premature.

10 CHAIRMAN LEHMAN: What I'm hearing, not only from
11 you, but from other witnesses is that there seems to be a
12 strong prejudice against government or government agencies
13 sitting down right now, a committee, and setting up standards
14 and saying, these are the standards. There is a recognition
15 that there needs to be standards. There needs to be
16 standards and we'll have to evolve toward that. But that has
17 to, somehow or other the interested element in society and
18 the business culture, and so on, need to evolve toward that.

19 The issue is really, is there a role for the
20 government to play, for us to play, in facilitating that
21 process so that it happens in an orderly way and it happens
22 as expeditiously as it can.

23 DR. KAHN: I think the government could play a very

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1 important role by making it known where they would like to
2 see standards developed, if that is appropriate; where they
3 thing there are weaknesses that need to be addressed; where
4 there are issues they would like the industry to deal with in
5 some concerted or collaborative way.

6 I want to point out that there are various
7 different ways that you can go about developing standards and
8 I would just like to point out that the development process
9 is a grassroots process. That is, no standard becomes a
10 standard except by ratification after the fact. The Internet
11 is like a big petri dish in which anybody who has an idea can
12 try it out, much like the economy is the place where people
13 can try their new ideas out and business ventures. You can
14 try any idea out on the Internet that you like. You can
15 build communities of interest. People start to use what
16 comes out. They become de facto standards in some cases.

17 And, generally speaking, something doesn't even
18 become a standards track entry until it's in very widespread
19 use and a whole community decides that this is something
20 other people ought to know about. By that time, it gets into
21 more debate, it's vetted across virtually everybody who cares
22 about that topic, not only in the U.S. but now around the
23 world. And by the time something is actually proclaimed a

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1 standard, it's probably been in use for 10 years by
2 thousands, if not millions, of people.

3 That's the very inverse procedure of one where a
4 group sits down, defines a standards, writes it in a
5 document, and lets the world know about it so they can
6 implement to it. Because they may have picked the wrong
7 thing. One really vets it out through actual experience and
8 the other one tries to figure it out in advance.

9 I think those are two divergent approaches. There
10 is actually benefit to both, I want to point out. In the
11 dynamic world of research where you're trying to enable as
12 many ideas as you can and really let evolution take place
13 rapidly and flexibly, you want to place as few constraints as
14 possible on the evolution of this kind of capability.

15 But when you're in a heavily commercial activity
16 where revenue streams and business' fates and commercial
17 interests are at stake, most of those businesses are not
18 willing to leave the future of their standards environment up
19 to this kind of grassroots evolutionary process. They want
20 more control, which is why they do it top-down.

21 It seems to me there is room for harmonization of
22 those two processes where the most advanced stuff goes to
23 this more bottoms-up fashion and where the more structured

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1 and used and commercial activity is in fact taken over
2 through a more standard kind of process.

3 I think you, therefore, need to let this grassroots
4 process happen for a while before you know what the other
5 processes are going to find worthwhile to maintain.

6 CHAIRMAN LEHMAN: Thank you. We could probably
7 spend all afternoon with just you as our witness, but we'll
8 have other opportunities for that. Thank you very much.

9 DR. KAHN: I'll be delighted to come back.

10 CHAIRMAN LEHMAN: Thank you.

11 Next, I would like to call on Dr. Brad Cox from the
12 Center for Electronic Markets in Centreville, Virginia.

13 TESTIMONY BY BRAD J. COX, Ph.D.

14 DR. COX: Thank you very much for having me today.
15 And thank you for organizing this meeting on a very important
16 topic.

17 I would like to begin by reacting to a viewpoint
18 that I've heard expressed at least once, maybe a few times,
19 in that technology has destroyed something that was once very
20 simple -- when information was primarily on paper.

21 I would like to flip that coin and look at it from
22 the other side in that just as technology has created the
23 opportunity for light speed transportation of electronic

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1 goods, it has also created the possibility of solving the
2 very ownership problem that that implies. We now have light
3 speed communications devices, fiber optics. We now have
4 computers at the ends of those wires. And we also have
5 financial institutions which have been around for many years
6 in connection with sales of tangible goods.

7 By integrating those three components, computers,
8 communication links and financial institutions, we could have
9 a technical solution to a problem that is now primarily dealt
10 with by laws and by lawyers.

11 My entry into this topic came originally from the
12 software development industry where I was involved in object-
13 oriented programming language development, built a company,
14 one of whose products was programming language that Steve
15 Jobs uses on his computers. But more fundamentally than
16 that, libraries of reusable software components that we call
17 objects or classes.

18 The fundamental problem that we ran into as a
19 business was the ownership issue of goods that can be very
20 small granularity pieces of software in which the transaction
21 cost of writing contracts or dealing with these in the
22 traditional ways you might deal with ownership of a book just
23 don't work. They're too small. They copy too easily.

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1 So instead of focusing in the way most of the
2 speakers have done today on one vertical market or another,
3 the publishing industry or the film industry or the music
4 broadcasting industry, I would like to point out that
5 tangible goods such as that computer on the floor in front of
6 us have a granularity to them and that one company built the
7 goods at the top of the pyramid, the computer itself, and
8 they probably bought the boards from another company and the
9 chips from the third and the silicon to make the chips from
10 some third company.

11 There is a way of looking at this problem
12 vertically, and the same way of looking needs to apply to
13 electronic goods like, let's say an electronic book. Right
14 now most of us may be thinking about books in terms of raw
15 ASCII text. But instead, an electronic book has something
16 that an author wrote, but it might also have a reader program
17 in it that some programmer wrote. And that reader program
18 might have scroll bars in it which might be one of my
19 company's reusable software components.

20 So the real issue that we're dealing with here is
21 supporting ownership and revenue collection for goods of many
22 different granularities simultaneously. So that when
23 somebody buys the book, the guy who built the reader program

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1 for the book also sees revenue.

2 Last summer I pulled together a small coalition of
3 companies and government. The National Institute of
4 Standards was one member of that coalition. My university
5 was another. A large semi-conductor company was a third.
6 And a software components company was a fourth. We applied
7 to ARPA for funding to build and deploy a revenue collection
8 system of that nature that would support revenue collection
9 for goods in many different granularities.

10 That is the role in which I come here today. It is
11 to make you aware that the technology takest away, but it
12 also giveth back. There is a possibility of technical
13 solutions to a problem that we might otherwise look to a
14 legal solution only.

15 With that, I'll stop and leave some time for
16 questions.

17 CHAIRMAN LEHMAN: As I understand, the policy point
18 here is that really, from your point of view, there need to
19 be no changes in the copyright law to facilitate the rapid
20 development of the NII; that the NII itself offers the
21 possibility, in conjunction with these technological
22 solutions, to develop adequate licensing mechanisms that will
23 work under the existing copyright law.

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1 DR. COX: Absolutely. As I read the copyright law,
2 it's half about copies and it's half about uses. But it
3 gives you the way to own and buy and sell copies of things.
4 It also has performance rights in there where you can own and
5 buy and sell uses. For example, ASCAP and BMI are based on
6 selling use rights to music.

7 Purely on technical grounds I happen to be of the
8 opinion that the easiest way to protect ownership of
9 electronic goods is through those usage based laws, not the
10 copy based part of the copyright law.

11 I think we can make the copies free and charge for
12 the uses.

13 CHAIRMAN LEHMAN: Does anybody else on the panel
14 have any questions?

15 (No audible response.)

16 CHAIRMAN LEHMAN: If not, thank you very much for
17 coming and spending time with us today.

18 Next I would like to call Ronald Laurie of Weil,
19 Gotshal & Manges in Menlo Park, California.

20 TESTIMONY BY RONALD S. LAURIE, ESQ.

21 MR. LAURIE: Thank you, Secretary Lehman, members
22 of the Working Group. I appreciate the opportunity to
23 present the views of a Silicon Valley practitioner, though I

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1 would not presume to present the Silicon Valley view because,
2 as elsewhere, there is neither consensus nor unanimity in
3 Silicon Valley as to some of the basic policy issues that are
4 raised by the NII.

5 I've worked in Silicon Valley for 33 years,
6 initially as a software engineer and later as an intellectual
7 property lawyer specializing in computer law. I currently
8 teach a course at Stanford Law School titled Intellectual
9 Property Protection for Information Technologies.

10 I feel that my role here today is somewhat of an
11 agent provocateur because I would like to respectfully
12 suggest that the scope of the inquiry be broadened beyond
13 that outlined in the request for comments. The request for
14 comments is very articulate in setting up the policy balance
15 between, on the one hand, providing effective intellectual
16 property protection primarily via copyright for the
17 "electronic information and entertainment products" flowing
18 through the NII system and, on the other hand, ensuring
19 maximum public access to the system and interoperability of
20 the system components achieved at least in part through the
21 use of standards and potentially through regulatory controls.

22 I believe that this critically important process of
23 balancing intellectual property incentives against

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1 accessibility and connectivity should extend not only to the
2 content flowing through the NII system, but also to the
3 delivery mechanisms utilized in the system.

4 One cannot discuss the subject of delivery
5 mechanisms without considering the effects of patents. Let
6 me illustrate my point with the following example.

7 Two interrelated concerns of content owners are
8 security and compensation. Delivery technology is now being
9 developed to address both of these concerns. It has been
10 mentioned in prior testimony under the label of information
11 metering.

12 In an information metering system, the content is
13 initially delivered to the end user in encrypted form. It is
14 decrypted at the user's terminal by secure and, I might add,
15 potentially proprietary hardware and software on an as-needed
16 basis, and it is metered as it is consumed.

17 Compensation to individual content providers is
18 achieved by secure software which periodically transmits
19 usage data to a central accounting center via a modem.
20 Finally, the accounting center aggregates the usage data for
21 all users subscribing to that center and bills the users on a
22 monthly basis, remitting the proper amounts to the various
23 information providers. The system operates as an information

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1 utility in much the same way as conventional electricity, gas
2 and water distribution systems.

3 I would like to say two things about this
4 technology. One, it is close to deployment. And, two, it is
5 already patented.

6 To varying degrees, all of the following are
7 potentially patentable: user interfaces; navigation systems;
8 search engines; data formats; transmission protocols; APIs,
9 application programming interfaces. The patent statute, as
10 you well know, does not distinguish between hardware and
11 software. It protects novel and non-obvious systems and
12 processes.

13 Well, what's the effect of this? Potentially every
14 link or step in the NII, from the user's display screen to
15 the heart of the fiber or satellite backbone, is subject to
16 patent protection.

17 Will there be free or low-cost alternatives to the
18 proprietary on-ramps or off-ramps? Certainly, there will.
19 The notion was expressed to me that the government already
20 has enough technology now to offer a virtually complete NII
21 without proprietary protection. So it is possible to provide
22 an alternative system.

23 But there is a high probability that the optimum

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1 access routes and methods will be proprietary. The danger,
2 therefore, is a two-tiered, separate, but equal system -- a
3 separate but equal universal access system if that isn't an
4 oxymoron.

5 I could use the example, to extend the highway
6 analogy to a system involving six-lane high-speed freeways
7 with toll gates at every on ramp, and paralleling that
8 system, a single-lane dirt road that are free. Is there
9 access to everyone? Arguably, yes. Is it universal?
10 Arguably, yes. Is it equal? I don't think so.

11 Let me give you an example from my own experience.
12 I got an Internet account just as soon as the DOT.COM access
13 service became available. But I barely used it for a year.
14 And the reason I didn't use it was because in order to talk
15 to Internet you had to be facile in UNIX. And even though my
16 background is in programming, I didn't want to go through the
17 trouble of dealing with UNIX, and especially the UNIX Visual
18 Interpreter to do text editing in order to deal with the
19 Internet.

20 The instant a user friendly interface became
21 available, I went out and I bought it. And I subscribe to a
22 Macintosh interface gateway to the Internet. And it's a
23 pleasure to use it.

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1 The problem is that we may end up with an Internet
2 system in which the technologically literate and the
3 economically privileged have better access than the average
4 American citizen.

5 The implementation of this technology thus presents
6 significant policy questions involving the use of
7 intellectual property protection, including both patents and
8 copyrights, to promote the development of innovative
9 information delivery systems on the one hand without unduly
10 prejudicing the interests of information consumers and
11 developers of competitive systems on the other. I think that
12 the patent dimension to the policy issues should be an
13 essential element of the public debate.

14 Thank you.

15 CHAIRMAN LEHMAN: Thank you very much, Mr. Laurie.
16 Hopefully, you'll be able to enlighten us further on the
17 patent dimension of this in January because this Working
18 Group is not going to California, but the Patent and
19 Trademark Office will be having hearings in California. I
20 think it's going to be on the 26th -- three day in San Jose
21 and then there will be two more days following here in
22 Washington --

23 DR. LAURIE: I'll look forward to that.

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1 CHAIRMAN LEHMAN: -- on the patent issues related
2 to the computer software industry generally. I think there
3 are some very serious questions about the way the patent
4 system is working, and some of them do have a relationship to
5 the NII, and our learning there may indeed help us in
6 developing this NII Working Group report as well.

7 I'm a little bit surprised that we haven't -- maybe
8 we will yet this afternoon -- heard more about the patent
9 issue from some of the witnesses here.

10 DR. LAURIE: I suspect you will hear more.

11 CHAIRMAN LEHMAN: Thanks for bringing that to our
12 attention.

13 Is there anybody else that has a question of Mr.
14 Laurie?

15 (No audible response.)

16 CHAIRMAN LEHMAN: Thanks for coming all this way to
17 talk to us.

18 Next I would like to call on Professor Henry
19 Perritt of Villanova University Law School in Villanova,
20 Pennsylvania.

21 TESTIMONY BY HENRY H. PERRITT, JR.

22 MR. PERRITT: Mr. Chairman, members of the Working
23 Group, thank you for this opportunity. It's been a very

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1 interesting day. I would like to join the suggestion that
2 Bob Oakley made this morning that you make the proceedings
3 and the statements available on the Internet so that the
4 existing National Information Infrastructure can make more
5 people aware of your good work.

6 CHAIRMAN LEHMAN: Can I make a point there? One of
7 the things we probably should have done was asked for
8 people's statements in digitized form, which we didn't. So
9 anybody that wants -- maybe we can work on that. If anybody
10 that submitted a statement -- the court reporter's
11 transcript, of course, will be able to be made available to
12 us in that form, but maybe any of you who submitted
13 statements who want to submit it in that format, we can
14 experiment with being a part of the NII ourselves here.

15 MR. PERRITT: That seems like a good idea, Mr.
16 Chairman.

17 CHAIRMAN LEHMAN: What kind do we want?

18 MS. BERNSTEIN: We probably want PC format in ASCII
19 -- either plain ASCII or one of the standard -- WordPerfect
20 or Word, or some standard word processing packet. We could
21 probably deal with any of those.

22 MR. PERRITT: Mr. Chairman, my name is Henry
23 Perritt. I'm a law professor at Villanova. I appear in my

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1 individual capacity this afternoon.

2 What I would like to do is to emphasize three main
3 points from my written statement that I would ask be
4 incorporated into the record.

5 First, the technologies that now exist and are
6 reasonably foreseeable permit the National Information
7 Infrastructure to be an expansive, electronic marketplace.
8 Not only a marketplace for transactions between publishers
9 and consumers, but also a marketplace for transactions
10 between authors and publishers and between different kinds of
11 publishers.

12 Second, the combination of three protections for
13 intellectual property -- intellectual property law,
14 encryption, and electronic contracting can adequately protect
15 intellectual property in this National Information
16 Infrastructure.

17 Third, however, high levels of encryption in
18 mandated standards can prevent realization of the potential
19 for the National Information Infrastructure.

20 Let me elaborate briefly on each of those three
21 points.

22 The problem we face in realizing this kind of
23 expansive electronic marketplace, like the one that Dr. Cox

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1 talked about in which we see a disaggregation of different
2 granules in the publishing process, is that the market is
3 uncertain. People aren't sure what the right product
4 features are, what the right granules are and what the right
5 combinations are among the granules. There hasn't been
6 enough testing in the marketplace of different systems for
7 producing products that are attractive and meet the needs for
8 consumers. And to be sure, there is a fear of piracy of
9 intellectual property. But that's not the only problem.

10 There are three fixes for the fear of intellectual
11 property piracy. There is intellectual property law, which I
12 haven't heard anyone suggest should disappear from the
13 horizon. So that will remain as a feature, at least in the
14 background. And that includes, as Mr. Laurie pointed out,
15 not only copyright and patent, but also trade secret and
16 trademark protection.

17 In addition to that, as Dr. Cox emphasized earlier
18 this afternoon and a number of other people have emphasized
19 and explained, the technologies themselves permit new kinds
20 of protection that don't rely on legal institutions. I think
21 it's worth distinguishing between two kinds of technological
22 protection. One is encryption, which by itself can prevent
23 the piracy technically. And the other is electronic

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1 contracting built on the basic concept that is in wide use in
2 the electronic data interchange in which people actually do
3 marketplace transactions at much lower transaction costs by
4 means of the electronic technology.

5 By reducing transaction costs, we make it feasible
6 for contract law to play a much more prominent role in this
7 disaggregated market that is the National Information
8 Infrastructure.

9 And probably the solutions to the intellectual
10 property protection problem always will involve a rich
11 variety of permutations of these three kinds of protections,
12 intellectual property law, electronic contracting and
13 encryption. But before any of the permutations can play a
14 very significant role in enhancing the development of this
15 marketplace, there are some needs.

16 One need is for data structures and other
17 standards. Because even if one wishes to use non-encrypted
18 electronic contracting methods, there have to be some data
19 structures through which one can express the offer and the
20 acceptance and if one wishes to license a copyright, for
21 example, through which one can express the particular rights
22 and permissions that are being granted.

23 Secondly, there is a need for institutions that do

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1 not now exist or that don't exist in the right form. There
2 has been reference to cooperatives for licensing intellectual
3 property rights. Those institutions don't yet exist. The
4 electronic counterpart of ASCAP and BMI don't yet exist in
5 this infrastructure.

6 In addition to that, people who engage in
7 electronic data interchange in the commercial document
8 context sometimes find institutional arrangements in the form
9 of trusted third party intermediaries to serve as kind of
10 escrow agents for transactions that represent the electronic
11 contracts. They find those helpful.

12 Public key encryption requires public key
13 authorities. So there is a need for an institutional part of
14 this infrastructure so that the protections can become a
15 reality.

16 And the final, and I think the most acute need, is
17 for much more testing of these various concepts in actual
18 commercial marketplaces. Without that kind of testing, we
19 can't have the foggiest idea of what is going to work and
20 what is going to resonate with consumers and entrepreneurs
21 and what would be a fit approach for endorsement by the
22 Federal Government, if indeed anything is appropriate to be
23 endorsed.

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1 Now, there are some risks as we try to meet these
2 needs. One risk is that especially if we go too quickly
3 toward high levels of encryption as the way of protecting
4 intellectual property, what we may end up with is not a
5 National Information Infrastructure, but a collection of
6 proprietary cul-de-sacs in which technology represents not a
7 reduction in transaction costs, but instead represents new
8 barriers to entry for producers and new barriers to access by
9 consumers who already are somewhat fearful of making use of
10 the technology represented by the Internet.

11 Moreover, as an other risk, we may, if we move too
12 quickly and in too heavy-handed a fashion, we may freeze
13 technologies and impede technological development which has
14 been so rapid and so productive of good approaches in this
15 area.

16 There also is the possibility that we may extend
17 the technologies so that the balance that has been struck
18 historically in intellectual property between the appropriate
19 needs and entitlements of the general public to have access
20 to information and the appropriate needs of producers to have
21 protection for their investment, that that balance will be
22 altered inappropriately before we realize it.

23 So what should the Federal Government do? I think

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1 it ought to do three things. First of all, it should endorse
2 unambiguously a commitment to a diversity of sources,
3 channels, product concepts and means of protecting
4 intellectual property. Second, it should develop and
5 publicize the development of concepts in this area, as this
6 hearing itself does. And, further, it should demonstrate
7 systems and the commercial feasibility of some of the systems
8 that you've heard about today. Finally, it should make sure
9 that it uses the existing National Information
10 Infrastructure, as we started at the beginning of these
11 remarks, Mr. Chairman, to make sure that the American people
12 generally know of the results of the assessment and the
13 conceptualization.

14 Thank you.

15 CHAIRMAN LEHMAN: Thank you very much, Mr. Perritt.
16 Are there any questions?

17 MR. LINN: I thought I heard you say the Federal
18 Government should demonstrate the commercial feasibility of
19 some of these concepts. Is it commercial feasibility or the
20 technical feasibility?

21 MR. PERRITT: I think it is technical feasibility.
22 But as many people before me have said today, the real issue
23 is whether something is going to be feasible in a real world

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1 marketplace. So while I recognize the inappropriateness of
2 the Federal Government being all the way into a commercial
3 activity, I think there needs to be recognition that it's
4 commercial feasibility in the end that counts.

5 We are talking about markets and entrepreneurial
6 activity and the protection of the entrepreneurial effort.

7 MR. ABBOTT: One major Silicon Valley firm
8 recommended to us that interfaces in general, that it did not
9 protect interfaces. It's obviously proprietary software and
10 other developments, they're not interface themselves. o you
11 have any viewpoint on that?

12 MR. PERRITT: As to whether intellectual property
13 law protects interface?

14 MR. ABBOTT: Well, no. As to whether it should
15 protect interfaces or should it be adapted? Have you thought
16 along those lines?

17 MR. PERRITT: I've thought a little bit about that.
18 And it seems to me that there is a persuasive argument to be
19 made that fair use, or some other similar privilege, should
20 extend to interfaces so that there can be interoperability
21 among different kinds of systems, even if the systems
22 themselves are proprietary.

23 Of course, the case law has begun to deal with this

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1 a little bit in the video game context, and the authority, as
2 I know it, is mixed on the protectibility of interfaces.

3 CHAIRMAN LEHMAN: If I could inject. I think this
4 is what you're talking about. It's a situation basically
5 where a company has chosen to make available its interfaces,
6 in a sense to put them in the public domain and sort of
7 license them, in a sense.

8 Clearly, there is a range of strategies that
9 different companies have developed. Some are much more
10 liberal in terms of putting aspects of their software into
11 the public domain so that others can develop compatible
12 projects and other products and others are more proprietary
13 oriented.

14 The question for us is, I suppose, whether or not
15 there should be any government intrusion into that process
16 which is already taking place in the business world.

17 MR. ABBOTT: That's why we should let the case law
18 develop on it's own path.

19 MR. PERRITT: I think it would be appropriate to do
20 some analysis of the case law that exists and what the
21 alternatives are. I would not want to jump here to the
22 conclusion that interfaces in general should be protected or
23 not because, as the Chairman has said, the practice varies

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1 enormously and some people virtually put the interface in the
2 public domain. And others, as some video game manufacturers,
3 have kept it very closely -- the interface between the
4 cartridge and the machine, very closely guarded.

5 CHAIRMAN LEHMAN: Did you have something?

6 MS. BERNSTEIN: You said something about the
7 creation of new institutions, that perhaps we need certain
8 institutions which don't exist yet. And you mentioned ASCAP
9 and BMI. I was wondering if you think that we need the
10 electronic counterpart of that same kind of thing should we
11 extend what we have now with ASCAP and BMI and those sorts of
12 things into the electronic environment? Or is there some
13 other way of satisfying those needs that might be done some
14 other way? Is there another model?

15 MR. PERRITT: What I think we need to do is to
16 recognize that third party institutions will be necessary for
17 some of these protection systems. I don't mean to suggest
18 that it's timely for the government to go out and set up an
19 electronic ASCAP.

20 But I have heard some discussions of public key
21 encryption -- I don't pretend to be an expert on that -- but
22 I've heard some presentations on that that seem to suggest
23 that the key encryption authority is a point of vulnerability

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1 and that unless one can trust the key authority, one really
2 can't trust the encryption system.

3 Now, if that is so, and if the government were to
4 endorse public key encryption as an approach for protecting
5 intellectual property, I think not far behind that government
6 endorsement would be a requirement that the government
7 certify the trustworthiness of the key authorities. I'm not
8 saying that's a bad thing. I'm just saying that that would
9 be a cost, a social cost, and a type of government commitment
10 that we need to think through before we rush to embrace a
11 particular technological approach that may bring behind it
12 some institutional and legal baggage that we don't fully
13 anticipate.

14 CHAIRMAN LEHMAN: Anything else?

15 (No audible response.)

16 CHAIRMAN LEHMAN: I thank you very much for joining
17 us this afternoon, John.

18 MR. PERRITT: Thank you, Mr. Chairman.

19 CHAIRMAN LEHMAN: Thank you for coming.

20 Next we will hear from Ron Palenski who is
21 Senior Vice President and General Counsel with the
22 Information Technology Association of America, right here in
23 Arlington, Virginia.

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1 TESTIMONY BY RONALD J. PALENSKI, ESQ.

2 MR. PALENSKI: Good afternoon, Mr. Chairman and
3 members of the NII Intellectual Property Working Group.

4 Like many others who have come before me, I would
5 like to thank you for holding what is obviously going to be
6 the first of a number of inquiries into the subject of
7 intellectual property protection and an enhanced National
8 Information Infrastructure.

9 By way of introduction of ITAA, with more than
10 2,400 direct and affiliated members, ITAA represents this
11 nation's information technology industry, whose companies
12 build information solutions for business and government
13 customers using computers, software and communications. As
14 such, ITAA has a significant stake in this proceeding as well
15 as in other efforts with other groups to build an enhanced
16 National Information Infrastructure.

17 I would like to point out, as a number of people
18 have already, that we already have a National Information
19 Infrastructure. Actually, we have many national information
20 infrastructures. We have a telephone system. We have cable
21 TV systems. We have commercial television. So we already
22 have a National Information Infrastructure or a series of
23 National Information Infrastructures. What we are looking at

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1 here is an enhanced network of networks.

2 The U.S. has already entered into the information
3 age. And spurred by this Administration's NII initiative, we
4 are poised on the cusp of a new era in which, to paraphrase
5 Vice President Gore, digital telecommunications networks will
6 enable people throughout the U.S. and, indeed, the world to
7 share almost unlimited amounts of information, including
8 text, data, images, full motion video and sound.

9 We in the United States are fortunate in that our
10 nation is the world's leading producer of these intellectual
11 properties. Mr. Attaway spoke to you earlier about the
12 economic contributions of the core copyright industries and I
13 won't repeat what he said, although I have a copy of the IIPA
14 report and I'm happy to make it available to the task force,
15 if you wish.

16 Protection of the high value, but easily
17 misappropriated, intellectual assets which our industry and
18 others create is critical, particularly if the creators of
19 software, books, sound recordings, motion pictures and new
20 forms of works that we can hardly imagine today are to be
21 made available by way of a National Information
22 Infrastructure.

23 Given the very early state of development of an

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1 enhanced NII, precise predictions about the intellectual
2 property issues that are likely to emerge are difficult.
3 However, ITAA's computer software and services companies
4 believe that certain fundamental principles should guide the
5 development of an NII.

6 First, we believe that the copyright system,
7 including the fair use doctrine, has already demonstrated an
8 amazing adaptability in the face of new technologies. We
9 believe that it will continue to do so in response to the
10 digital revolution going on around us.

11 Second, we believe that establishment of an
12 enhanced NII should not derogate from the existing rights of
13 computer program copyright owners, particularly the rights to
14 control the reproduction, adaptation, display and
15 distribution of their works.

16 Finally, we agree with the many others who have
17 come before me that the content of standards, be they
18 transactional or technical, should continue to emerge
19 primarily from voluntary industry-led consensus-finding
20 processes with government participation and support to be
21 sure so as to Ensure uniformity in public and private
22 transactions.

23 Adherence to these basic precepts we believe will

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1 insure an NII that advances both the national interest and
2 that of the many copyright creators who make and will
3 continue to make Cyber Space an exciting place to be.

4 Because the full range of copyright issues raised
5 by an enhanced NII is presently uncertain, we believe that
6 major adjustment of the copyright statute is presently
7 unwarranted. Indeed, from our perspective, the most
8 immediate major challenge will be the enforcement of existing
9 intellectual property rights rather than the creation of new
10 rights or perhaps the modification of existing rights.

11 Nonetheless, there are some issues that do appear
12 on the horizon. First, because their works are high value,
13 but easily misappropriated, commercial computer software
14 developers who make their programs available by way of an NII
15 are likely to employ technical copy protection or encryption
16 systems so as to ensure that their works are not pirated.

17 I need not tell the Chairman or the other members
18 of this task force that software piracy is a major problem,
19 both here in the United States and around the world, and that
20 no legal system of itself is likely to eradicate it. High
21 standards of substantive legal protection, effective
22 enforcement and, at least in the case of programs distributed
23 by way of an NII, technical protection systems, will do much

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1 to alleviate the problem.

2 Under current U.S. law circumvention of technical
3 copy protection or encryption systems is not unlawful by
4 statute and would not be found to be unlawful unless it is
5 found to constitute contributory copyright infringement.

6 Accordingly, ITAA recommends consider be given to
7 amending the U.S. copyright statute. The words that I have
8 used in my letter are primarily by way of description, to put
9 a marker. So we would suggest making unlawful the
10 importation, manufacture, distribution of any device or the
11 offering of any system or service, the primary purpose of
12 which is to circumvent technical copy protection or
13 encryption systems.

14 Without this kind of protection, we're concerned
15 that commercial software creators will be unwilling to make
16 their works generally available on the NII and thereby
17 frustrate a goal of the NII, that is to make information
18 technology products and services available to the widest
19 public possible.

20 A second intellectual property issue, which perhaps
21 should be considered and upon which we reserve the right to
22 comment at a later time, is the ownership of intellectual
23 property rights in applications that are created for the NII

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1 where the applications are created in part using federal
2 resources.

3 For some months now we have been working with a
4 number of administration officials who are exploring the
5 nature of applications to be made available by way of an NII.
6 And we've been working with these officials in order to craft
7 a model of public/private partnerships that would be needed
8 to create NII applications, particularly in the specialized
9 areas of education, health care and the delivery of
10 government services.

11 Clearly, where applications are created and
12 financed by the private sector, copyright ownership does and
13 will continue to vest, I assume, in the private sector. And
14 where copyrightable works are created by government employees
15 within the scope of their employment, ITAA believes that the
16 provisions of 17 U.S.C. 105 should continue to prevail.

17 Where, however, works are created using the joint
18 resources of the public and private sectors, however, we must
19 make sure to strike that delicate balance between the public
20 interest and the incentives necessary to stimulate the
21 efforts of private creators.

22 I talk in the letter that I sent to the Working
23 Group about standards and I will not repeat those here in the

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1 interest of saving some time. Suffice it to say that ITAA
2 generally believes it to be inappropriate for the government
3 to mandate standards for matters such as intercommunication,
4 interoperability, licensing, or copy protection. We prefer
5 to leave these to industry-led, consensus-finding standards
6 processes, which incorporate the government point of view and
7 government assistance as well.

8 I would finally like to turn to the matter of
9 intellectual property education. It's no secret that
10 intellectual property piracy is a major concern both here and
11 around the world. And for its part, the private sector has
12 undertaken litigation, legislation and education initiatives
13 to address this problem.

14 In the United States the public and private sectors
15 have worked together to help establish adequate and effective
16 intellectual property standards and enforcement mechanisms
17 internationally, and ITAA is particularly pleased with the
18 intellectual property text of the NAFTA. We congratulate the
19 U.S. negotiating team, at least one member of which I know is
20 here, for bringing home what we hope will become the basis
21 for future bilateral and multilateral agreements on
22 intellectual property.

23 We expect that the private sector will continue its

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1 intellectual property education efforts as the enhanced NII
2 becomes a reality. Indeed, we are confident that software
3 and other digital media creators will employ the very
4 technologies that make an enhanced NII possible to promote
5 the importance of and the need for intellectual property
6 protection.

7 But the U.S. software industry can use government's
8 help today. And I hope I don't tread on too thin ice as I
9 proceed.

10 In February of this year a report from the
11 Department of Defense Inspector General indicated evidence of
12 a significant degree of commercial software piracy in the
13 armed forces and material weaknesses in their systems to
14 promote software protection. The private sector would urge
15 that efforts begin now to implement software protection
16 education programs throughout the Federal Government. Or, if
17 they've already begun, that these be stepped up.

18 For its part, for example, we have already made
19 available our educational brochure, "Thou Shalt Not Dupe,"
20 for adaptation by the EPA. And we extend a helping hand to
21 other government agencies to help establish effective
22 software protection programs.

23 I would like to thank you for your time and I

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1 welcome any questions.

2 CHAIRMAN LEHMAN: Thank you very much. Any
3 questions from the panel?

4 (No audible response.)

5 CHAIRMAN LEHMAN: If not, thank you.

6 I think at this point we'll take a very short break
7 for about five minutes and then be back.

8 (Recess.)

9 CHAIRMAN LEHMAN: Next, I would like to welcome two
10 representatives of the Software Publishers Association, Irene
11 Rosenthal who is the General Counsel of the Association and
12 Mark Traphagen -- I hope I've got people's titles right --
13 who I guess is Intellectual Property Counsel.

14 TESTIMONY BY MARK TRAPHAGEN, ESQ., and

15 MS. IRENE ROSENTHAL

16 MR. TRAPHAGEN: That's fine. Thank you, Mr.
17 Commissioner and members of the Working Group.

18 SPA is pleased to be here today and have the
19 opportunity to address the Working Group of the National
20 Information Infrastructure Task Force.

21 Today I will restrict my remarks to the time
22 available, but would like the Working Group to make of record
23 the full text of the comments SPA has previously submitted.

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1 SPA is the principal trade association of the
2 personal computer software industry. And its more than 1,000
3 members accounted for more than half of the packaged software
4 sold last year throughout the world.

5 SPA wishes to inform the Working Group of the
6 concerns of its members for protecting intellectual property
7 and works available on the NII and other electronic
8 telecommunications networks.

9 SPA members range from very large software
10 producers to small companies. Regarding multimedia
11 production, they also find themselves in the position of
12 copyright users as well as copyright owners. The common
13 thread is that copyright is the lifeblood of their creative
14 efforts.

15 To turn to the inquiries that the Working Group has
16 made, SPA finds that the Copyright Act of 1976, as amended,
17 appears at present to be adequate to protect the rights of
18 those who make their works available via the NII. The
19 outlines of five copyright issues are now visible, however,
20 and SPA urges the Working Group to focus on them.

21 First, SPA strongly rejects the position of some
22 that copyright and other intellectual property rights are
23 somehow lost when works are made available on electronic

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1 telecommunications networks. Rather, copyright and other
2 intellectual property rights must be respected regardless of
3 the technological means by which they are presented or
4 disseminated for rights holders to make their works available
5 at all.

6 Therefore, it should be made clear that the
7 exclusive rights provided to copyright owners, as well as
8 other intellectual property rights, must be respected on the
9 NII.

10 Second, once many works are accessible on demand
11 through the NII and other networks, users may chose to
12 display or perform these works without purchasing a copy.
13 These uses may well substitute for the need to purchase or
14 download copies and thus, to diminish the market for them.

15 Therefore, the copyright law should ensure that the
16 scope of the exclusive rights of public performance and
17 display of copyrighted works on the NII is adequate to
18 preserve their economic potential and is not undermined by
19 exempted uses that supplant demands for copies.

20 Third, serious attention should be given to the
21 possibility that unauthorized copying will become a wide-
22 spread practice. At present it is not infringement to
23 manufacture, distribute or sell a means to circumvent

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1 safeguards preventing unauthorized copying. But last year
2 nearly 800 security breaches were recorded on the Internet.
3 And the Computer Emergency Response Team expects to see over
4 1,000 this year. That amounts to several security breaches
5 each day.

6 Therefore, the copyright law should make illegal as
7 contributory infringement the manufacture, importation or
8 sale of technical devices or computer software products
9 designed to circumvent copy protection of network security
10 and make illegal as copyright infringement their use.

11 Fourth, works available on networks in the United
12 States will be available to network users in many other
13 countries and vice versa. For example, when SPA member
14 Novelle, Inc. released its Netware 4.0 software in Europe, it
15 was illegally copied from an electronic bulletin board in the
16 United States scarcely a week later.

17 Therefore, SPA supports U.S. ratification of
18 multilateral agreements like GATT, TRIPS and NAFTA and
19 continued work in multilateral negotiations such as the Berne
20 Protocol to protect dissemination of copyrighted works on
21 telecommunications networks.

22 Fifth, contract law should be clarified as needed
23 to enable copyright owners to transact licenses in an

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1 interactive telecommunications network.

2 Turning to some of the other questions that were
3 raised in the notice, the provisions of Section 107 of the
4 Copyright Act appeared to provide courts with adequate
5 guidance in deciding questions of fair use while preserving
6 the flexibility of the doctrine's common law origins. For
7 now, Section 107 should be applied by the courts in its
8 present form in disputes over the use of works available and
9 on the NII. If judicial development cannot preserve the
10 balance between copyright owners and users, then Congress has
11 shown itself willing to modify the law when necessary.

12 As for the third inquiry, intercommunications
13 standards for the NII should be voluntary, developed by the
14 private sector and tested by the market. This also applies
15 to labeling or encoding standards for works available on the
16 NII.

17 SPA welcomes the task force's willingness to
18 participate more actively in private sector standards-writing
19 bodies. Standards should not imposed by the government,
20 however, because they promise to be outpaced by the rapid
21 technologic change now prevalent in the industry. We've
22 heard that from several speakers today.

23 As far as licensing is concerned, as mentioned

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1 before, the Working Group can best assist the development of
2 licensing by ensuring the contracts made available on the NII
3 are fully enforceable. Copyright owners should retain full
4 control of their works and, thus, be free to authorize or
5 prohibit their use by others over the network and set the
6 conditions and cost of their use in a marketplace
7 environment.

8 SPA at this time steadfastly opposes the use of
9 compulsory licenses for software available via the NII.

10 Copyright owners ought to be free to decide whether
11 access to their copyrighted works on the NII should be
12 restricted by technical means. If they so decide, they
13 should be able to chose the means that best fits their need
14 for security and marketing. Network management systems, such
15 as some that we've heard about already today, promise to
16 provide the technical means to prevent unauthorized
17 reproduction or use of copyrighted works available on
18 networks.

19 In conclusion, probably the most important step in
20 protecting copyrighted works on the NII may be to dispel
21 mistaken notions about reproducing copyrighted works. That
22 can probably best be done by educating users to respect the
23 intellectual property rights of others.

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1 For example, SPA staff regularly speaks to
2 business, education, legal, government and other computer
3 user groups about how to comply with copyright law while
4 making use of software products. SPA produces a software
5 management guide, brochures, audit kits, such as this one and
6 video tapes in several languages. The Working Group may wish
7 to consider a similar effort. If so, SPA would be pleased to
8 cooperate with this educational effort.

9 In conclusion, SPA's member companies are poised to
10 provide the software necessary to operate the NII and make
11 its content available to network users and in doing so
12 encourage these copyright owners to make their works
13 available for use on the NII and other telecommunications
14 networks.

15 Thank you very much.

16 CHAIRMAN LEHMAN: Thank you very much, Mark. Would
17 Irene Rosenthal like to add anything?

18 MS. ROSENTHAL: Thank you very much. I was here
19 just because there are other issues that I know this panel
20 has gotten involved in, issues such as encryption that the
21 SPA is very involved in and obviously the piracy.

22 Our major concern, I guess, at SPA is that a
23 National Information Infrastructure doesn't essentially come

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1 down to meaning one country, one disk. Obviously there would
2 be no incentive to produce the software if that were the
3 case.

4 CHAIRMAN LEHMAN: Thank you very much. I think
5 that's an excellent point.

6 Are there any questions? Yes?

7 MR. LINN: Mark, you were elaborating a set of
8 points. Point three, if I understood what you said, was that
9 you would treat breaking of the security of a system as
10 contributing to copyright infringement. I don't understand
11 the reasoning for that because I believe that breaking into a
12 system or the security system is already covered by separate
13 statute that is criminal. So what does it get to make it
14 contributory to copyright infringement?

15 MR. TRAPHAGEN: I'm glad you brought that up. The
16 review of the statutes indicates that there are several that
17 address unauthorized access, in particular the Computer Fraud
18 Act. But that also is, in many ways, limited to obtaining
19 access to either federal computers or to financial
20 institution records. That limitation may not be broad enough
21 to encompass all the types of uses or all the nature of all
22 the parties who will be making work available over the
23 network.

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1 CHAIRMAN LEHMAN: There is also another factor
2 there. That is that the essence of intellectual property law
3 generally, and the copyright law in particular, is that it
4 really offers a method of civil law enforcement for
5 infringements. It's very, very easy, very efficient, very
6 quick. You don't have to go to the U.S. Attorney and pull
7 him off drug cases in order to enforce basically a commercial
8 right.

9 The idea or suggestion here was that where you have
10 a practice, the primary purpose of which is to abet copyright
11 infringement, that it should be contributory infringement and
12 you should be able to enforce that in a facile kind of civil
13 law way that gives you effective relief. Is that an accurate
14 description?

15 MR. TRAPHAGEN: It's a very accurate description.
16 Thank you, Mr. Commissioner.

17 MR. LINN: But the fact that you actually broke or
18 defeated the security mechanism doesn't imply that you copied
19 anything or took property that was under some kind of
20 protection.

21 MR. TRAPHAGEN: Well, in one respect. You have to
22 keep in mind that copyright is a bundle of rights. And very
23 often we fixate ourselves upon the reproduction right because

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1 in a copy-bound society that's the primary means by which
2 works are disseminated.

3 However, in the network that may not be the primary
4 means. As has been discussed earlier today, the primary
5 means of dissemination may in fact be unbound from copies and
6 involve other exclusive rights that have not traditionally
7 been as important, such as the public display right. So by
8 gaining access without authorization and effecting a display
9 there may be infringement or unauthorized access to the work.

10 MS. ROSENTHAL: I wonder if I could just add one
11 thing here. That is that many of our members who produce
12 high-end products have copy protection in their product so
13 that people can't dupe that. These are products normally
14 that sell for several thousand dollars and above.

15 What we're finding is that there is a group out in
16 Canada that creates software that breaks the copy protection.

17 MR. LINN: I understand that. But to defeat the
18 security mechanism on the computer as to the notion of
19 building a device or software whose purpose is to defeat the
20 copy mechanisms, that didn't come through, at least to me, in
21 the testimony. And so I wanted to clarify that. I support
22 that argument.

23 MS. ROSENTHAL: Thank you. At the moment, as you

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1 know, the law is very much unfavorable to pursuing the people
2 who are creating the products that break copy protection.

3 CHAIRMAN LEHMAN: If there are no other questions,
4 I want to thank you for coming over this afternoon.
5 Certainly if there is anything else that you want to add, our
6 door is always open and we'll be happy to get more
7 information if you want to give it to us.

8 MR. TRAPHAGEN: Thank you very much.

9 CHAIRMAN LEHMAN: Next I would like to ask Tom
10 Lemberg, who is Vice President and General Counsel of Lotus
11 Development Corporation and is here today on behalf of the
12 Business Software Alliance and also the Alliance to Promote
13 Software Innovation. Welcome.

14 TESTIMONY BY THOMAS M. LEMBERG, ESQ.

15 MR. LEMBERG: Thank you, Mr. Secretary and members
16 of the panel.

17 I'm appearing, as you say, today on behalf of the
18 Business Software Alliance and the Alliance to Promote
19 Software Innovation. And we, like everyone else, would like
20 to thank you for opening this dialogue on these important
21 issues involving intellectual property on the NII.

22 The member companies of BSA and/or APSI include
23 Adobe, Aldis, Apple, Autodesk, Borland, Computer Associates,

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1 Digital Equipment, GO, Intel, IBM, Lotus, Microsoft, Novell,
2 UNIX Systems Labs, and WordPerfect.

3 The digital information revolution is underway.
4 The digital revolution will enable everyone to be plugged
5 into and to be interactive with everybody else. Because of
6 the ease, speed, versatility and reliability of creating and
7 transmitting digital information, it will be the preferred
8 pathway for business and commerce and the desired highway for
9 personal and cultural communications. So it isn't surprising
10 that the private sector is already well underway in
11 developing and deploying the infrastructure necessary to
12 support this digital revolution.

13 We've witnessed the birth of a broad array of new
14 enterprises, joint ventures and business alliances as
15 companies get ready for and try to begin participating in the
16 digital future. We expect that trend to accelerate greatly
17 in the months and years ahead.

18 The NII offers us many new opportunities. For one
19 thing, it will generate demand for a wide array of new
20 products and services which will rely on advanced computers
21 and sophisticated software. That, in turn, will create new
22 opportunities for expanding our country's technology base
23 manufacturing and otherwise creating high-paying, high-

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1 skilled jobs.

2 Second, of course, new applications of digitized
3 information will offer all Americans, regardless of their
4 location or economic position, access to the latest
5 information in a whole host of areas, including such things
6 as health care education, manufacturing and improved access
7 to information from the government and otherwise in
8 libraries.

9 So the NII will, therefore, be able to serve as the
10 administration has suggested, as an enhanced and efficient
11 provider of social services.

12 However, in order to be able to fully realize these
13 benefits, NII must have a number of essential
14 characteristics.

15 First, it must be capable of affording access to
16 all potential users, whether they're private citizens or
17 hospitals or businesses or schools or whatever.

18 Second, there must be compatibility between the
19 sources of information and the means of access. Users must
20 be able to use and access information through a variety of
21 machines and to transmit the information between different
22 types and sizes of machines everywhere.

23 While much of the talk about the NII naturally

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1 revolves around hardware, it is essential to understand that
2 what makes the whole system work is software. The hardware
3 may serve as the muscle, but it is the software products that
4 can be proprietary for an instant, like my company's product,
5 Notes, that will operate as the brains of things like the
6 NII.

7 Software does this in two ways. First, it helps
8 the user navigate oceans of digital information to locate or
9 create that which is useful or desired and also to be able to
10 use and manipulate that information efficiently.

11 Second, once a decision is made to send or receive
12 information, it is the software that actually pulls this
13 information through the computer switches and wires that
14 constitute the physical network.

15 Now, the protection of intellectual property
16 through copyright is an essential element of the successful
17 development and deployment of the NII. Clear and appropriate
18 legal protection of proprietary rights is needed to provide
19 the necessary incentive for the development of the software,
20 hardware and elements of content which will make the NII
21 attractive to users. This protection is also necessary to
22 instill confidence in the owners of software and other
23 created works that their products will not be subjected to

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1 piracy and unauthorized use just because they're on the
2 network.

3 I should say just a word, notwithstanding the
4 tremendous success that our industry has had to date, piracy,
5 the unauthorized duplication or distribution of software,
6 remains a major continuing threat to our industry. And
7 worldwide we estimate, just to give you an order of
8 magnitude, that the industry loses about \$12 billion annually
9 and at least a couple of million of that in this country to
10 software piracy.

11 The digital information revolution presents unique
12 challenges to protecting the rights of copyright owners.
13 First, digitization offers an easy and inexpensive method to
14 create an unlimited number of perfect copies.

15 Second, digitized information can be
16 instantaneously uploaded and downloaded by an unlimited
17 number of people. And third, information in disk media can
18 be converted into a single digital stream and easily
19 manipulated to create a variety of new works using old works.

20 So the continued growth of the software industry
21 and other information technology related industries and the
22 successful development of the NII will depend on the
23 continuing ability of the copyright law to adapt to these

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1 challenges.

2 Moreover, as the NII evolves, it will be critical
3 that aggressive and effective enforcement of copyright laws
4 be a top government priority.

5 Obviously, the NII is evolving rapidly. Our
6 industry is still in the early stages as individual companies
7 in devising business strategies and developing new products
8 and services to take advantage of the many opportunities that
9 the NII affords. We don't yet know the full implications for
10 the industry. Companies are just trying to figure this out.
11 We're trying to figure out what are the commercial
12 opportunities, what will work, what won't work, talking to
13 ourselves, talking to other companies, and frankly, most of
14 what is going on now is people guessing as to what will work
15 and beginning to think about how to experiment with that to
16 determine what will be commercially successful and what
17 won't.

18 While it is likely that some changes in law and
19 policy will be needed for the efficient development of the
20 NII at some point, it is our current judgment that what will
21 be needed is adjustment at the margin, not wholesale change.

22 Copyright laws work awfully well. It's been an
23 awfully flexible instrument, certainly, for the software

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1 industry. We don't see any reason why that isn't likely --
2 it's highly likely to continue as the NII develops. In any
3 case, we believe we need more practical experience with the
4 NII and its operation before proceeding with any fundamental
5 changes in the law.

6 Having said this, we do see at least some areas or
7 one area where change may be appropriate. And we do support
8 the suggestion you made, Mr. Secretary, of exploring possible
9 amendments, as was discussed with the prior witnesses, that
10 will make it a criminal and civil offense to manufacture,
11 import, sell, lease, use, or possess, a technical device or a
12 computer program product, the purpose of which is to
13 circumvent either security of the NII or any other security
14 measures included it in or in the copyrighted works
15 themselves; copy protection devices which is one particular
16 example.

17 As for other proposed changes to current copyright
18 law, at this time we believe it would be premature to make
19 any recommendations. With additional experience and further
20 development of the superhighway, we will be better positioned
21 perhaps to suggest other changes, statutory, regulatory, if
22 they seem necessary.

23 Some of the copyright issues that will need

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1 particular examination that we need to keep thinking about as
2 we watch this thing involve include the scope of protection
3 for derivative works; the rights of reproduction and
4 distribution; display and performance rights; fair use; and
5 licensing.

6 With respect to copyright licensing systems, we
7 believe that we yet lack the necessary experience with the
8 NII to make recommendations for any proposed such licensing
9 systems for works that are made available via the NII.
10 However, we should say that the history of our industry and I
11 think of other copyright-based industries is that efficient
12 licensing and distribution systems have evolved over time in
13 response to consumer's needs and market forces. Our
14 experience to date has been with individual transactions
15 governed by contracts and it's worked awfully well.

16 We have had very little experience with the
17 collective administration of rights. But we are certain that
18 compulsory licensing of copyrighted works would not be
19 appropriate through the NII. This is particularly true of
20 works of high value, such as programs.

21 We likewise believe that it is premature to talk
22 about establishing standards for labeling or for
23 interconnectivity and interoperability. We believe that the

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1 market has worked quite well so far, technology and the
2 market combined, and we don't see any reason, yet at least,
3 to try and legislate a solution that might fossilize
4 technology before it has even had a chance to develop.

5 I do want to say one thing about encryption. I
6 think it's important to recognize that encryption involves
7 not just the protection against piracy of a program, say,
8 something my company might produce or many other companies,
9 but also of the information that customers might wish to
10 convey through the network, whether through a program they
11 buy from one of us or some other means. And that is
12 something that is terribly important today for companies in
13 our industry.

14 We are very, very concerned that the export control
15 policy of the United States, which limits the level of
16 encryption that we can offer to our customers for products
17 that are sold outside of the United States and Canada could
18 very seriously hamper the development of the NII certainly
19 for anyone who wishes to connect it at all with anything that
20 goes on outside of the United States.

21 Again, Mr. Secretary, and other members of the
22 committee, we would like to thank you for providing us with
23 this opportunity to present this statement. We look forward

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1 to a continuing dialogue as the NII evolves. Thank you very
2 much.

3 CHAIRMAN LEHMAN: Thank you very much, Mr. Lemberg.
4 Are there any questions?

5 (No audible response.)

6 CHAIRMAN LEHMAN: If not, thank you very much for
7 coming down from Cambridge to join us today.

8 Next I would like to ask Brian Kahin who also came
9 from Cambridge today and is General Counsel and Director of
10 the Intellectual Property Project of the Interactive
11 Multimedia Association.

12 TESTIMONY BY BRIAN KAHIN, ESQ.

13 MR. KAHIN: Mr. Chairman, I would like to ask our
14 Executive Director, Philip Dodds who is here to join us,
15 particularly if there are questions about standards issues;
16 he is the expert.

17 CHAIRMAN LEHMAN: Happy to have him.

18 MR. KAHIN: The IMA is a 260 member trade
19 association representing the emerging multimedia industry.
20 It addresses the needs of the industry through its work on
21 cross platform compatibility, intellectual property, industry
22 convergence, public policy and public awareness in
23 multimedia.

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1 The compatibility project that the IMA developed
2 recommended practices in support of cross platform
3 compatibility, both on stand-alone platforms and across
4 networks. We issue requests for technology to identify
5 appropriate technology which can be made publicly available
6 with minimal or no proprietary constraints.

7 Requests for technologies in progress include
8 multimedia scripting languages, data exchange, and multimedia
9 services. Our intellectual property project was launched in
10 early 1992 to address the range of issues faced by multimedia
11 developers and publishers in clearing and managing
12 intellectual property rights for products and services.

13 We are keenly interested in the problems of
14 mediating access to information. And in April of this year
15 we sponsored a workshop on technological strategies for
16 protecting intellectual property in the networked multimedia
17 environment in partnership with the Coalition for Network
18 Information, the MIT program on digital open high-resolution
19 systems, and the Science, Technology and Public Policy
20 program at Harvard's Kennedy School of Government. The
21 proceedings of the workshop, including papers from five or
22 six of those present here, will be published shortly.

23 Just as we believe that cross platform

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1 compatibility is critical to Ensuring that there is a market
2 for software, we believe that standards to ensure
3 interoperability and accountability for information are
4 necessary to a fully developed information infrastructure.
5 The envisioned scale, extensibility and interoperation of the
6 infrastructure requires some public oversight of standards
7 development. The role of the government will vary according
8 to circumstances, but it should generally be supportive of
9 standards development processes that have broad cross
10 industry support.

11 There are parts of the infrastructure that may be
12 implemented incompatibly in different regions. In
13 particular, interactive services provided via so-called set
14 top boxes may suffer from incompatible protocols and
15 interfaces, leading to suboptimal interoperation, unequal
16 access or undesirable lock-in effects. The government should
17 encourage industry convergence on common specifications for
18 such critical interconnection points.

19 Standards for managing intellectual property are
20 important, not just for the software they enable, but because
21 they will enable the use of the infrastructure to carry vast
22 amounts of proprietary information that would otherwise not
23 be carried, perhaps not even created.

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1 The NII should be a finely mediated, trusted
2 environment in which users can navigate among diverse
3 information objects and sources from diverse owners and
4 publishers and available on a variety of terms and
5 conditions.

6 However, designing an environment that fully
7 enables such linking and interoperation is a monumental
8 challenge.

9 What should be done? First, the National
10 Cooperative Research Act should be amended to clearly apply
11 to the development of open standards, including the use of
12 requests for technology as a procedure for developing
13 recommended industry practices. Standards for labeling and
14 encoding should be strongly encouraged but not mandated
15 absent a clear need.

16 The IMA is eager to work with federal agencies and
17 other industry groups to develop voluntary standards in this
18 area.

19 Similarly, licensing systems should be developed
20 primarily by the private sector, almost exclusively by the
21 private sector, although we would welcome government
22 contribution to the research that may be necessary to design
23 complex licensing systems. Government support for open

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1 industry solutions is likely to encourage and accelerate
2 market acceptance.

3 We note, however, that there already are a
4 multiplicity of licensing systems for networked information,
5 such as traditional online systems and authenticated site
6 licensing. The number and variety of licensing systems is
7 likely to grow. Federal policy can help ensure
8 interconnection and interoperability among heterogenous
9 systems.

10 More ambitious ideas of implementing hardware-based
11 authentication and controlled decryption need careful
12 research and planning. Less secure systems that protect
13 intellectual property are viable for many products and
14 services. And such systems will be quicker and easier to
15 implement.

16 Finally, we note a very serious issue omitted from
17 the request for comments: the granting of broad patents on
18 abstract system-level processes. It is ironic that while
19 federal telecommunications policy has been focused on
20 generating competition within hither to monopolistic
21 telecommunications environments, another federal agency has
22 been granting 17-year exclusive franchises on claims for
23 system concepts, methods of presenting information, and

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1 educational and business systems, including simple procedures
2 for accounting for the use of information.

3 Often such broad claims are difficult, if not
4 impossible, to design around. They not only stifle
5 competition, but they conflict with fundamental First
6 Amendment principles. It is also ironic that while NTIA and
7 the FCC have considerable expertise in the economics of
8 competition and the technological environment which they
9 oversee, the Patent and Trademark Office does not.
10 Historically, the Patent and Trademark Office has been
11 uninterested in the economic impact of its operations and it
12 lacks expertise to evaluate novelty and non-obviousness in
13 areas that are outside the scope of traditional physical
14 process and product technologies.

15 Most of these patents we are concerned about are
16 obvious or not novel. But the strong presumptions presently
17 built into the patent system make them very difficult to
18 challenge. Issuance of patents on information processes
19 increases the possibility that a common platform or interface
20 may inadvertently incorporate a patented process, a problem
21 which would be greatly alleviated by a first-to-file system
22 with pre-grant publication, especially if the publication
23 were effected shortly after filing rather than the usual 18

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1 months.

2 In general, because information rides on
3 technologies and systems, the value added by publishers and
4 users is jeopardized by patents on underlying technologies
5 and systems. Unlike copyright, patents preclude independent
6 creation. The patentee's exclusive rights extend not only to
7 manufacture and sale, but to use, even the use of direct
8 products of patented processes. This power can exert
9 extraordinary leverage over information flows.

10 The lack of effective limits and controls in the
11 patent system and its insensitivity to competing values are
12 creating outrage and anxiety, as you may have seen in the
13 papers this week. An unfortunate result if these problems
14 persist will be to diminish respect for intellectual property
15 in general.

16 Thank you.

17 CHAIRMAN LEHMAN: Thank you, Mr. Kahin. Are there
18 any questions?

19 As I indicated before Mr. Laurie spoke, prior to
20 the issuance of the multimedia patent we had already planned
21 on having hearings on this very issue. I think you raise
22 important questions that do need to be addressed. And part
23 of the Clinton Administration's agenda is that we are going

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1 to address those questions.

2 Today we had one day of hearings on this; we're
3 going to have five in January on that issue. So you may wish
4 to participate. Alden.

5 MR. ABBOTT: Just one quick question. The proposal
6 to expand the National Cooperative Research Act, which of
7 course, was amended and extended somewhat last spring, does
8 that reflect some sort of concern that open standards
9 development -- about the anti-trust include standard
10 development?

11 MR. KAHIN: It's not a great deal of anxiety on our
12 part. We get different messages from some of our members.
13 Some of our members would like us to be registered under the
14 National Cooperative Research Act.

15 But to some extent the Act protects you whether
16 you're registered or not. It protects you against treble
17 damages, but it doesn't offer some of the additional
18 protections unless you are registered. But it's not clear to
19 what extent the Act is designed to protect standards
20 development, which is less in the way of direct research and
21 development, particular way we do our requests for
22 technology. We come up with a set of specifications,
23 expectations about what we would like to see a particular

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1 technology to do. Then we solicit input from the industry.
2 But then we have to evaluate it collectively.

3 MR. LINN: I would like to pursue that. There is
4 an open accredited voluntary standards-making process within
5 the U.S, with plenty of professional organizations. Are
6 there explicit extensions that you would recommend in terms
7 of that Act to accommodate standards-making? Is that the
8 thrust of your comment? Or at least I think that's the
9 thrust of your comment, to expand that Act so that it would
10 accommodate making the standards within a cooperative
11 agreement.

12 MR. DODDS: I think that what we're observing is
13 that all of our members and much of the industry that we deal
14 with are in agreement that the standards-making process ought
15 to occur in the private sector and without government
16 intervention.

17 On the other hand, there is also agreement that
18 there are key, perhaps strategic points of agreement, key
19 enabling technologies such as, for example, interfaces and
20 protocols or points of connection, if you will, that have a
21 greater interest and are of concern both to government and to
22 the individual companies within industry for the building of
23 a solid infrastructure.

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1 In those cases there needs to be some kind of
2 proactive and positive interaction to put focus specifically
3 on those few key points, and that modification of that Act to
4 incorporate standards might be one way to sharpen that focus
5 and create a structured and well-defined relationship between
6 industry where it does most of the work and where government
7 can effectively point to those points it feels would be
8 enabling or important.

9 MR. LINN: Are you suggesting that the government
10 not participate as an equal in standards-making fora?

11 MR. DODDS: No. I would certainly not propose
12 that. I rather instead would propose that the government
13 take a specific leadership role in those instances where it
14 feels that a standard is important, leaving the work itself
15 to be done in the private sector.

16 MR. LINN: The reason I ask that question is, in
17 fact, there are many of the standards bodies that encourage
18 and invite the government to participate in the making of
19 those technical standards. So is it your association's
20 perspective that you don't want that?

21 MR. DODDS: No, it is not. In fact, all of our
22 technical bodies may all go all through NIST.

23 CHAIRMAN LEHMAN: I want to thank you for joining

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1 us this afternoon. I particularly would be interested in
2 following up -- I don't want to do it right now -- but on
3 some of the questions that I raised earlier with the sound
4 recording people, which I think have implications for
5 interactive multimedia. That is the creation of derivative
6 works in an interactive context and how you license the
7 underlying work and deal with that issue. Maybe there is no
8 problem there, but if you have some thoughts on that, maybe
9 we can follow up on that.

10 MR. KAHIN: And the sampling issue.

11 CHAIRMAN LEHMAN: Yes. Sampling is an illustration
12 of it. But it goes way beyond that as you get into the
13 development of real multimedia widely-used. I mean, you can
14 have people all over the place using other people's stuff to
15 make things with. Some of that will be of commercial value.

16 On one hand, that's a great thing I think we want
17 to encourage. On the other hand, we don't want to have the
18 fundamental intellectual property system fall apart by having
19 people just willy-nilly expropriating other people's work.
20 There should be some kind of smooth and easy licensing
21 system, I guess, to permit that if interactive multimedia is
22 going to be all that it can be.

23 That's my initial reaction to it. It's kind of a

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1 technical question that probably we could sit and talk about
2 for an hour. So maybe we should follow up with that, but I
3 did want to leave that with you.

4 MR. KAHIN: We do have some thoughts on that we
5 would like to share with you.

6 CHAIRMAN LEHMAN: Okay. Good.

7 Next, Gary Shapiro, Group Vice President of
8 Electronics Industries Association. I sort of feel with a
9 lot of these witnesses that we're all growing old together in
10 various and different capacities.

11 MR. SHAPIRO: Yes, Mr. Chairman, we worked on these
12 issues I believe 11 or 12 years ago.

13 CHAIRMAN LEHMAN: I imagine you started on Capitol
14 Hill longer ago than that and you were with --

15 MR. SHAPIRO: I think you've come much further than
16 I have.

17 (Laughter.)

18 TESTIMONY BY GARY J. SHAPIRO

19 MR. SHAPIRO: Mr. Chairman, I'm here on behalf of
20 the Electronic Industries Association and the Home Recording
21 Rights Coalition, which I serve as its chairman. Both groups
22 are vitally interested in some of the issues you raised in
23 your Federal Register notice, and we're pleased to offer our

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1 viewpoints.

2 The Electronics Industries Association is a
3 national trade association for the electronics industry. It
4 represents about 85 percent of the dollar volume in
5 electronics and it includes defense, telecommunications
6 components, industrial electronics and consumer electronics.
7 The electronics industry is the nation's largest
8 manufacturing employer; we're talking about some 2 million
9 jobs in electronics in the United States. Some of my
10 colleagues who testified earlier also represent segments of
11 the electronics industry.

12 The industry is also, I believe, the largest patent
13 owner in terms of owning individual patents. Mr. Laurie
14 noted that role earlier. He also indicated that most of the
15 focus today has been on the copyright issues and the
16 copyright owners and they will provide the fuel for the
17 engine for the National Information Infrastructure. But that
18 engine will require a physical and electronic infrastructure
19 as well with gateway devices in every home, school, office
20 and probably car. So I think patent issues are certainly
21 vital and important.

22 But today I'll mostly address the copyright issues.
23 I would like to talk about EI a little bit more. One of our

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1 most important services is to provide leadership and
2 resources in setting voluntary technical standards. In
3 working with the FCC and other regulatory bodies we set about
4 100 electronic standards every year. In terms of the
5 National Information Infrastructure, I think we've created
6 one of the most critical one and that is the RS232 or, as we
7 call it, the EIA232, the back of the computer which allows
8 computers to communicate with other devices.

9 We have taken the lead in setting standards for
10 television, including close captioning and electronic data
11 broadcasting as well as FM and AM radio. We are also
12 involved in pending proceedings with respect to high
13 definition television, consumer electronics cable
14 compatibility and digital/audio broadcasting.

15 As industrial and consumer electronics become more
16 fully digital, as they increase in capacity and resolution
17 and in some respects converge, and as the Mexican and
18 Canadian economies become interlinked with our own, we expect
19 that our standards responsibilities will increase.

20 As far as the Home Recording Rights Coalition, it
21 was formed in 1981 after that famous Ninth Circuit U.S. Court
22 of Appeals decision which ruled that selling video tape
23 recorders to consumers was contributory copyright

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1 infringement. Although that decision was reversed in 1984 by
2 the United States Supreme Court, the legislative
3 controversies over home recording of both audio and video
4 material have persisted.

5 The HRC's scope is broader than the EIA in that the
6 EIA has electronics companies; the HRC also includes consumer
7 organizations, retail and service organizations and many
8 others.

9 Generally, the HRC has opposed any legislation that
10 would restrict the rights of consumers to make recordings at
11 home for private non-commercial purposes or they would impose
12 general levies on home recorders of blank media.

13 In the last two Congresses, however, the Home
14 Recording Rights Coalition did support legislation to
15 establish standards with respect to digital audio, including
16 the Audio Home Recording Act, that effectively set a
17 conditional access standard for digital audio recorders and
18 digital audio interface devices. Both the HRC and the EIA
19 are very interested in the issues bearing on the personal use
20 of consumer electronics equipment.

21 I would like to just review in a general sense
22 where we stand on issues that pertain to the NII. For HU-TV
23 we have worked on a standard. We've supported the Advisory

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1 Committee on Advanced Television Systems. We've helped fund
2 the Advanced Television Test Center. And we've spent a lot
3 of engineering time trying to achieve a national broadcast
4 terrestrial standard. We're hopeful by the 1996 Atlanta
5 Olympics there will be one in place. We believe that that
6 standard will meet the unique needs of the U.S. marketplace.

7 We believe that standards for broadcast and non-
8 broadcast audio/visual media must conform to the greatest
9 extent possible. In terms of cable TV, we have worked
10 towards compatibility and standards for compression,
11 transmission and access.

12 The 1992 Cable Act, Section 17 requires the FCC to
13 act to enhance compatibility between cable media distribution
14 systems and features of consumer electronics equipment such
15 as TVs and VCRs. Thus, we are effectively helping to shape
16 an audio/visual superhighway. That Act arose because there
17 was great frustration in that there was absolutely no
18 standard at all in terms of all the different cable converter
19 boxes out there, yet the TVs were all built to a standard.
20 Consumers were very frustrated and Congress saw fit to act
21 and require that cable and the consumer electronics
22 industries have a standard interface and be compatible with
23 each other.

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1 We agreed with the cable industry that there should
2 be a standard interface and we agreed that we must proceed
3 immediately on development towards a single standard for
4 digital compression and transmission of signals.

5 The work towards digital standards includes joint
6 engineering, work towards a national renewable security
7 standard, as well, I might add.

8 For intellectual property, the Home Recording
9 Rights Coalition has developed principles for future
10 application. Certainly the technical, media and political
11 roles have changed significantly since the Supreme Court's
12 1984 Sony decision. But we believe the Supreme Court made
13 the correct decision in that case and that its analysis with
14 respect to contributory infringement and fair use remains
15 valid today.

16 The VCR, the sale of which the Court legitimized,
17 has been the foundation for a new U.S. entertainment
18 industry, larger than ever and a dominant international
19 exporter.

20 We have not, however, remained committed only to
21 the status quo. We join the entertainment industry and
22 congressional leaders in recognizing the need for standards
23 and an end to controversy with respect to digital audio

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1 recorders. The result was the Audio Home Recording Act.
2 Endorsing the Act, we created a statement of principles,
3 which I believe is still valid today in how we look at new
4 technology.

5 First, consumer equity. Any regulation of new
6 technology should primarily benefit consumers.

7 Second, promotion of new technology. Government
8 regulation should enhance access to new technologies.

9 Third, legal certainty. The right to sell and use
10 consumer recording products should be preserved and
11 clarified. Simply put, we do not agree with approaches that
12 would promote uncertainty through new contributory
13 infringement lawsuits.

14 From these perspectives, we can address the
15 questions posed by the Working Group. To suggest that the
16 copyright law is inadequate, as is posed in the form of a
17 question, may be to assert the copyright principles need to
18 be expanded for new technologies.

19 New technology may, but does not necessarily,
20 change the analysis of fair use principles as they pertain to
21 any particular application. In this respect, our view is
22 that first, the fair use issues addressed by the Supreme
23 Court in the Sony case were correctly decided. The reasoning

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1 of the Court remains valid today. Second, it should not be
2 assumed that new technology requires a change in the outcome
3 of the fair use analysis.

4 While improvements in delivery and copying may
5 change the level of analysis, the evidence from improvements
6 to date has been that the positive results for copyright
7 proprietors have more than offset the negative potential.
8 The VCR, of course, is the best case in point. And the
9 burden for persuasion should be on those who claim, for
10 example, that an improved VCR or changes in media
11 distribution will lead to a different outcome.

12 Third, while improved technology may enable
13 copyright owners to charge different prices to different
14 users, new legal or technical power to achieve such a result
15 should not necessarily be granted to proprietors as a matter
16 of law.

17 Moving on to other questions as to standards
18 labeling and interoperability, it may be appropriate to
19 provide for identification of contractual conditions that the
20 providers wish to impose on its use. Different types of
21 works may require different conditions or restrictions.

22 The EIA has been a leading proponent of voluntary
23 technical standards and, where appropriate, the setting or

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1 acceptance of standards by the FCC. The lesson with respect
2 to non-interactive services has been the confidence in a
3 national system or market, that it is to rely on universal
4 access, requires that the FCC adopt a single standard. You
5 could compare the success of television and FM radio with AM
6 stereo on the other hand to see when there is not a standard
7 that the FCC has chosen.

8 The need for standardization of potentially
9 interactive systems is, in some respects, similar. Clearly
10 where the objective is universal access at the lowest
11 possible cost to consumers, standards are essential. In the
12 FCC cable compatibility proceeding, we have argued vigorously
13 that consumers are best served by competition in the market
14 for display devices and interface devices.

15 As to licensing and technical measures, some
16 copyright owners may wish to establish contractual licensing
17 systems with respect to the NII according to kinds or groups
18 of works. Online systems have demonstrated that the NII is
19 likely to be so dynamic, however, that it seems unlikely that
20 the demand for and nature of uses can be accurately
21 predicted. Accordingly, the workability of contractual and
22 possible technical measures ought to be explored before any
23 judgment can be made about the need for or prospective

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1 operation of any compulsory license.

2 The question is, will there be a government role to
3 structure, enforce or extend such systems based on copyright
4 or some system of law and regulation. I think you can look
5 to the Audio Home Recording Act for instruction. It's
6 really, as Hilary Rosen indicated earlier, a little bit too
7 early to judge, but there are some relevant points we can
8 learn from that, and it is in my written statement.

9 In the world of digital audio video works,
10 standards are likely to include conditional access
11 provisions. This is likely to apply to the international
12 voluntary end pay, documentation of the work of the Grand
13 Alliance in ACATs in and HD-TV standard, as well as the work
14 towards a standard for digital cable TV and similar services,
15 including HD-TV implementation.

16 Thus, the work ongoing with respect to conditional
17 access and transmission standards may be relevant to
18 additional standards work now ongoing with respect to
19 reproduction.

20 I see my time has elapsed, Mr. Chairman, so I will
21 refer you to my written statement. I appreciate the
22 opportunity to have appeared today. And we recognize the
23 importance of your work and we stand ready to assist in any

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1 way possible.

2 CHAIRMAN LEHMAN: Thank you very much. Are there
3 any questions of any members of the panel?

4 (No audible response.)

5 CHAIRMAN LEHMAN: Thank you very much for joining
6 us.

7 Our next witness will be Dr. Douglas Brotz who is
8 the principal scientist at Adobe Systems, Incorporated,
9 Mountain View, California.

10 I want to make note of the fact that we're going to
11 have one other witness following Dr. Brotz. That is Frank
12 Connolly, Associate Professor at American University. He
13 wasn't on our list here, but we're going to accommodate him
14 by adding him to the list. Then we'll be finished for the
15 afternoon.

16 If you would proceed, Dr. Brotz. Thanks for coming
17 all this way to help us out.

18 TESTIMONY BY DOUGLAS K. BROTZ, Ph.D.

19 DR. BROTZ: Thank you, Mr. Chairman.

20 I represent Adobe Systems, Incorporated, which is a
21 leader in the design of systems for expressing information
22 for display transmission and printing. So, my company is
23 very interested in how the NII will shape up.

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1 I find myself in the interesting position of being
2 the next to last witness and, therefore, finding that many of
3 my comments have been stated by previous speakers. So I will
4 need to ask that some of their remarks be incorporated in
5 mine by reference, but, of course, only short quotes so as
6 not to go beyond the bounds of fair use.

7 (Laughter.)

8 DR. BROTZ: I feel that there is an important
9 question that needs to be asked even before the questions
10 that were listed in the notice of hearing. That is, what
11 exactly are we talking about when we talk about the NII?

12 I feel that there is an assumption, a dangerous
13 assumption, that is inherent in many of the questions. And
14 that assumption arises from our use of the superhighway
15 system as a metaphor for this new information system. It is
16 useful to have metaphors so that we can discuss things
17 without understand the deep technology, but sometimes the
18 metaphor becomes the reality for people and we lose sight of
19 what the actual thing is that we're discussing.

20 The NII is not a single isolated entity, like the
21 super highway system. In California, for example, when you
22 enter a freeway there is a little green sign that says
23 "Freeway Entrance." But there will not be any such sign in

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1 the NII. The NII, as we have it now and as it will exist in
2 the future, will be a very amorphous collection of
3 information transmission systems. It will use telephone
4 lines, radio waves, physical media being transported from
5 place to place and a variety of mechanisms that we might not
6 even foresee today.

7 So when talk about the NII, I think it's not
8 reasonable to use terms like the security of the NII because
9 we're really talking about how secure intellectual property
10 is in any form that we see it.

11 If I go to strain the analogy a little more, there
12 are no border crossings in the NII. That is, there is no
13 customs gate where we can check to see whether you are going
14 outside the national system and into the international
15 system. As Mr. Traphagen has said, we really have to look
16 beyond our own borders to the international arena to see what
17 the implications are of the policy decisions that we make
18 here.

19 It will be of utmost importance for us to enter
20 into multilateral agreements and harmonization of
21 intellectual property laws because once we put something on a
22 network here, it really is in the global network. I am
23 reminded that much of the initial news that we had about the

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1 uprising in Tiananmen Square came over the Internet. There
2 is no finer example for how international this system
3 actually is.

4 Regarding encoding standards and licensing
5 standards, I feel that we currently have absolutely no
6 experience with a truly National Information Infrastructure.
7 What we have today is not available to all people in our
8 country. And the scope of the system that we have today, the
9 Internet and its assorted branches, while extensive, is
10 nowhere near the kind of system that we envision. As a
11 result, I echo the comments of the overwhelming majority of
12 speakers today that setting standards today would be
13 extremely premature.

14 We have found that standards can be developed
15 through the marketplace and that that is generally a very
16 effective mechanism for developing a new technology.

17 Even though my company may benefit from some of our
18 techniques being made standards, we still feel that mandating
19 a standard today would stifle innovation and it would stifle
20 our own company's future.

21 When we talk about security, I think that it is
22 very important for us to encourage a wide variety of security
23 mechanisms and allow experiments with different types of

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1 security mechanisms, allow the providers of information to
2 chose the kind of security that they feel is appropriate and
3 not mandate one particular standard, but be open to the
4 inclusion of many different security means in electronic
5 media.

6 We have found in our company that there is a
7 definite trade-off between legal protections and technical
8 protections. That is, in places where there are strong legal
9 protections, you don't need very strong technical protections
10 and vice versa. Where there is no legal protection or very
11 weak legal protection, then you have to depend on strong
12 technical protections.

13 But given the choice, I would come down on the side
14 of strong legal protections rather than technical protections
15 because, in my experience, I have become skeptical of any
16 technical solution for protecting people's rights. We are
17 talking here not about a consumer product such as a digital
18 audio tape where people really don't get into their machines
19 with soldering irons and whatnot. But we are dealing in the
20 world of computer programmers, hackers, people who are very
21 intimately experienced with taking apart pieces of software
22 and hardware and what have you. Even the most baroque
23 protection scheme, I can guarantee you, can be gotten around.

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1 Given this state of affairs, I feel that the
2 technical protection is a necessary evil. We should allow it
3 to be, but we should do whatever we can to make it
4 unnecessary.

5 We find that, for example, in places where there is
6 strong legal protection, the technical protection merely gets
7 in the way of selling a product and gets in the way of a more
8 widespread use of the product that we're trying to sell or
9 distribute. Whereas, when we are talking about selling
10 something in a country like China, for instance, no
11 distributor will touch our product with a 10-foot pole unless
12 we have the strictest kind of technical protection.

13 I would also like to say a bit about education.
14 Everybody here is for education. I have not heard a nay vote
15 yet. There are all kinds of ways that we might go about it.
16 Let me take my right to be self-contradictory at this point
17 and lapse into the highway metaphor because I would like to
18 propose a simple idea that I would hope might be elaborated
19 on by others.

20 It is that, given that we are talking about
21 intellectual property rules as being so-called rules of the
22 road, we might have an interesting way of educating the
23 public by coming with the concept of a so-called driver's

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1 license for the information highway.

2 This concept does not have to be very deep.

3 However, the Federal Government could take a leading role in
4 defining what the rules of the road actually are, putting
5 together a so-called driver's handbook that would be
6 distributed to people who need it. And perhaps such a
7 driver's license, which might be some complicated piece of
8 password or identification or whatnot, could be used as a
9 baseline by other people in their licensing schemes to at
10 least say that this person has passed the rules of the road
11 test and at least understands what intellectual property is
12 about.

13 My company has experience with trying to get people
14 to contractually obligate themselves to obeying certain rules
15 of the road. When we were trying to sell equipment in Japan
16 we felt that it would be necessary to have every customer
17 sign a license in the store where the person would pick
18 something up because it was considered that shrink-wrap
19 licenses or the other mechanisms that we commonly depend on
20 in the United States just would not cut it there.

21 I think that such a driver's license, as I've
22 proposed, might include some kind of signed obligation
23 saying, yes, I understand what this is. And it might provide

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1 some basis.

2 I see my time is finished. If there are any
3 questions, I would be happy to take them.

4 CHAIRMAN LEHMAN: Does anybody have any questions
5 of Dr. Brotz?

6 MS. BERNSTEIN: Yes. Who would run such a system,
7 your driver's license system, if it's a government-controlled
8 thing?

9 DR. BROTZ: I hesitate to appoint the Department of
10 Transportation.

11 (Laughter.)

12 DR. BROTZ: I have not formed this idea much beyond
13 the metaphor stage. But the Department of Commerce, at least
14 the main arm of definition of intellectual property policy,
15 might be a worthwhile candidate.

16 MS. BERNSTEIN: What kind of minimum standards
17 would there be for someone to get such a license in your not-
18 yet-thought-out view?

19 DR. BROTZ: Well, there might be an exam consisting
20 of 10 questions where you have to get them all right, such
21 as, can I copy anybody's floppy. The answer is no. I like
22 that. Of course, exactly what the content of this exam would
23 be, would be open to hearing after hearing. But at least

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1 it's something to start with.

2 CHAIRMAN LEHMAN: The question was, who is going to
3 pay for it?

4 MS. BERNSTEIN: Yes.

5 CHAIRMAN LEHMAN: We're a fully user fee funded
6 agency here.

7 MS. BERNSTEIN: Are you going to charge a fee for
8 licensing?

9 CHAIRMAN LEHMAN: That's the way it's done, I
10 guess. Most motor vehicle departments, if we're going to use
11 that analogy, do so.

12 Anybody else?

13 (No audible response.)

14 CHAIRMAN LEHMAN: I really want to thank you for
15 coming all this way and helping us out today.

16 Finally, I would like to call Dr. Frank Connolly,
17 Associate Professor from American University.

18 MS. SOUTHWICK: Do you have copies of your
19 statement with you?

20 DR. CONNOLLY: I've got a couple more I would be
21 happy to share with you.

22 CHAIRMAN LEHMAN: We might be able to cover
23 everybody here. I know that Dr. Connolly has worked a lot

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1 with the EDUCOM, the consortium of colleges and universities,
2 dealing with software and copyright related ethics problems.

3 TESTIMONY BY FRANK W. CONNOLLY, Ph.D.

4 DR. CONNOLLY: Thank you, Secretary Lehman. My
5 name is Frank Connolly. I'm an Associate Professor with
6 Information Systems at American University here in
7 Washington, D.C. I want to thank the members of the Working
8 Group for the opportunity to appear at today's hearing in
9 order to express my concerns regarding intellectual property
10 and the NII.

11 I apologize for keeping you overtime since the
12 agenda clearly states that I'm not on it.

13 Since 1988 I've been actively involved with issues
14 associated with intellectual property, particularly as they
15 relate to education. I've worked closely with EDUCOM, as
16 Secretary Lehman mentioned, and with AAHE to develop several
17 ethics related initiatives. At present I had a project
18 seeking wide adoption and discussion of a bill of rights and
19 responsibilities for the electronic learners.

20 The statement is intended as a model for schools
21 and colleges proposing the rights and responsibilities for
22 individuals and institutions regarding computers and computer
23 networks. A copy of the bill is included in the materials I

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1 submitted to you. And I'll be pleased to discuss it with you
2 if you would like.

3 The focus of my testimony today, however, is on the
4 effects of possible controls placed on NII resources. There
5 is no doubt as to the impact the NII will have on access to
6 information and entertainment products. In addition, the NII
7 holds the potential to significantly improve the
8 accessibility and quality of education in this country. It
9 is this educational facet that I wish to bring to your
10 attention and consideration by the Working Group.

11 The announcement for this hearing published in the
12 Federal Register read in part, "the commercial viability of
13 the NII hinges not only upon effectively promoting and
14 encouraging the use of the NII by all types of users, but
15 also on implementing standards and policies for the NII in a
16 manner that assures that the owners of products disseminated
17 through the NII retain sufficient control over those products
18 to prevent unauthorized use."

19 The statement succinctly presents the conflicting
20 objectives that I think the group faces: promoting
21 encouraging use of the NII on the one hand and controlling
22 use of the NII on the other hand in order to protect the
23 interest of owners of products disseminated through it. The

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1 one seeks to foster open and ready access to resources while
2 the other seeks to measure and limit that access.

3 In considering alternatives for protecting the
4 interests of creators or rights holders, you must also
5 continually weigh the needs of learners and educators within
6 the community of users. Creators and rights holders need
7 protection to ensure their continued effort and to guarantee
8 their viability and success of the information industry in
9 the United States. This is an important economically
10 critical factor in your deliberations. However, I would
11 propose it is not the highest priority for our society.

12 To achieve it's potential, the NII will require
13 citizens who understand the capabilities and limitations of
14 electronic highways and have facility in navigating the
15 intricate highways and byways that it will provide. For this
16 to be realized, students and teachers need to access the
17 network and its resources. To pave the highway up to the
18 schoolhouse and classrooms of the country and then place
19 protectionist roadblocks to using text, images, news clips,
20 musical scores and databases the NII offers, undermines one
21 of its critical objectives.

22 Regulations you propose must encourage access to
23 and use of the teaching and learning materials of the NII by

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1 exempting such materials from controls that are appropriate
2 in non-educational settings. By this I mean, I think we
3 should be extending the concept of fair use to the NII that
4 is necessary to significantly improve the manner and quality
5 of education.

6 In print context, fair use makes limited resources
7 available without permission under specific conditions. The
8 spirit of fair use needs to be extended to and promulgated in
9 the NII. Materials for teaching and learning that would
10 otherwise be protected and controlled must be readily and
11 freely available for non-profit educational purposes without
12 the need for time consuming procedures to identify rights
13 holders, request permission to use the material, and then
14 negotiate an agreement that requires review by administrative
15 and legal staffs of one's institution.

16 The very students the NII can benefit most will be
17 hurt if something similar to fair use is not available.
18 Protecting the financial interests of creators and
19 distributors at the expense of teachers and learners will
20 broaden the chasm between have and have-not colleges and
21 schools.

22 The resources the NII will make available to
23 enhance teaching and learning are too valuable for

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1 intellectual property protection to restrict their reasonable
2 use for instruction in our classrooms.

3 One objective for the Working Group, again quoting,
4 "effectively promoting and encouraging the use of the NII."
5 I would propose a parallel objective regarding fair use
6 resources on the NII. You ought to strive for policies,
7 procedures, and educational materials effectively promoting
8 and encouraging fair use on the NII. Electronic fair use
9 policy for the National Information Infrastructure should
10 take a proactive stance clearly delineating what is and what
11 is not covered by fair use and encouraging educators and
12 students to take full advantage of those resources.

13 An electronic fair use policy should make resources
14 readily available for non-profit educational purposes. It
15 should be clearly stated and delineated in statements
16 directed to educational institutions. It should provide
17 clear guidelines for determining the limits of fair use for
18 digitized materials in all media. It should encourage and
19 foster the use of materials in education, not just allow it.
20 And it should be widely publicized to educators.

21 In addition to fair use provisions, your
22 recommendations should propose procedures and practices that
23 facilitate the process of gaining permission from rights

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1 holders when that, too, is necessary. Working through the
2 maze of distributors, publishers, and collaborating authors
3 and creators will continue to be a significant and time-
4 consuming hassle. Rights holders of material on the NII need
5 to be clearly identified and facilities for communicating
6 with them to request permission for their use need to be
7 available.

8 Although permission services are springing up to
9 help ease the "administrivia" of locating rights holders and
10 gaining permission to use their material, these are of
11 limited benefit to many higher education institutions and to
12 most schools. Commercial firms, large research institutions
13 and well-endowed colleges may be able to take advantage of
14 these service firms, but public school teachers and faculty
15 at thousands of smaller colleges have no budget to pay for
16 such services.

17 With or without permission services, bureaucratic
18 requirements and convoluted permission procedures on the NII
19 will counter the objective of promoting and encouraging the
20 use of the NII by all types of users and it will
21 significantly limit its educational potential.

22 The intent of intellectual property law is to
23 advance science and knowledge. To advance science and

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1 knowledge in the 21st Century means that teachers and
2 learners, from kindergarten through graduate school, need
3 fair use access to appropriate uses on the National
4 Information Infrastructure. And last, in the name of
5 rewarding creating and authors it would be short-sighted and
6 counter to the long-term interest of our society and the
7 economy.

8 I thank you for this opportunity to express my
9 concerns to the Working Group. Thank you.

10 CHAIRMAN LEHMAN: Thank you very much, Dr.
11 Connolly. Some of the aspects of your bill of rights could
12 be included, I suppose, in Dr. Brotz's driver's license test.

13 DR. CONNOLLY: I think that's possible. In fact,
14 there are school systems that actually have driver's license
15 procedures for it. I think Montgomery County is one of the
16 school systems that has instituted a program where you have
17 to get a driver's license before you can get access to the
18 school's computers.

19 CHAIRMAN LEHMAN: That's useful information. I
20 didn't know that. Right in our back yard. There are
21 obviously great minds thinking alike around the world.

22 DR. CONNOLLY: I wish I was one of them.

23 CHAIRMAN LEHMAN: I think so. Are there any

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1 questions for Dr. Connolly?

2 (No audible response.)

3 CHAIRMAN LEHMAN: I guess not. Thank you very much
4 for joining us.

5 DR. CONNOLLY: Thank you.

6 CLOSING REMARKS

7 CHAIRMAN LEHMAN: My agenda calls for closing
8 remarks. There won't be many other than to say that over
9 many years I've sat through many hearings having to do with
10 intellectual property issues. And I must say this is
11 actually one of the more pleasant ones because by and large
12 there were not violently opposed groups causing us to have to
13 make very hard decisions, with the possible exception of the
14 possible dispute over performance rights and sound recordings
15 where we heard vastly different views from broadcasting
16 interests and sound recording and motion picture interests,
17 as is to be expected.

18 Otherwise, this was of the more sort of harmonious
19 discussions of intellectual property that I've been through
20 in the last 20 years. So I want to thank everybody, many of
21 you for coming long distances, many of you for having the
22 interest to sit here to the bitter end, which was quite
23 remarkable, and all of you for helping us try to provide a

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1 better intellectual property foundation for our new National
2 Information Infrastructure.

3 Thanks very much for coming today.

4 Just one final point, Terri Southwick here to my
5 right, is the contact person. Her number is 703-305-9300.
6 If you need to follow-up, I don't have her Internet number
7 committed to memory, but I think it would be a nice thing if
8 those who submitted testimony could submit it in disk format
9 so that we could try to put together a digitized version of
10 this that would be available on the Internet. Also, we're
11 going to try make that available, also, the court reporter's
12 transcript as well.

13 Any follow-up information or whatever that you
14 have, it's in the notice, but you can also call Terri
15 Southwick about it. Thanks.

16 (Whereupon, at 4:05 p.m. the public hearing in the
17 above-entitled matter was concluded.)

18

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