THE WIPO COPYRIGHT TREATIES IMPLEMENTATION ACT

HEARING

BEFORE THE

SUBCOMMITTEE ON TELECOMMUNICATIONS, TRADE, AND CONSUMER PROTECTION

OF THE

COMMITTEE ON COMMERCE HOUSE OF REPRESENTATIVES

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FRIDAY, JUNE 5, 1998

HOUSE OF REPRESENTATIVES,
COMMITTEE ON COMMERCE,
SUBCOMMITTEE ON TELECOMMUNICATIONS,
TRADE, AND CONSUMER PROTECTION,
Washington, DC.

The subcommittee met, pursuant to notice, at 10 a.m., in room 2123, Rayburn House Office Building, Hon. W.J. "Billy" Tauzin (chairman) presiding.

Members present: Representatives Tauzin, Oxley, Schaefer, Stearns, Klug, Deal, White, Rogan, Shimkus, Bliley (ex officio), Markey, Boucher, Gordon, Sawyer, Eshoo, Klink, Wynn, McCarthy, and Dingell (ex officio),

Staff present: Justin Lilley, majority counsel; Mike O'Rielly, legislative analyst; Cliff Riccio, legislative clerk; and Andy Levin, minority counsel.

Mr. TAUZIN. The committee will please come to order. We will ask our guests to take the seats so we can get organized.

Good morning. Article I, Section 8 of the Constitution provides: "Congress shall have power...to promote the progress of science and useful arts, by securing for limited times to authors and inventors exclusive right to their respective writings and discoveries." Article I, Section 8 also provides that Congress shall have the right to regulate commerce among the foreign nations and the several states. And that is why we are here today, to strike a balance between these two constitutional directives.

In the Information Age, the concept of copyright and intellectual property law is a keystone to developing electronic commerce. Just as oil and gas law defined the growth of that industry in that age, so too must intellectual property law keep pace with the technological developments of today, such as the Internet and the electronic commerce that is so rapidly expanding. Indeed, as technology changes and converges, the law must do so as well, and that is the foundation and core mission of the WIPO treaties.

The subcommittee meets this morning to take testimony relating to H.R. 2281, the WIPO Copyright Treaties Implementation Act. This bill was favorably reported by the House Judiciary Committee by voice vote just a few weeks ago. In addition, the Senate has also considered and overwhelmingly approved a similar bill by a vote of 99 to nothing. What an extraordinary act by the other body. These actions indicate the policy goals of the bill are generally sound.

The principle of copyright is buried deep within the moral fiber of American society. Just as it is wrong to steal the physical property of another, it is equally wrong to steal the creative ideas of another without providing acknowledgment and, in most instances, remuneration to the creator of the work. The copyright is basically a code of conduct that prevents users from stealing the creative property of others. Those whose work is often tied to ideas and concepts is also included within tangible goods, such as consumer products.

Historically, copyright law has provided creators of copyright work with the exclusive right to distribute their own work. One exception to this general principle is the doctrine of fair use, which recognizes there is a benefit to allowing the public the use of copyrighted work under certain circumstances. This unique balance has worked well in the past and should in fact be the basis for policy into the future digital age. As we move this bill, we must maintain indeed this delicate balance between the competing sides of this debate to ensure neither flourishes at the other's expense. And if this bill favors the copyright community, consumers, manufacturers, users of copyright work, and society as a whole may in fact suffer. Similarly, if the bill favors the users of copyright work, then creativity might be stiffed in some respect. Today we start the committee's examination as to whether the bill draws this necessary balance into policy.

The timing of the debate before us, of course, is important. As the committee continues its effort to examine issues relative to electronic commerce, examining how copyright law interacts with electronic commerce is an important facet of that discussion. As electronic commerce develops, we as policymakers must indeed establish clear policy for consumers, network and hardware providers, and copyright owners which protects the integrity and value of electronic commerce. Today we will consider and debate the worthiness of legislation to enact additional copyright law relative to electronic communications in networks.

Accordingly, let me take a moment to thank Chairman Bliley and his staff for their efforts to ensure that the Commerce Committee indeed had a chance to take up this bill in this hearing today. There are particular reasons why this committee is rightly suited to consider the issues before us. First, we are charged by the House, and by the House rules, with jurisdiction over telecommunication matters and we have an obligation to do so and we intend to make sure that duty is carried out. More importantly, the members of the Commerce Committee and the members of this subcommittee, have unique expertise on technology issues which is unparalleled in the House or other committees. Legislation of this nature indeed should be considered by members of this committee.

I want to welcome the extraordinary panel we assembled this morning. Our panels seem to be getting bigger and bigger and bigger as the electronic industry and the whole technology and communications expands, and I want to thank you for agreeing to attend in such a large measure for us to educate us on this treaty.

Let me also mention something that was in the news today that I think will be of particular interest to all the members of the subcommittee. Apparently, 17-year-old hackers were able to com-

promise the integrity of the Indian nuclear science program, indicating, again, how critical it is that security in the world of the Internet and in commerce and in matters as sensitive as nuclear programs are critical, and, again, indicating why the work of this committee, in promoting adequate encryption and security and privacy in the exploding area of Internet services is a critical work for this Congress, and I wanted to call that to the members' attention because it again indicates how small the community of this world has become with the explosion of the Internet onto the global surface.

Let me again thank you all for being a part of this learning experience for us, and the Chair will now yield to—Mr. Markey is not here. I will yield to Mr. Boucher for an opening statement for the minority.

Mr. BOUCHER. Thank you very much, Mr. Chairman. I also want to congratulate Chairman Bliley and his staff for their very excellent and successful effort to make sure that H.R. 2281 received consideration by the Committee on Commerce. And I would like to thank you, Chairman Tauzin, for scheduling the hearing today on a subject that is of great importance to the users of information, from libraries to universities, to individuals and their places of work, and in their homes, and to the manufacturers and users of consumer electronics products.

Let me say at the outset that we all share a deep-seated commitment to protect from piracy the intellectual property rights of American creators of movies, books, records and computer software. No nation on Earth exhibits the creative genius that is found here in the United States, and these works contribute richly to our domestic economy and to our balance of trade.

There is no debate about the need to afford adequate protection from theft to creative works. I would also acknowledge that in the digital network environment these works are at greater risk than before. Digital reproduction enables copying without degradation, and the Internet enables the rapid dissemination of information from a single source to numerous recipients. And so I think it is appropriate that new legislation be adopted to address these new concerns. And I share the desire of copyright owners to have those protections put in place. But it is essential that we legislate these new protections for copyright owners in a manner that is narrowly targeted to achieve the intended purpose and in a manner that does not undermine traditional fair use principles. Nor should we impede the introduction of useful new technology that has multiple uses, some of which could be put to copyright infringing purposes.

Unfortunately, H.R. 2281, as reported from the House Judiciary Committee, does not meet that test. It intrudes greatly upon the established doctrine of fair use, to the detriment of libraries, universities and potentially every American citizen. Its new copyright liability provisions are so broad and so poorly defined that it will hinder the willingness of manufacturers of equipment to introduce much useful new consumer technology. For example, the bill prohibits and imposes felony punishment on any circumvention of a technological protection measure. This provision is truly astonishingly broad. The circumvention does not have to be for the purpose

of infringing a copyright for the prohibitions and the criminal penalties of that provision to apply.

We will hear from witnesses this morning some of the many unacceptable consequences that arise from this poorly drafted provision.

In my group of proposed amendments, there is a simple remedy that would only punish circumvention when the circumvention occurs for the purpose of infringing a copyright. That amendment would adequately and fully protect the interests of the copyright owner, and at the same time, allow circumventions to take place where today they occur for legitimate uses and occur under the provisions of today's application of fair use principles.

The bill imposes liability on the manufacturers and sellers of consumer products, which can make copies, if it is determined that their primary intent was for the purpose of copyright infringement. Manufacturers will not know in advance of the litigation how their intent ultimately will be judged when their products have multiple potential uses. Even though their actual intent would be for legitimate uses of their technology, their willingness to introduce the new devices will be chilled by the potential of broad copyright liability that is imposed in a manner that is not knowable at the time that they design and produce and put into the market their new technology.

Another of the amendments that I am suggesting would address that concern by qualifying the primary intent test and by assuring manufacturers that they will not be held to a standard that requires their devices to accommodate what will be hundreds of technological protection measures, many of which will be incompatible with others. And so through the amendment, I am suggesting we would not be requiring manufacturers to do something that is technically impossible, and that is accommodate all of these disparate and internally inconsistent technological protection measures.

My suggested amendments also address user concerns through these approaches, by enabling distance learning to employ digital platforms for data transmission, as well as the closed circuit analog TV platforms that are in use today and that are sanctioned by today's copyright law, making lawful under the copyright law the ephemeral copies of material that are made on a user's computer when that user browses the World Wide Web, by firmly implanting the first sale doctrine into the digital era, by reaffirming the doctrine of fair use, by permitting libraries and other repositories of information to make an appropriate number of archival copies of the works so that education and research can be facilitated.

Mr. Chairman, I very much hope for the subcommittee's favorable consideration of this set of narrowly drawn and well targeted amendments that will achieve the kind of balance that you refer to in your opening statements, and I very much look forward to the testimony of today's witnesses.

Mr. TAUZIN. I thank my friend.

The Chair is now pleased to recognize the chairman of the full committee, the honorable gentleman from Richmond, Virginia, Mr. Bliley.

Chairman BLILEY. Thank you, Mr. Chairman.

In 1948, George Orwell published his now famous novel, 1984. The book told of a society ruled by Big Brother, who appeared into all of our lives through a telescreen. The book's fundamental premise was that technology would ruin democratic society. Today, 50 years after the book's publication, we now know that Orwell was wrong, dead wrong. Technology is a democratizing force. It enriches us, it educates us and it provides equal opportunity. The digital revolution is a liberating force in the Internet; personal computers and other consumer electronics devices are the tools we use to get a view of the world.

Pending before the Committee on Commerce and the subject of today's hearing is one of the most important technology-related bills of the 105th Congress, H.R. 2281, the WIPO implementing legislation. We are here today to discuss, whether, as some argue, this legislation would limit technological innovation and thereby deny us the promise of technology. Copyright holders insist, however, it is only through enactment of this legislation that authors will feel secure in releasing their works into the digital environment, thus facilitating technological innovation.

One can see immediately that this debate will not be settled easily, but we intend to try and I speak for all the members when I say we could use the help of all of the interested parties. I therefore urge all of you to redouble your efforts over the course of the next several weeks to try and resolve these outstanding issues. Otherwise, we will proceed without the benefit a nongovernmental resolution.

Meanwhile, let me say that we need to understand precisely what impact this legislation will have on the, quote, fair use doctrine. Educators and researchers rely on fair use to enrich all of us. Consumers rely on it as well. And I know these groups have concerns with the legislation. We therefore need to explore whether the anti-circumvention provisions reach too broadly, as my colleague from Virginia just pointed out.

In the end, the Commerce Committee will do what it does best, we will add value to this bill. We will be adding value to a familiar subject, telecommunications communications and information technology. The committee is in the process of a wide ranging review of electronic commerce. This hearing is thus very timely, and it is an important component of the committee's inquiry into electronic commerce.

Mr. Chairman, I want to commend you for assembling this distinguished panel of witnesses. I look forward to working with you and the other members of the subcommittee.

Mr. TAUZIN. I thank the chairman.

The Chair is now pleased to recognize the ranking minority member, the gentleman from Michigan, Mr. Dingell, for an opening statement.

Mr. DINGELL. Thank you, Mr. Chairman. I commend you for holding this important hearing today on H.R. 2281, the WIPO Copyright Treaties Implementation Act. Questions involved in this legislation are very intimately involved in the broad jurisdiction of this committee over the general subject of telecommunications, and I am pleased that you are inquiring into this matter.

The United States is a world leader in the creation of intellectual property. Continued leadership of this Nation is important, economically, socially, and culturally, to the people and to the industry of the United States.

Millions of people around the world are entertained by movies, television shows, sound recordings produced in the United States. Millions glean knowledge from books authored in the United States that rely on access to the vast array of information placed on the World Wide Web by American citizens and companies. It is imperative that we do our best to protect these works, and that is why we are here today.

Unfortunately, the right of a creator to realize the benefits of his or her labor and ideas is being undermined by the piracy of these works. Often the pirates reside in foreign countries, such as China, leaving copyright owners little ability to protect themselves against theft of valuable properties. That is why the issues addressed in the World Intellectual Property Organization Copyright Treaty and its implementing legislation, H.R. 2281, are important for us to explore today.

I understand there are concerns associated with this legislation, not the least of which comes from consumer electronic manufacturers. The manufacturers are also concerned that the implementation of the protections and penalties contained in this bill will frighten manufacturers so that innovation is stifled. The definition of the products that would be outlawed by this bill appears to be narrowly broad—rather, narrowly drawn.

The witnesses today will discuss whether the bill truly targets only those manufactured products that have been produced to circumvent protective measures around copyrighted works or whether it will inhibit legitimate technology and innovation which is a matter of very special concern to this committee.

Another concern that has been raised about this bill, particularly by libraries and electronic—rather, and users of electronic services, as well as academic institutions is that the legislation will greatly diminish the availability of the fair use doctrine, currently well established as a part of copyright law. If that were to happen, I believe it would be extremely unfortunate. The concern of these people stems from the prohibition in the bill against a circumvention of protective features that allow access to copyrighted works. This prohibition is a bedrock of copyright law. A producer of a creative work does not need to provide access to his or her work to anyone who wants it free of charge. The copyright owner is allowed, and properly so, to earn a profit from the creative work. Allowing the public to gain access to the works, without necessary authorizing steps, would strip copyright law of its very essence. These proprietary interests need to be protected. But we must at the same time ensure that the public's fundamental right to make fair use of these works is not diminished in any way.

I look forward to hearing from the witnesses today about this important legislation that will implement the WIPO treaty and protect the prosperity of an important segment of American industry. It is my hope we can identify a middle ground that will address all legitimate concerns and that accomplishes the overall goals of encouraging the creation of intellectual property, protecting copy-

righted works, advancing technological progress, and I thank the witnesses for coming today.

Thank you, Mr. Chairman.

Mr. TAUZIN. Thank you, Mr. Dingell.

The Chair is now pleased to recognize the vice chairman of our subcommittee, the gentleman from Ohio, Mr. Oxley, for an opening statement.

Mr. OXLEY. Thank you, Mr. Chairman.

I am pleased the committee is examining this issue. I am sure that today's hearing will be most informative.

The digital revolution presents both possibilities and problems for our motion picture, sound recording and software industries. On the positive side, digital technology is allowing the global distribution of an author's work in nearly perfect quality. Consumers from Findlay, Ohio to Tokyo, Japan are able to download the latest Internet browser software or the latest release from the Spice Girls, if in fact anyone would want to do so.

On the negative side, users of digital works are not limited to just browsing or enjoying the musical wonders of Britain's latest pop sensation. Indeed, the Internet provides questionable characters the ability to download or decode pictures, music or literature without the consent of the author for illegal redistribution, alteration or attribution.

The WIPO treaties approved by the United Nations in December 1996 were a tremendous first step to protect intellectual property. This bill is clearly the next step in that direction.

Thank you again, Mr. Chairman. I yield back the balance of my time.

Mr. TAUZIN. I thank the gentleman.

The Chair is now pleased to recognize the gentleman from Tennessee for an opening statement.

Mr. GORDON. Thank you, Mr. Chairman, for calling this meeting and also for bringing such a really distinguished, well-informed panel before us. I think we are going to find a lot of good information today. I am going to ask my formal remarks be made a part of the record and would like to make just a couple quick observations.

Mr. TAUZIN. Without objection, all formal statements of members will be accepted into the record. Without objection, so ordered.

Mr. GORDON. Thank you, Mr. Chairman.

Like so much of the legislation that faces us today, our challenge, really, is how do you reach down and regulate the bad guys, the very few bad guys, that are causing problems for everyone, without imposing on the rest of, not only the country, but the world. That is the challenge here.

I think everyone agrees that the work of an artist, a writer, someone who is doing computer software, is a product just like that of a physician or a carpenter. Certainly we wouldn't want anyone to go into a carpenter's workshop and steal a chest that they have been working on, just as we wouldn't want someone to steal the product of a writer.

But we have to keep in mind that this theft is more than just the theft of an individual, this really is theft of our whole country because this segment of our economy amounts to $280 billion, 3.5

million individuals, and is our largest area of balance of trade, $60 billion. So when the rest of the world starts stealing from these individuals, they are stealing from us as a Nation. So we all have to be concerned about that.

Now, amazingly, the U.S. Senate has looked at this issue and given us something of a benchmark with, as the chairman said, a 99 to 0 vote. Now that kind of bipartisan vote in the Senate is harder than Dan Burton getting a consensus in his committee, so certainly I think we would think that we have a very good product to start with. And I think that we also have to keep in mind that this is only really the beginning of—this is the ceiling, because once we pass something here, it has to go to the international community. Thirty other countries have to pass it. They are really waiting for us to see what we are going to do. So whatever we do is the ceiling, it is not the floor. It is going to be probably watered down, because when is the last time you heard of anybody in Thibodaux, Louisiana trying to pirate something out of China or Hong Kong. That is not what is happening, it is the rest of the world that is trying to pirate our good products, and so they have an interest in watering this down, we have an interest in protecting our country and our citizens. So, remember, this is the ceiling. It is certainly not the basement.

I know that we are going to have some good discussion later on on my friend from Virginia's thoughts and concerns and his amendments. And he brings up a very legitimate concern, and that is not wanting to impede our future technology growth. And, again, this bill, I think, sets a very good balance.

And let me just, for folks who may not have had a chance to review it, tell you the three-part process before you are held with any kind of liability for any kind of new equipment. It has to, one, be primarily designed or produced for the purpose of circumventing a technology protection measure that effectively controls access to a work protected under this title. Two, it has only limited commercial significant purpose or use, other than to circumvent this technology. And, three, it is marketed by that person or another acting in concert with that person, with the person's knowledge for the use of circumventing. So it is very, very clear that there is not collateral use here. It is someone who is trying to, for their own purposes, steal, they are making something that steals from others.

It is very clear. I think we have a good product here. I look forward to hearing this the rest of this information, and thank you, Mr. Chairman, for bringing this issue before us.

Mr. TAUZIN. I thank my friend from Tennessee.

Let me point out, Louisiana has known pirates in the past. Jean Lafitte comes to mind. But the interest in Thibodaux is mainly keeping Chinese crawfish out.

We have been called to the floor for a 15-minute vote, followed by a 5-minute vote, so those are really the bad guys, calling us to the floor. We are going to have time for one more opening statement.

Mr. Rogan from California was here early, and I want to give him the chance to make an opening statement if he wants to and then we will take a break.

Mr. ROGAN. Mr. Chairman, I am pleased to submit my opening statement for the record.

[The prepared statement of Hon. James E. Rogan follows:]

PREPARED STATEMENT OF HON. JAMES E. ROGAN, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF CALIFORNIA

Without intellectual property, libraries would have no books; theaters would have no films; Broadway would have no plays.

Without the creations of our most creative citizens, radios would have no songs; televisions would have no soaps; and museums would have fewer masterpieces.

The products of the intellect educate, enrich, uplift and entertain. They have immense worth to America's economy and America's soul.

New economic studies show that America's copyright industries contributed 3.65% of the Gross Domestic Produce in 1996. That is $278.4 billion in added value.

If you factor in a growth rate of 4.66 from 1977 to the present for the core copyright industries, which, I might add, is three times the growth rate of the economy during the same time span, the dollar value today is much higher than $278 billion.

Copyright revenues from abroad exceed $60 billion, which makes the industry responsible for the nation's largest trade surplus. It hires people at twice the national average and contributes more to the economy than autos, aircraft or apparel.

Without intellectual property, the pursuit of happiness would be infinitely more difficult. It is our duty and responsibility to protect these goods from those individuals and entities, both foreign and domestic, who would steal them.

In the past, we have done this with vigor and foresight. But with the emergence of the Internet, which Jack Valenti calls a "fascinating, revolutionary presence," we must take the protection to a new and previously unknown level.

The World Intellectual Property Organization treaties assists in this upward leap. The WIPO Copyright Treaties Implementation Act, overwhelmingly approved by the House Judiciary Committee, completes the leap.

If we do this right, the Internet will flourish.

If we do it wrong, everyone involved loses.

It may not be much of a stretch to suggest that the whole world is watching what Congress does with this legislation because many of the WIPO treaty signatories will follow our lead.

I appreciate the participation of today's panelist. I trust the end product of our deliberations will be a product of the intellect. Thank you Mr. Chairman.

Mr. TAUZIN. And I am very pleased to accept it, Mr. Rogan.

What we will do is take a break until 11. That will give us all a chance to vote and come back timely and finish up with any opening statements and hear from a very broad panel about this important bill.

Thank you very much. The committee stands in recess.

[Brief recess.]

Mr. TAUZIN. The subcommittee will please come to order.

The Chair will ask, are there any other members who wish to make an opening statement?

[Additional statements submitted for the record follow:]

PREPARED STATEMENT OF HON. CLIFF STEARNS, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF FLORIDA

Dear Mr. Chairman: I thank you for holding this hearing and I thank our full Commerce Committee Chairman, Mr. Bliley, for requesting a committee referral on this important legislation.

After doing preliminary research on this bill, I have come to the quick understanding of how overwhelmingly important ratifying the additional provisions of the Geneva Conference to the World Intellectual Property Organization have become.

But at the same time, I am greatly interested in making sure there is a proper balance within the implementing legislation. Congress needs to balance the necessary needs of the content community who requires a modern, global copyright infrastructure to be in place, with the legitimate concerns of the manufacturing community who rely on innovation and new products, and with the needs of the educational network of schools and libraries in our nation.

The lifeblood of hi-tech industry is the innovative nature of the business and the capacity to improve upon existing products. I have heard from various businesses and manufacturing groups who feel, without some basic change, that H.R. 2281 will do harm upon their abilities to respond with new products in the digital world.

I understand the Senate equivalent of this bill has already passed, but some necessary changes were made to improve the bill. I also understand that Chairman Howard Coble is willing to make similar changes in order to improve the bill here.

One change I would like to see carried through here is the protection for reverse engineering. My understanding of the software industry is that they rely on the ability to use software programs from other companies to improve upon them, to make the new products interoperable with other products, or to make ancillary products to complement the software they are attempting to improve upon.

If the legislation remains as written, this simple procedure to access others intellectual property in order to create new products could be harmed. I think we need to preserve this reverse engineering ability in this legislation and I am considering offering an amendment when we mark this bill in our Committee.

I am also concerned with allowing cryptographers a similar ability to access encrypted material in order to allow them to design newer and better encrypted products. Therefore, I look forward to the testimony today from both sides of this issue to learn more about the state of intellectual property protection and to learn more about the legislative affects on the industry that this bill will have.

Thank you Mr. Chairman.

PREPARED STATEMENT OF HON. ANNA G. ESHOO, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF CALIFORNIA

Mr. Chairman, today's hearing on H.R. 2281, the bill to implement the WIPO copyright treaty, is about the value of digital products in the new electronic marketplace. The power of the Internet is being harnessed quickly, easily, and cheaply to bring music, writing, pictures and software to people across the world. But it's essential that Congress, as the Constitution so eloquently puts it, "promote the progress of science and useful arts, by securing for limited times to authors and inventors the exclusive right to their respective writings and discoveries." We must keep this basic tenant of our Constitution and demonstrate to the world its importance in a global economy.

A great example of the success of this principle is Silicon Valley, where software that has revolutionized the world is written. Programmers have helped stretch the imagination of the marketplace, producing software that can be downloaded and used for free for a limited time to allow potential buyers to "kick the tires" before buying. The Internet also allows authors, musicians and artists to distribute their works to anyone, anywhere.

This hearing, I hope, will shed light on the need for copyright legislation to preserve producers right to expect that their works will not be stolen here or abroad.

There are technological means that producers can and are using to protect this right. H.R. 2281 seeks to make illegal the tools designed solely to break through these protections for the purpose of stealing those works. This bill seeks to avoid the escalation of measures and countermeasures that, in the end, will greatly increase the cost of products, and limit access to these works.

It's very difficult to write legislation that can keep up with the dynamic and ever changing digital economy. We need to know if libraries, the great repositories of knowledge, will be able to afford to provide students and researchers access to digitally recorded information in an environment where each page, and each view of each page, may cost money. Obviously our libraries must not be reduced to breaking through the necessary copyright protections as the only means to provide free and continual access for students.

The carriers of information, the road builders of the Internet, need to know that their technologies are consistent with any law that is passed. And the makers of the products that allow people to view and store information, need to have clear directions on what they can and cannot produce. It helps no one to slow down innovation due to legislation which has ambiguous definitions.

In closing, I want to thank the Chairman for this opportunity to discuss how modernizing copyright protection is so clearly a linchpin to a vibrant digital economy. Silicon Valley has created new channels and new tools to allow artists and writers to bring their work to new audiences. And it has relied on copyright protection to protect its ability to invest in new technologies. I hope here in Washington we can reach an agreement on creating a gold standard for copyright protection that others countries can follow.

I want to welcome all the witnesses, but particularly Jonathan Callas, Chief Technology Officer of Network Associates from Santa Clara, California and Chris Byrne, Director of Intellectual Property for Silicon Graphics from Mountain View, California.

Mr. TAUZIN. Then the Chair is pleased to recognize our extraordinary panel today. Let me first indicate for the committee that we are considering the House bill which does not, of course, contain either the exceptions or the compromises that are now presently in the Senate bill that indeed was so overwhelmingly approved on the Senate side. And what I will ask all of you as witnesses today to do is to kindly do this for us. No. 1, recognize that this will go on forever, unless we abide by some good ground rules. The ground rules are going to be that your written statement is a part of the record, without objection. That what I would like you to do, as we call upon you to testify, is to not read to us the written statement, but simply to summarize key points of your testimony as much in a conversational matter as you can so that we can hear from all of you and then get some exchange with the membership of the subcommittee.

And then, also, to make it clear, whether your comments are directed at the House bill as it is currently written or whether your comments are directed at the Senate bill after it has been amended with the exception, so we can understand exactly what you are objecting to or what you would like to see changed, in terms of the two drafts that we know about. So that if the problem you want to talk about or the change you want to suggest to us has already been adopted by the Senate, at least tell us that so we can understand where we are relative to the Senate, as well as this House bill.

I am now pleased to welcome you all and we will start with Mr. Marc Rotenberg, the Director of the Electronic Privacy Information Center here in Washington, DC.

Again, let me remind you, please hit the highlights. It will be limited to 5 minutes. At the end of 5 minutes I am going to call a halt to your testimony, so make sure you get it all in so we can hear from everybody, and we will abide strictly by the 5-minute rule.

Mr. Rotenberg, please.

STATEMENTS OF MARC ROTENBERG, DIRECTOR, ELECTRONIC PRIVACY INFORMATION CENTER; GARY J. SHAPIRO, CHAIRMAN, HOME RECORDING RIGHTS COALITION AND, PRESIDENT, THE CONSUMER ELECTRONICS MANUFACTURERS ASSOCIATION; JONATHAN CALLAS, CHIEF TECHNOLOGY OFFICER, NETWORK ASSOCIATES, INC.; CHRIS BYRNE, DIRECTOR, INTELLECTUAL PROPERTY, SILICON GRAPHICS, INC.; ROBERT W. HOLLEYMAN II, PRESIDENT AND CEO, BUSINESS SOFTWARE ALLIANCE; HILARY B. ROSEN, PRESIDENT AND CHIEF EXECUTIVE OFFICER, RECORDING INDUSTRY ASSOCIATION OF AMERICA; WALTER H. HINTON, VICE PRESIDENT, STRATEGY AND MARKETING ENTERPRISE OPERATIONS, STORAGE TECHNOLOGY CORPORATION, ON BEHALF OF THE COMPUTER AND COMMUNICATIONS INDUSTRY ASSOCIATION; GEORGE VRADENBURG, III, SENIOR VICE PRESIDENT AND GENERAL COUNSEL, AMERICA ONLINE, INC., ON BEHALF OF THE AD HOC COPYRIGHT COALITION; STEVEN J. METALITZ, SMITH & METALITZ, L.L.P., ON BEHALF OF MOTION PICTURE ASSOCIATION OF AMERICA; SETH GREENSTEIN, ON BEHALF OF THE DIGITAL MEDIA ASSOCIATION; ROBERT L. OAKLEY, LIBRARY DIRECTOR, GEORGETOWN UNIVERSITY LAW CENTER; AND CHARLES E. PHELPS, PROVOST, UNIVERSITY OF ROCHESTER, ON BEHALF OF ASSOCIATION OF AMERICAN UNIVERSITIES

Mr. ROTENBERG. Thank you very much, Mr. Chairman and members of the committee. I appreciate the opportunity to be here today.

I am going to speak with you briefly about the privacy issue. It has not been central to the debate of the copyright legislation to date, but I think it is a critical issue for you to consider.

As you know, Mr. Chairman, this week the Federal Trade Commission released a report finding few web sites, few Internet sites had adequate privacy policy and is now suggesting legislation. I know that you and other members of the subcommittee have been working on important legislation in this area.

For Internet users, this is a great concern, and I point this out in the context of H.R. 2281 because there are aspects of this bill that could severely change the type of privacy protection that people have enjoyed up until this point in the off-line world and that could also limit the ability for people to protect their own privacy by using some of the new technological means that are coming along to enable greater privacy, and this is the key point.

But if I could just take a step back for a moment and try to explain for you the relationship between privacy and copyright. Traditionally, these two interests have peacefully coexisted. Copyright holders have been compensated for their works, people have received the works, but the readers and the listeners and the viewers of copyrighted works have always enjoyed a high level of privacy.

When you turn on your radio, listen to the news, watch the TV, pick up a book or magazine, the copyright owner is being compensated, that that person doesn't necessarily know who you are. In fact, in most of these settings you are really anonymous. You have the ability today in this country to receive a tremendous

amount of information without ever actually disclosing your identity.

One of the critical concerns of H.R. 2281, in Section 1202, is that it could change this. It could make it possible, in the design of new, what are called copyright management information systems, to track every time you look at a copyrighted work. And I am not just talking about the fact you might be a subscriber to Sports Illustrated because, as you know, copyright is not just about the magazine, it could be about the picture, it could be about the article. The fact you are looking at one advertiser's page and not someone else's is an important issue to think about. And one of the provisions that I think was in H.R. 3048 that may be considered as an amendment that Mr. Boucher has been working on, I think deals with the problem very sensibly. It says in effect we have to be clear that in the design of these systems, we are protecting the ownership interests of copyright holders. We don't want to confuse the privacy issue, we want to keep the personal information separate, and I think that is a very smart way to deal with this problem and I think a lot of people who care about the privacy issue on the Internet would support that effort.

The other big area I want to talk about very briefly concerns circumvention, and there are many experts on this panel who are going to go into this in some detail. I want to tell you a brief story about circumvention and encryption because we spent a lot of time working on encryption. Several years ago you may remember the administration proposed an encryption scheme called Clipper, and when it was proposed, people thought it would be a great new way to keep the computer systems in the Federal Government secure.

I will be 1 minute—30 seconds.

They classified it, someone got access to the algorithm, they went after it, they examined the algorithm, and guess what, Clipper didn't work. If the government had used that encryption scheme to protect the Nation's computing systems, we all would have been at risk. For people who work on technology and protecting privacy, the ability to test these things even when they may be copyrighted is critical.

Thank you, sir.

[The prepared statement of Marc Rotenberg follows:]

PREPARED STATEMENT OF MARC ROTENBERG, DIRECTOR, ELECTRONIC PRIVACY INFORMATION CENTER

My name is Marc Rotenberg. I am the executive director of the Electronic Privacy Information Center, a public interest research organization based in Washington, DC. I am also an adjunct professor at Georgetown University Law Center and senior lecturer at the Washington College of Law. I have taught privacy law for almost ten years and I have been involved in many debates and discussions concerning privacy protection. I appreciate the opportunity to testify today on the WIPO treaty legislation and privacy issues. Privacy is an important concern of Internet users, and sensible copyright legislation should have minimal impact on the privacy interests of Internet users.

I also appreciate the efforts of Chairman Tauzin and Representative Markey and the other members of the Subcommittee in support of privacy protection. The Subcommittee has already shown a strong interest in protecting consumer interests in the online world. Consistent with your earlier efforts on this issue and your ongoing concerns, I believe that certain changes to HR 2281 are crucial to ensure protection of this essential freedom.

PROTECTION OF PRIVACY TODAY

For many years copyright protection and privacy protection have peacefully coexisted. Owners of copyrighted workers could receive compensation for their efforts from users of the works, while those same users could protect their privacy. In the traditional world of print publication and electronic broadcast, recipients of information had a high expectation of privacy. You could read the morning paper, listen to the radio, or watch TV and no one would know that you were doing any of these particular things. This is not simply privacy protection, but the specific ability to withhold disclosure of your identity—the right to remain anonymous. Copyright protection for authors coupled with respect for the privacy of the reader, the viewer, and the listener has produced a vibrant and flourishing information world.

The need to preserve a high level of privacy is all the more important as you consider a new copyright regime that will be in place in the digital world for many years to come. As you may be aware, privacy is now the number one concern of Internet users. A report released this week by the Federal Trade Commission found that few web sites even have privacy policies. People are aware that information is often collected without their knowledge or consent. This is not a new problem. But the WIPO implementing legislation threatens to fundamentally transform many areas of life where privacy is routinely protected.

Apart from privacy as an important personal right, there is also the very real problem that the absence of privacy safeguards in the new on-line world may have significant economic costs. In fact, Commerce Secretary William Daley recently described privacy protection as a "make or break" issue for electronic commerce. Studies by consulting groups and others find that public concern about the loss of privacy contributes to a reluctance to use new online services.

PROBLEMS CREATED BY COPYRIGHT MANAGEMENT INFORMATION

One of the central problems with H.R. 2281 is section 1202 concerning Copyright Management Information. CMI is information related to a digital work. A CMI system could be used appropriateiy to help ensure that copyright holders are able to clearly establish the ownership of a copyrighted work in a digital environment. For example, making sure that a copyright notice could not be removed. But CMI could also be used, inappropriately I believe, to track the activities and interests of users of copyrighted works. In this design, it is not just the information necessary to protect the ownership interests of the copyright holder that is recorded, but also the specific uses of the copyrighted work.

As currently drafted, section 1202 defines the type of information that may be collected in the course of establishing a system for copyright management information. The focus is clearly on protecting ownership, but the section does not preclude the collection of personally identifiable information. As a practical matter, this could mean that every use of a copyrighted work would be linked to a particular user. This would produce far more detailed information about individual preferences, likes and dislikes that was ever collected in the past.

In our current world, the Washington Post might know that your are a subscriber if you have home delivery, though of course you could still pick up the paper at a newsstand. But the world created by this legislation will be very different.

The reason for this is that copyright exists at a much higher level of specificity than the purchase information that might generally be known to businesses. A copyright attaches to a single article, a single photograph, a single piece of music. It is one thing to say that you are a subscriber to Sports Illustrated, quite another to know that you read articles on gymnastics, but not football, look at pictures of swimmers but not boxers.

That the drafters of HR 2281 were aware of the privacy problem in this section is apparent in the language of 1202(c)(6) which makes clear that the Register of Copyrights, who could otherwise issue regulations, may not collect any information regarding the user of the copyrighted work. But this provision is far too narrow, and leaves open the opportunity for virtually anyone other than the Register—including copyright holders, OSPs, and developers of new systems—to hardwire the collection of personal information into the CMI.

It should be clear first that copyright holders have no special claim on what you or I wish to read, watch, or hear. Copyright law has never established a right to know the identity of a user of a copyrighted work. Where identity has been disclosed, it is generally pursuant to a licensing scheme (ASCAP) or some secondary purpose (shipping a product) and not federal legislation. It may also be necessary to determine the identity of a user of a work to establish infringement. But there is no general right of a copyright owner to know the identity of the user. The CMI provision, if left unchanged, could radically alter this fundamental arrangement.

I believe many others are well aware of this problem. Bruce Lehman made clear that CMI should not include tracking or usage information in testimony before the House Judiciary Committee. He said, "It would be wholly inconsistent with the purpose and construction of this bill to include tracking and usage information within the definition of CMI."]

To create databases that would record each person's use of copyrighted works would be to establish the most intrusive and far-reaching data collection systems ever conceived. We have seen similar proposals to track users private communications. The Administration tried, by means of the Clipper scheme, to establish an unbreakable technique to track all communications in the digital world. No proposal has been more widely criticized on the Internet. Even the Administration conceded that Clipper was ultimately a failure.

It is not enough to note the special circumstances when users may be required to defeat copyright management schemes to further important ends, it is necessary to ask whether it is appropriate and fair for copyright holders to demand disclosure of one's identity as an additional cost of gaining access to a copyrighted work.

If this issue is unresolved, then the other provisions of 1202, notably subsections (a) and (b), become problematic. I would agree for example, that a user does not generally have the right to alter copyright management information pertaining to the owner of the work. But if the CMI also includes information about the individual, how could we say presumptively that he could not alter it, if it was for example, inaccurate, incomplete, or out of date. In such a setting the copyright interest would always trump the privacy interests. That can't be right and it certainly isn't necessary to achieve the purpose of section 1202.

I believe that a very clear line must be drawn between the information that is necessary to establish the ownership of copyrighted works and the very different information relating to one's personal activities and private preferences. Without the ability to defeat unreasonable claims on users identity, individuals will face a harsh choice: sacrifice privacy and receive information or protect privacy and be cut off from information world. There is nothing in the technology or our legal tradition that requires this result.

There is a possible solution. Section 1202 of the Boucher-Campbell measure treats privacy issues more directly and more sensibly. It explicitly excludes from the definition of copyright management systems any personally identifiable information relating to the user of the work ("including but not limited to the name, account, address or other contact information of or pertaining to the user.") [new section 1202] In this manner it avoids the very serious problems that could arise if 1202 is left in its current form.

The attempt by the Senate to address privacy concerns through section 1205, while well intended, will simply not do the job. A sweeping new data collection system—which is the essence of CMIs—must make clear how personal information is to be protected. Section 1205 fails to establish the privacy rights that are necessary to protect the information that could be collected as a result of passage of this bill. In effect, it recognizes the problem, but proposes no solution.

If this is not clarified, then it is necessary before any copyright management scheme is enacted into law, to establish a legal right and the technical means to obtain information anonymously. Then it is necessary to make clear the privacy safeguards, established by statutory provisions similar to those found elsewhere, that will apply when personally identifiable information is obtained.

THE ISSUE WITH COOKIES

Several of the sponsors of the Senate measure have expressed concern about the treatment of cookies. The issue is this: could a copyright owner use a particular feature of the Internet protocols to log the activities of a user, by placing a small file on the user's disk, and effectively by means of this Act prevent the user from disabling the file.

The Senate wrestled with this problem. Some expressed concern about the potential privacy problems. Others said that there was in fact no problem. In the end, I think the Senate may have misunderstood the cookies problem. The Senate focused on the problems that could result if the cookie was encrypted or special copyright interest attached. Certain provisions in the bill suggested that defeating such "hardened" cookies would not be allowed.

This could well be a problem in the near future. But the much clearer problem today is found section 1201(a)(1) which says simply that "No person shall circumvent a technological protection measure that effectively controls access to a work protected under this title." This prohibition coupled with the definitions of cir-

cumvention and technological protection mechanism would produce many unintended consequences.

For example, a cookie can be used to control access to a web site. This is done with many web sites today to make it easier for people to use web sites without having to remember lots of passwords. For example, the New York Times web site requires a password. The first time I went to the site, I registered and was given a password. The New York Times stored some information in a file on my computer, called the "cookie" file, so that when I returned to the New York Times web site my password would be automatically uploaded and I could get access to the site.

Now, what happens if I decide to delete the cookie file that the New York Times has placed on my computer? Perhaps I don't want others who use my computer to have access to the New York Times web site through my password. Perhaps I am concerned that the cookie might also contain some information about my interests that I don't think the New York Times should be collecting about me. Under the terms of HR 2281 as currently drafted, I believe it could be argued that this it is an unlawful circumvention of a technological protection system for me to remove this cookie from my own computer.

This result is reached for several reasons. First, the definition of technological protection mechanism is very broad. Second, the definition of circumvention is very broad. The language is such that it covers far more than extensive decrypting, reverse engineering, or cracking. Under the current language, simply "removing" or "deactivating" a bit of software would be considered circumvention. And, of course, the technology is changing rapidly.

It is very important to narrow the language in sections 1201 (a)(1), 1201 (a)(3)(A), and 1201 (a)(3)(B) to avoid this result. Here again, HR 3048 offers a better approach by making clear that the circumvention conduct must be done for the "purpose of facilitating or engaging in an act of infringement," of a technological measure used by the copyright owner "to preclude or limit reproduction of work." Section 1201(a) in HR 3048 makes much clearer what the prohibited conduct is and avoids the many unintended consequences that would likely result from adoption of the current 1201 (a) language.

IDENTIFICATION OF DIRECT INFRINGER

There is also a significant privacy problem in the way HR 2281 treats the problem of investigating infringement. The industry agreement to resolve the problem of OSP liability has, unfortunately, created new privacy risks for users.

The provision on "Identification of Direct Infringer" (Proposed Section 512(g) would grant broad new rights to obtain access to information about the activities of Internet users prior to any showing of actual infringement. While this provision may shield the OSPs from liability, it opens the door to new actions against users whether or not they are in fact engaging in infringing uses of copyrighted works.

Section 512 lacks adequate safeguards to ensure that inaccurate, incomplete, or outdated information does not result in improper or unreasonable intrusions on privacy. It grants too much latitude to those who might pursue fishing expeditions. While the declaration process is useful, there are no means set out to ensure that this process is not abused. Particularly in circumstances involving competitors or critics, it is not difficult to imagine that copyright holders might use their rights under 512(g) to investigate and gather information about the activities of others that would not generally be available in the off-line world.

Procedural safeguards should be established that would require a threshold showing of the likelihood of success on the merits, the opportunity for motion to oppose, and judicial review. At the very least, notice should be provided by the OSP to the subscriber within some reasonable time after information about the subscriber is disclosed to a third party. This perhaps the surest guarantee that this new authority is not abused.

ABOUT ENCRYPTION

One of the central technologies to protect privacy today is encryption. It is the means to hide information and also to authenticate information. Encryption research is proceeding at a fast pace, driven by the need to enable a secure environment for data transmission and to promote electronic commerce. We have a particular interest in the privacy community in ensuring that techniques to promote confidentiality and to protect identity are robust and secure.

It is central to the development of encryption, as it is to other scientific enterprises, that basic research be open, unrestricted, and subject to comment and criticism. An excellent example of the problem with the alternative approach was presented when the government announced the Clipper encryption scheme that would

have been a standard across the federal government to protect the security of government information. A cryptography expert was able to show that the scheme could be easily broken. Efforts to restrict this testing that may even raise concerns about national security—attacking the governments own codes—could have devastating impact on privacy and network security.

I believe that 1201 takes the wrong approach in trying to limit the use of encryption techniques. The provision casts a long shadow over efforts to promote interoperatibility, to encourage innovation, and to strengthen network security. The simple problem is the attempt to criminalize a new technique rather than a bad act.

I urge you to narrow the language in 1201 to focus on the bad act and not the technology.

LAW ENFORCEMENT ACCESS

Mr. Chairman, I am concerned also about the current language in 1201(f) and 1202(d) that grants sweeping authority to agents of the government to engage in acts that would otherwise be prohibited by this measure. I appreciate that there are important circumstances necessary to the protection of the public and the investigation of crime that requires law enforcement officials to engage in certain activities. But these exceptions, when they are incorporated in law, are typically done by reference to explicit statutory authority and with the recognition that our Constitutional form of government places ill between the investigatory authority of the government and the people an independent judiciary that has the responsibility to assess the claims of the government against the privacy interests of the citizenry.

This bill contemplates many circumstances where personally identifiable information will be collected and potentially disclosed. In the investigation of copyright infringement, for example, it is clearly the case that information about individuals could be obtained by law enforcement. Where such a search by a government agent occurs, it is appropriate and necessary to establish some form of judicial review to ensure that the search is not improper. Many of our modern privacy laws, dealing with everything from cable subscriber records to electronic mail, recognize that there are circumstances where law enforcement will need to get access to similar personal information to investigate allegations of wrongdoing. But all of these laws establish a requirement for a warrant, subpoena, or similar lawful process, to ensure that the interests of the individual are preserved.

No such language is found in HR. 2281. I believe this a serious omission and I would strongly urge the committee to revise 1202(f) and 1202(d) so as to make clear that when personal information in the possession of a third party is sought by an agent of the government, a lawful warrant, subpoena, or other lawful process is first obtained. It is not sufficient to say that the activity is "lawfully authorized." To be consistent with the core Fourth Amendment principle, that authorization must be pursuant to a judicial determination.

On this particular point, I am afraid that the Senate measure goes even further in the wrong direction. So much so, in fact, that it even calls into question whether the United States will be complying with its obligations in the WIPO treaty if it permits not only agents of the US government but also "contractors" and "other persons acting at the direction of government officials to engage in acts otherwise prohibited by the Act. I am not aware of such a sweeping exception in any other federal statute. It goes far beyond the "order public" doctrine in international law that recognizes the special concerns of law enforcement.

Again, H.R. 3048 takes a more sensible approach. Relying on existing legal doctrines that permit law enforcement officials to engage in acts necessary to investigate crime and protect the public, it creates no new exemption that could undermine existing Fourth Amendment safeguards or even raise questions about compliance with the WIPO Treaty.

ADDITIONAL PRIVACY ISSUE—PROTECTION OF ANONYMITY

Addressing privacy concerns in legislation is often a defensive measure and raises the concern whether law can ever keep up with technology. I'd like to suggest that there may be a way to get out ahead of the privacy issue with the legislation with a proactive provision that could enable electronic commerce and protect privacy interests. The Subcommittee should consider a new provision that would explicitly guarantee the right of individuals to receive information without disclosure of identity—a right of anonymity.

Such a provision would follow well established practices in the off-line world where it is possible for individuals to routinely buy books in bookstores, read newspapers at newsstands, and view pictures in museums, without ever disclosing their actual identity. Anonymity has also been central to the growth of the Internet and

the vibrant intellectual traditions of this country. The Supreme Court has also recently affirmed that the right to speak anonymously is protected by the First Amendment.

A similar provision was recently adopted in the German multi-media law and is specifically intended to promote consumer confidence in new on-line services. Other governments, including Canada and the Netherlands are exploring new techniques to promote anonymity because they also believe that this could be one of the best ways to develop long-term solutions to the piracy problem.

I am not proposing any particular product, technical means or government standards. There may be dozens or hundreds of companies that could develop new products and services to enable anonymous payment for digital works and anonymous viewing of information in the on-line world. The critical point is to take this opportunity to encourage the creation of these systems by establishing a right for individuals to gain access to a copyrighted work without being compelled to disclose their actual identity. As long as the copyright holder receives value, I do not see a possible objection.

Such pro-active privacy measures could be the seeds of new privacy safeguards in the on-line world. Short of a legislative right, a study examining the prospects for such opportunities could certainly be pursued by the National Research Council. An earlier report on encryption has been quite useful for policy development. A similar report on means to promote anonymity in the on-line world could be useful.

NEED FOR PRIVACY SAFEGUARDS IN HR 2281

Privacy protection is central to the American tradition. It has long coexisted with copyright, and by practice, has enabled a rich and vigorous of information and ideas. It is particularly important with the development of new information technologies to ensure that privacy is protected.

Congress has recognized the importance of protecting the privacy of one's preferences, particularly in new information services. In 1984 as part of the Cable Act, privacy provisions were incorporated to protect the privacy of subscriber information. The Video Privacy Protection Act of 1988 extended safeguards to customers of video rental stores. Even the Telecommunication Reforms Act of 1996 makes clear the need to protect privacy in this new information world.

The combination of a draconian copyright management regime with an absence of privacy protection enforceable in law, will allow information owners to extract personal information from consumers that would never have been disclosed in the off-line world. It is an unfair choice that no one should have to confront.

As currently drafted, H.R. 2281 will create many privacy problem. But there are ways to address these problems that still respect the interests of the copyrights holders. I have proposed several in my statement. I hope you will give them all full consideration.

The Internet is still in the very early stages of development. There is every opportunity to shape the on-line environment to promote electronic commerce, protect intellectual property and still preserve privacy. There is no reason to enact provisions that will sacrifice this essential freedom.

I appreciate your attention. I will be pleased to answer your questions.

Mr. TAUZIN. Thank you, sir.

Next is Mr. Gary Shapiro, president of Consumer Electronics Manufacturers Association.

Mr. Shapiro.

STATEMENT OF GARY J. SHAPIRO

Mr. SHAPIRO. Thank you very much.

At the outset, I want to make it clear that we actually support passage of legislation to implement the WIPO treaties, and we support you, Mr. Gordon, and we oppose black boxes.

I do represent the manufacturers of consumer electronics products. There are about 1.6 billion in American homes, and our members do not produce black boxes, they produce legitimate products. But we can't support the legislation before this committee, and instead we ask you to support the well-crafted and narrowly drawn

amendments that are being proposed by Congressman Rick Boucher.

And, Mr. Chairman, we greatly appreciate your initiative and that of Chairman Bliley to obtain referral of this legislation because it does provide you with an opportunity to address the problems, and I would like to, in my 5 minutes, identify three problems.

First, this legislation, as well as the Senate legislation, would make designers of new devices, such as computers and VCRs, as well as high definition TV sets and set top boxes responsible for responding to implementing any and all technical anti-copy measures chosen by anyone, any copyright owner. This would chill or even freeze product design innovation.

Now this committee has focused on other legislation affecting our products, electronics products: The V-chip, closed captioning, scanners. Every one of those laws has been very narrowly drafted to focus on a specific aspect of the technology. The challenge we face in this is broad and undefined.

The bill would outlaw certain design choices, even if they are undertaken for good reasons, such as ensuring consumers can actually receive a viewable picture on their new television sets. This legislation is simply a "one size fits all" approach. All electronics products and components would be forced to respond to every technological protection scheme invented.

Third, the bill lacks any definition whatsoever of what is called a technological protection measure. In the interest of brevity, I am going to call that TPM from now on. This bill has no definition of TPM, yet it would punish the device designs for conduct that may be viewed as circumventing such measures. This committee can address the deficiencies.

First, the bill needs a clear provision stating it does not impose a design mandate on products or their components and force them to respond to a TPM, unless it is specifically required by the law.

Second, the bill really means a playability provision. That is, consumers should be able to receive what they pay for, the products and the programs that they are actually buying should be able to play a program. We are very concerned about that as people who sell to the public. If as a result of some TPM a product cannot properly perform the work in an authorized fashion, it ought to be lawful to make product adjustments to give consumers the device and program performance to which they are entitled.

And, third, and significantly, the bill needs a definition of what actually this TPM or technological protection measure is. There is no description, there is not a noun or description defining the term with respect to the bill's coverage of device design. Such bills are not limited to protecting copyrights, such measures, they are not limited to avoiding copyright infringement and they are not limited to technologies that may be reasonably anticipated by our product designs.

That is why today you are hearing from people concerned about privacy, about pornography filters and other parts. We have spent lots of time meeting with the copyright owners and talking about copyright protection technologies for more than a decade. Only a few are worthy of support. For everyone implemented, many are

found not to work or work too well, that is they totally obliterate authorized as well as unauthorized performances.

For example, legislation was once offered and was considered by this committee to require audio recording products to respond to a TPM proposed by the recording industry. It took a year, and this committee's request for a government study, the government came back with a study and it showed that that protection measure, proposed by the recording industry association, would harm the quality of recorded works. You could hear that the music was bad and it was ruining our product and it was ruining the music.

I have a lot more to say, but I am going to summarize by saying we have some specific fixes, and I want to emphasize we are willing to work with the committee. They are very narrow fixes. We are almost there. We buy into the process and we know we are beyond the legislative process, but there are some narrow amendments proposed by Congressman Rick Boucher, which we support.

[The prepared statement of Gary J. Shapiro follows:]

PREPARED STATEMENT OF GARY J. SHAPIRO, ON BEHALF OF THE HOME RECORDING RIGHTS COALITION AND THE CONSUMER ELECTRONICS MANUFACTURERS ASSOCIATION

I. INTRODUCTION AND SUMMARY

I am pleased to appear today on behalf of the Home Recording Rights Coalition (HRRC), of which I am Chairman, and the Consumer Electronics Manufacturers Association (CEMA), which I serve as President.

CEMA is an association sector of the Electronic Industries Alliance (EIA). CEMA represents manufacturers of television and stereo receivers, video and audio recorders and players, personal computers, multimedia devices, and hundreds of other consumer electronics products. Our members represent about 250,000 U.S. manufacturing jobs and about $64 billion in annual sales.

The HRRC was formed in 1981, in response to a Ninth Circuit appellate opinion, and proposed legislation, that would have banned the sale of home recording devices to consumers. Although the Supreme Court reversed that decision and preserved the right to sell home video recorders in its 1984 "Betamax" opinion, in almost every Congress someone has proposed killing off, crippling, or taxing the "golden eggs" from the technology innovation "goose." HRRC has therefore remained active. It includes consumer electronics manufacturers and retailers, consumer organizations, service associations, and others interested in the personal, non-commercial use of consumer electronics recording equipment.

On behalf of both CEMA and HRRC, I want to thank you for asserting jurisdiction over H.R. 2281 and for giving us the opportunity share our concerns about this anti-consumer, anti-technology legislation. The bill before you, H.R. 2281, would impose new regulation on technologies and devices, including consumer electronics and computer products. The subject matter of this bill strikes to the very core of this Subcommittee's long standing concerns with respect to broadcast and cable television, computer technologies, the Internet and electronic commerce. H.R. 2281, as reported by the Judiciary Committee, threatens each and every one of those interests.

Before turning to our concerns with H.R. 2281, let me underscore a few basic points. We have no fundamental objection to ratification of the WIPO treaties or to enactment of appropriate implementing legislation. We support legislative and other efforts to outlaw true "black boxes" that have no legitimate purpose other than to defeat copy protection technologies, in order to infringe copyrighted works.

We support the private efforts that have been on-going for over two years now to bring together the interested companies and industries to develop truly effective, workable copy protection technologies for the digital environment and to find innovative ways to bring those technologies to the marketplace with adequate legal backing. Members of the consumer electronics industry have spent countless hours and very large sums of research and development money to work with the computer and motion picture industries to develop the most advanced technologies and practical approaches and legal documents to support these technologies.

We appreciate the initiative taken by the Chairmen of both this Subcommittee and the full Commerce Committee to obtain the referral of this legislation. I am

here today because I believe that this Subcommittee and the full Committee have an opportunity to provide a badly needed balance to H.R. 2281.

Let me also emphasize our appreciation for the work of Congressman Boucher on this legislation. We have joined with many, many others in supporting his alternative legislation, H.R. 3048, and continue to believe that it would be a preferable way of approaching these issues. We are pleased that nine Members of this Committee have joined as cosponsors of H.R. 3048. Beyond the issues of implementation of the 1996 WIPO treaties, this legislation provides for up-dating the Copyright Act to carry forward concepts that have been relied upon by libraries and education institutions in legitimate uses of analog technologies so that the new digital technologies may be used for the same purposes.

While we have supported alternative approaches to implementation of the WIPO treaties, we recognize where the legislative process is today. Accordingly, we have a small group of concrete proposals to change this legislation in ways that would address the most fundamental concerns that we have with its current form. These proposals are:

(1) addition of a definition of "technological protection measure";
(2) addition of a clear statement that the failure to respond to any particular technological protection measure is not "circumvention"; and
(3) an exemption for product manufacturers and servicers to allow them to mitigate noticeable adverse effects on the ordinary, authorized functioning of products, where such effects are caused by a technological protection measure or copyright management information.

II. GENERAL CONCERNS WITH H.R. 2281

A. H.R. 2281 Is Essentially About Regulation of Technology, Not Copyright

While it may have originated in the Judiciary Committee, this legislation is not really about copyrights. While amending Title 17 of the U.S. Code, the bill does not amend the Copyright Act, and the acts prohibited by its terms are not tied to infringement of copyrights. Though it purports to implement intellectual property-related international accords, it is a bill that will directly affect and, in some significant respects, threaten future technological development and the availability of new consumer products. The core issues addressed by the bill's device regulations—technological innovation, product standards-making, and actual commercial practices—are those that this Subcommittee and Committee deal with all of the time. For this reason, in our view, this Subcommittee ought to play a major substantive role in reformulating this bill.

Quite simply, the bill outlaws products that circumvent "effective technological protection measures." The first of the major conceptual and practical problems in H.R. 2281 as reported out of the House Judiciary Committee (S. 2037, the Senate companion bill has the identical flaw) is that Section 1201(b) utterly lacks a definition of just what are the "technological protection measures" to which a product must respond or that it must implement. The uncertainty that will be created by this lack of definition will chill the introduction of new products and new designs and the ambiguity created by the bill's drafters is, in our view, altogether inappropriate for a federal criminal statute.

Essentially, there are two problems with the new Section 1201. First, it would make designers of new devices, such as computers and VCRs, as well as high definition television sets and set top boxes, responsible for responding to and implementing any and all technical anti-copy measures chosen by anyone who transmits a signal or distributes a program. It would require manufacturers to accommodate in their most advanced consumer products even outdated technological protection measures that would have outlived their usefulness in a competitive environment. These requirements present enormously difficult design challenges for manufacturers and threaten the introduction of new features desired by consumers. It would invite courts to declare new models unlawful based only on their designs, components, and capabilities.

Second, the bill would outlaw certain design choices, even if they are undertaken for entirely legitimate reasons, such as ensuring that consumers can actually receive a viewable picture on their new television sets, can hook up their set top boxes to television sets and expect them to work, or can engage in practices, such as time shifting over-the-air broadcast or other programming—or other fair uses—that have long been permitted under the law.

The bill would toss entirely into the hands of the federal judiciary the question of when devices can be kept from the market by copyright proprietors, without giving the courts any sensible, useful or workable guidelines as to what to do. In short, we would be back to the chaos that existed before the Betamax opinion. But at risk

would be not only new versions of the familiar VCRs and audio recorders, but also all of the computer and telecommunications hardware and software products that have come on the scene in the past two decades, as well as the utility and success of high definition television sets and set top boxes, both of which have been of such interest to this Subcommittee over the past few years.

B. This Legislation Directly Threatens The Design of VCRs and Other Products

Mr. Chairman, I want to be clear about two things. First, contrary to what you may have heard from the proponents of this bill, H.R. 2281, as drafted, directly affects current models of VCRs and other ordinary consumer products. Although proponents of this legislation have repeatedly argued that the bill is not intended to capture VCRs and other general purpose consumer products, when asked directly by Senator John Ashcroft, however, they do not deny that they do, in fact, want to be able to sue manufacturers of such products on the basis of their design and components.

In short, the problem presented by the bill is not that a general purpose VCR or computer might run afoul of standards set out in Section 1201(b). Rather, given the statements of the bill's champions, there are ample reasons to be concerned that a litigant could and would allege that a component or part of the VCR or other multifunction product, either on a stand-alone basis or as integrated in that device, would do so, thereby tying up either the component necessary for the product, the product itself, or both, in protracted litigation.

Second, the essential problem with H.R. 2281 is that its Section 1201 provision is, itself, the "black box." Unless the bill adequately describes its terms and scopes, properly circumscribes the activities and devices that it prohibits and grounds its provisions in existing copyright law and consumer expectations, then it is anyone's guess what is really inside this "box." The proposals we make below are intended, in large part, to address and alleviate this problem.

C. H.R. 2281 Ignores the Balance of Current Copyright Law

1. *Section 1201 Nullifies The "Betamax" Case*—When VCRs were first introduced as consumer products, a lawsuit was filed to keep them off the market. But the U.S. Supreme Court acted with restraint: it ruled that products having any commercially significant non-infringing use may be lawfully sold. This does not legitimize the often cited example of a toaster attached to a "black box." The Supreme Court held that the non-infringing use had to be integral to the purpose of the device and that time-shift home recording is such a lawful use.

Section 1201(b), however, would allow a court to ban a new VCR or computer if a jury should decide that any component or part is designed, used, or marketed for the purpose of failing to respond to any anti-copy measure applied to any signal or program. The device would be banned even though it has commercially significant fair, or otherwise noninfringing, uses under the Copyright Act.

For example, a content owner could use a technological protection measure to encrypt over-the-air or other television programming. Nothing in the legislation would prohibit this result. Thus, to the extent that consumers—and Congress—expect to preserve time-shifting, H.R. 2281 would give movie companies the legal means to frustrate that expectation under the force of law. VCRs, of course, would be rendered largely useless in this circumstance.

Nonetheless, even the motion picture industry has recognized that keeping home VCRs off the market would have been an enormous mistake. Inhibiting consumers' access to television programming and inviting the courts to issue edicts against new and valuable consumer products was bad policy in the 1970s and 1980s and would be worse policy now.

2. *Section 1201 Outlaws Circumvention Without Regard to Copyright Infringement*—Section 1201 goes much further than nullifying the Betamax holding. It does not even require that the "circumvention" be in aid of copyright infringement. Section 1201 outlaws devices that do not meet its vague design standards, without any requirement that the so-called "circumventing" use is a copyright infringement. So, while the fair use rights of librarians, scholars, computer software engineers and others are not attacked directly, they are also effectively nullified because these users will not be able to obtain the devices that allow them to exercise these rights. The measure would deny to technical, scholastic, and other creative users the hardware and software tools necessary to do their work, whether or not that work would infringe any copyright right of any proprietor.

3. *The 1201(d) "Savings Clause" Saves Nothing and Nobody*—Much has been made of the so-called "savings clause," Section 1201(d), which purports to preserve existing user rights, including fair use. This provision is simply irrelevant to the actual damage done by Section 1201. If a device is banned on the basis of its use to

"circumvent" some technological protection measure, the user never gets to make any use of it, fair or otherwise.

Nor does this provision allow "fair use" to be invoked as a defense for a product design that enables fair uses by consumers. Since Sections 1201(a) and (b) establish a new right of proprietors to have devices declared illegal irrespective of their fair uses, Section 1201(d) does nothing whatever to limit the scope or application of these subsections.

III. SPECIFIC PROBLEMS AND PROPOSALS FOR AMENDMENTS

A. Problem: *Lack of a Definition of "Technological Protection Measure"*

Solution: *Insert a Meaningful Definition of "Technological Protection Measure"*

1. *Omission of a Definition of "Technological Protection Measure Threatens Legitimate Consumer Products.*—As I mentioned, the first VCRs and digital audio tape recorders were met with court cases to ban them from the market on copyright grounds. This Subcommittee played an instrumental role in forging an accommodation with respect to digital audio tape recorders, in the form of the Audio Home Recording Act of 1992 ("AHRA"), which identifies the copy protection technology, the Serial Copy Management System, as to which circumvention was made unlawful.

Section 1201 would invite the banning of new generations of such products on the grounds of "circumvention." A device might be declared illegal if it, or even any component or any part of a component, is found to "circumvent" a "technological protection measure." According to Section 1201(b) of the bill, a device may not be sold if it, or any component or part thereof, is found to:

A. be primarily designed or produced,
B. have only limited commercial use other than, OR
C. be marketed by a person or another acting with that person's knowledge, so as to "circumvent" a "technological protection measure."

Unlike the AHRA, which was much clearer in describing the technologies with which manufacturers must comply, Section 1201(b)—the section addressed to making devices, components and parts thereof unlawful—neither defines nor limits the term "technological protection measure." As described below, such an obligation is unreasonably onerous because hardware and software designers would be under an open-ended obligation to comply with any present or future technological marking, alteration, or distortion technology applied to any analog or digital signal. Such technologies might be technically unreasonable, inefficient, costly and unfair to consumers.

The only colorable "definition" of "technological protection measure," in Section 1201(b)(2)(B), reads as if a line has been dropped by the printer. It says, in its entirety (emphasis added):

> "(B) a technological protection measure 'effectively protects a right of a copyright owner under Title 17' if the measure, in the ordinary course of its operation, PREVENTS, RESTRICTS, OR OTHERWISE LIMITS THE EXERCISE OF A RIGHT OF A COPYRIGHT OWNER UNDER TITLE 17."

This is, of course, not a "definition" at all, but rather a statement of the goal that a "technological protection measure" is intended to meet. For an engineer designing a product that may encounter a "technological protection measure," it is of no help at all, since it does not identify the technologies that must be accommodated or what a consumer electronics or computer product must actually do in order to avoid "circumventing" all of the technological protection measures that may be in use at any given time.

2. *Omission of a Suitable Definition Invites Adverse Consequences*—Passing this bill in its present form would mean that computer products, recorders, or accessories would be subject to suit if any component or part thereof could be accused of being included in the device design (A) primarily, (B) substantially, or (C) is marketed by one or more people, so as to "circumvent" any and all present and future technological protection measures. The absence of a meaningful definition of "technological protection measure" in Section 1201(b) means that such a measure can and might be adopted on a unilateral basis, by a single proprietor, or by a single class of copyright owners. This possibility has several adverse consequences that concern us and, we believe, are of concern to this Subcommittee:

First, some future technological protection measures used by some copyright proprietors might, for example—as a technical matter—actually be directly inconsistent with other measures used by other proprietors. In this case, it might well be technically infeasible for a manufacturer to design a product that responds to or implements all such measures.

Second, other measures might, as noted below, cause adverse effects in television monitors, including new high definition television sets. Such effects could not be addressed without modifying either the display device itself or the set top box or other device that communicates with the television set, with such modifications running the risk of violating Section 1201(b).

Third, the requirement to respond to all technological protection measures will freeze technology. Some "protection" measures operate on mere happenstance—known differences in the design of particular products—to produce the desired effect. If a television design has a "fast" synchronization circuit and a VCR a slow one, a "protection" measure can work off this difference so as to "fool" the VCR, but not the TV. But this measure works only so long as the designs of the TV and the VCR remain unchanged. To assure continued response to such a measure, the designs of the TV and the VCR would need to remain frozen.

Is adherence to such a "protection" measure required in the design of VCRs? Conversely, if a designer seeks a way to make a faster, better, less costly device by modifying or entirely eliminating the VCR's circuit in the next generation device, is the manufacturer circumventing under Section 1201(b)(1)(A), (B) or (C)? In short, the bill would make marketplace incentives subservient—in all circumstances—to the threat of liability for a violation of Section 1201.

Fourth, the bill would stick American consumers with products that implement even antiquated technological protection measure, while elsewhere more effective and less obtrusive measures are coming into use. Why should such outmoded technologies enjoy the protection of federal law?

In the absence of any definition of or limit to "technological protection measure," designing products to accommodate all these concerns in order to avoid circumvention may well present an insoluble problem for the device designer. Yet, a manufacturer, to avoid the risk and expense of civil litigation and the threat of federal prosecution, would be faced with the near-impossible burden of designing its products to respond to any and every technological measure used by even a single copyright owner. If it does not design its products to do so, it risks, at a minimum, being hauled into court and then having its purposes or intentions in designing a product become an issue of fact for juries.

It is simply bad regulatory policy for Congress to force manufacturers of entirely legitimate products to have to defend themselves in court over the purposes or uses for their products. Indeed, under the definition-less approach of present Section 1201(b), the more innovative the designer, the more likely it is that his or her company's products will wind up in court. As a prominent member of the computer software industry recently observed, having to enter the marketplace under threat of a lawsuit is like running in a track meet with an anvil around your neck.

One thing we have learned is that we should never make general assumptions about where new product design will go. For example, two years ago, the consumer electronics and motion picture industries worked out a proposed signal "marking" system that would be useful as part of a limited and balanced copy protection technology. We learned, however, that computer designers would be severely constrained if computers were forced to "look" for these particular marks.

We also learned that the analog inputs of computers do not, and cannot easily be made to, respond to a proprietary copy protection technology owned by Macrovision Corporation. Indeed, even the computer board that allows monitors in congressional offices to receive C-SPAN cannot operate without filtering out this copy protection signal. The board is made by a small company on Long Island that could not possibly revise the product to account for such a "technological protection measure." So even where several parties sit down together, with full information and the best faith in the world, they might make assumptions that are not valid across the board. To impose open-ended and unilaterally-imposed design obligations, as this legislation would do, would be to court disaster.

3. *A Definition of "Technological Protection Measure" Would Limit The Adverse Consequences*—Based on our experience, we believe that this Subcommittee can cure this fatal flaw—Section 1201(b)'s failure to define a "technological protection measure"—by adopting a definition that meets real world concerns. There are two ways to accomplish this: either adopt the scrambling/encryption/secure watermark approach proposed by our colleagues from the Information Technology Industry Council (and incorporated in H.R. 3048); or require that, to enjoy the umbrella protection of federal law, a technological protection measure must reflect a consensus among copyright owners, manufacturers of computing products, and consumer electronics companies. Including such a definition in H.R. 2281 would also be wholly consistent with the way in which new technologies are currently developed, that is, through the cooperation of those who create copyrighted works and those of us who make the devices by which such works can be enjoyed by consumers. The second approach

would draw on a similar provision already agreed to in the OSP portions of this legislation.

Either formulation would eschew the possibility of giving federal sanction to unilaterally imposed copy protection measures that designers and manufacturers can easily stumble over and thereby would address one of our fundamental concerns with the bill—that devices would have to be designed to respond to any and every technological protection measure—regardless of the cost or other technical consequences of doing so. (We note that, if the ITI/H.R. 3048 formulation is used, the other changes discussed in this testimony remain particularly critical.)

B. Problem: *The Bill Can Be Read to Require Product Designers to Ensure that Products Respond to Every Technological Protection Measure on the Market.*

Solution: *Include a Clear Statement that the Bill Does Not Require that Products Respond to Any Particular Technological Protection Measure*

1. *Section 1201 Will Put the Courts in Charge of the Design of—and the Legality of Parts and Components Intended for—Integrated, Multipurpose Devices*—The coverage in Section 1201 of "parts and components," coupled with the omission of any adequate definition of "technological protection measure," poses significant problems for both manufacturers of integrated devices and manufacturers of the parts and components themselves. Throughout the legislative process, CEMA/HRRC has been concerned that the overly vague definition of "circumvent" might justify a court concluding that if a component or part in a device failed to have an affirmative response to (as opposed to actively stripping out) a technological measure, then that part or component (or the device as a whole) might be subject to suit and even outlawed. Mr. Chairman, in this regard our concerns are neither hypothetical nor strained.

Today, we are aware of perfectly legitimate devices, such as certain format general purpose VCRs, that do not respond to a particular proprietary copy protection technology of Macrovision. The fact that they do not respond to this measure is not a result of any design intention to circumvent, but simply that the Macrovision technology is predicated on a technological circumstance that is not present in a key component of such VCRs.

The preceding example illustrates our concern that the manufacturer of an integrated device, such as a personal computer, player and VCR, or of accessories, might be required to defend the legitimacy of the design of such device—the inclusion of a particular non-responsive part or component—in court. Why the part or component was selected would inevitably become an issue of fact to be sorted out by courts and juries. Courts would have to decide, after years of fact-finding and argument, whether the selection or function of particular components in the design of a recorder or a personal computer runs afoul of the vague and broad intention and purpose criteria of Section 1201(b)(1), subparts (A), (B), and (C).

These criteria are difficult enough to interpret as they might apply to the devices themselves; to apply them to the selection or function of each and every part and component of a device is nothing less than inviting the courts to design these devices from the ground up. The arbiters of new product design should be consumers, not judges.

Moreover, even if the non-responsive parts and components as integrated into a multifunction device, were immune from attack (because the device, as a whole, is not designed for the purpose of circumvention), those who manufacture such parts and components might themselves be sued. Such a suit might be predicated on the purpose or function of the parts or components prior to the point that they are physically integrated in a general purpose, multifunction product.

If a parts or components manufacturer were sued, it might then be called on to defend its product on a stand-alone basis. And, if a litigant were to succeed in convincing a court to outlaw such parts or components on the basis that their non-response was a form of circumvention that violated Section 1201(b), the manufacturer of the integrated device, such as a VCR or a computer, could well be deprived of parts that are vital for its product. The device manufacturer would then be required to redesign—or exclude new part-dependent features from—its product, all to the detriment of technology and American consumers.

Again, we think that the Subcommittee can play a constructive role in trying to preserve technology and design options for manufacturers and American consumers. We believe that Section 1201(b) should contain a clear statement that products do not need to be designed, or parts or components designed or selected, in order to respond to any and all technological protection measures. (In this regard, we do not believe that Section 1201(c)(3) of S. 2037 is sufficiently clear to alleviate our concerns.) Coupled with an appropriate definition for a technological protection meas-

ure, such a legislative statement would clarify that a device cannot be outlawed simply because it does not respond to a unilaterally imposed copy protection technology.

C. Problem: *Manufacturers and Service Technicians May Be Liable under the Bill If They Modify Products in Order to Mitigate Adverse Effects of Technological Protection Measures on the Ordinary Functioning of the Products*

Solution: *Include an Exemption for Product Manufacturers and Product Servicers to Allow Them to Adjust Products So As to Mitigate Adverse, Noticeable Adverse Effects on the Authorized Performance or Display of Works*

H.R. 2281, as reported by the Judiciary Committee elevates copy protection over all other objectives in designing and using technology. In so doing, it destroys the proper balance between the use of technology for purposes of copy protection and the use of technology to enhance consumers' experience with movies, music and other creative works. We know that consumers buy consumer electronics products for many different purposes, such as watching television programs on a real-time or time-shift basis, playing back movies that they rent or purchase and listening to music that is distributed in prerecorded form, or is broadcast over-the-air or sent through cable or the Internet. Our CEMA member companies design their products in a myriad of ways to include features that allow the American public to enjoy these works.

In making copy protection the "be all and end all" of product design, however, H.R. 2281, in its current form, fails to recognize that product designers, in making their design decisions based on the priority that products must respond to certain technological protection measures and copyright management information schemes, may be constrained in their ability to satisfy the legitimate needs and desires of consumers and that, accordingly, the benefits noted above will simply be lost. Again our concerns are based on our experience.

For example, in the past, certain proprietary Macrovision technologies, which are generated at the output of a VCR or DVD player have caused noticeable artifacts (such as picture distortion) on some television sets; manufacturers of VCRs and television sets have had to design their products to minimize these artifacts in order to forestall anticipated, or to address actual, consumer complaints. In some cases, these problems have been acute and have required CEMA companies to work closely with the technology proprietor to fix the problem.

In another example, in 1987, the Chairman and Ranking Member of this very Subcommittee requested that the National Bureau of Standards evaluate the copy code system, a copy protection measure that had been proposed for use in controlling digital audio home recording. In 1988, NBS found that code was (1) ineffective in preventing unauthorized copying; (2) produced noticeable and audible adverse effects, and (3) was easy to circumvent. As a result of this Subcommittee's initiative and the NBS report, the proposal to require copy code technology was dropped.

H.R. 2281 provides for no such technical evaluation by consumers, by product manufacturers, or any part of the government. If H.R. 2281 had been the law at the time copy code was proposed, manufacturers and service technicians would have been prohibited from making modifications that would have weakened or eliminated the copy control features of these technologies, even if such modifications would have been the only way to restore the proper functioning of the products.

In short, copy protection technologies are not perfect. In the past, experience shows that such technologies have created (or would have created) problems with dissatisfied consumers. We would be surprised if at least one or more future technologies might not give rise to similar concerns. Consumers have paid for a product that they expect to work well, and to bring them the maximum enjoyment that the technology is capable of delivering. H.R. 2281 might prevent manufacturers or servicers from taking targeted actions to address these problems because they would be at risk of a lawsuit for "circumvention" of a technological protection measure or for removal of copyright management information.

Two particular problems may be expected from enactment of Section 1201 and Section 1202. First, manufacturers could be prevented from designing their products to address any widespread, noticeable adverse effects that might be caused by the use of a technological protection measure or the application of copyright management information. Second, where a particular consumer has indicated that a technological protection measures causes noticeable and annoying adverse effects on the authorized display or performance of a work or other problems in viewability or audibility, given the particular combination of products in his or her home, servicers would not be allowed to address those problems without worrying about civil or criminal liability.

CEMA is willing to work with the Subcommittee to craft two narrow provisions that would address these problems. One provision would permit a manufacturer to

design a product or device to mitigate an artifact or other adverse effect in circumstances where the adverse effect is noticeable, frequent and occurs only with respect to an authorized performance or display. The other would permit a person (such as a servicer) to take steps to mitigate a noticeable adverse effect on a particular consumer's product or device when caused by a particular combination of products from the same manufacturer or from two or more manufacturers (a DVD Player, set top box or VCR transmitting a picture to a television set).

Summary: Three Beneficial Basic Changes

In summary, we believe that three basic changes to this bill would go a long way toward making it workable for our industries and consumers.

(1) *Clear language stating that the bill does not mandate that a product respond to any particular technological protection measure,* unless such a response is required by law (such as the Audio Home Recording Act). If the designer simply knew that he or she should not design a product in a way that actively defeats a technological protection measure, that designer would be able to do his or her job without fear of second-guessing by judges and juries years later.

(2) *A definition of "technological protection measure" that works in the real world.* We offer two alternative formulations: the encryption/scrambling/secure watermark approach of H.R. 3048; or a measure developed through a consensus-based process involving all interested parties.

(3) An exemption for both product manufacturers and product servicers to allow them to adjust products so as to mitigate noticeable adverse effects on the authorized performance or display of a work, where such effects are caused by a technological protection measure. Such a narrowly crafted provision need not become a "loophole" in the legislation, but it would allow manufacturers and servicers to provide consumers with the intended benefits of the products legitimately on the marketplace.

We understand that adoption of the three proposals, above, may cause a concern among some in the content community with regard to copy protection available in the analog video marketplace. In order to address this concern, we are prepared to work with this Committee and with members of the content community and the computer industry to develop very specific, technology-based requirements for responses by certain identified devices to particular technologies used in relation to analog motion pictures, to fill in any apparent "gap" in the copy protection coverage that might otherwise exist. Such a requirement must be carefully drafted and must contain protections for consumers to allow the continuation of the common practice of "time-shifting" normal television programming. If that minimal protection is provided to consumers, we believe that a provision can be agreed that would afford substantial protections beyond even those that this legislation would provide in its current form.

IV. CONCLUSION

As stated at the outset, we appreciate the work of the Chairmen of both this Subcommittee and the full Committee in bringing this legislation to this Subcommittee and Committee. We believe that the bill can and will be greatly improved during its consideration by this Committee, and we look forward to working constructively toward that end, so that the WIPO treaties can be implemented this year.

Mr. Chairman, our concerns about this legislation are real and serious. We have not engaged in this legislative battle lightly or out of disrespect for the content community's contribution to society. We have engaged, and will continue to engage, in our efforts on this legislation because it suffers from problems in basic concept and definition. It generates example after example in the way of unintended consequence, as well as some that are intended but misguided. We hope that the Commerce Committee will make the important contribution that is there to be made, by addressing this bill's product regulation approach to add critically necessary definition and focus. We will be pleased to work with the Committee, and with others in the private sector, to improve this legislation in the ways that I have suggested.

Mr. TAUZIN. Jonathan Callas, Chief Technology Officer of Network Associates, Inc.

STATEMENT OF JONATHAN CALLAS

Mr. CALLAS. Thank you, Mr. Chairman, Ranking Member Markey, members of the subcommittee, thank you for this opportunity to appear before you.

I would like to state, first of all, we support the objectives of the bill. We support the protection of intellectual property and we think that, overall, this is a good bill to do it.

However, the serious concern we have is over circumvention itself. The point I would like to make is that cryptographers, in particular, do, as their standard operating procedure, things that would be punishable by 5 years in jail and a $500,000 fine. This includes industry researchers, university researchers, independent consultants. They all would have to know what they were doing that—and do it in such a way that they would not circumvent while they were testing things.

Potentially, this would chill the development of all security systems in the name of protecting security, and this is particularly ironic, especially when we read today about things like people breaking into nuclear development systems in India and the very software that can prevent that sort of thing is potentially prohibited by this.

Network Associates is the 10th largest independent software company. I am mentioning this because we are new. We were formed late last year out of McAfee Associates, Network General, Pretty Good Privacy. We now include Trusted Information Systems. We are the largest vendor of security and management software and, consequently, we have a concern on this.

The concern we have is we need to be able to do research. We need to have a central peer review. This is an adversarial process. People build things. In our case we publish the code, and we put it up so people can test our systems. Other times, there are people who will get something lawfully and then test it to see. It is somewhat similar to crash tests like what is done on automobiles. We take implementation and not merely the design, because there are a number of laws that can appear in the implementation of a security system that have a very good design.

About 20 years ago, there was an embarrassment that happened to a car manufacturer when it turned out that as opposed to having essentially 100,000 different locks on their cars, they had only 11. There is no other way to test this, except to test it.

The other thing that we are pretty much concerned about is that all software is copyrighted, software that you like, software you don't like. A virus is in many ways a derogatory term for a piece of software put on your system that you don't want there, and it needs to be lawful to remove undesirable software; it needs to be lawful for people to uninstall things, that all of these things are potentially circumvented.

We have been talking about some of these potential things and there are people who have thought about some creative things like I am building something for law enforcement, am I now prohibited from doing this.

The Defense Department, years ago, used to specially make their own electronics. Today they buy them off the shelf. Recently, the Defense Department has announced that dealing with encryption, they are going to be buying it off the shelf, and the reason is industry is producing encryption products that are good enough, and we need to test them.

My time is up. Thank you very much.

[The prepared statement of Jonathan Callas follows:]

PREPARED STATEMENT OF JONATHAN CALLAS, CHIEF TECHNOLOGY OFFICER, NETWORK ASSOCIATES, INC.

Chairman Tauzin, Ranking Member Markey, and Members of the Subcommittee, thank you for the opportunity to appear before you today. Network Associates supports the overall objectives of this bill, and would advocate its eventual passage. However, we have a serious concern regarding a key provision of the bill that will interfere with our ability, and that of other security companies, to produce more reliable and secure encryption products.

If I do nothing else in my testimony, I would like to make the following point: Under this bill, for cryptographers to do what today is standard operating procedure in encryption research would be punishable by up to 5 years in jail and a $500,000 fine for the first offense. Therefore, in the name of security this bill would prevent the development of better security products. This chilling of innovation in our industry will necessarily result in the weakening of security systems that are vital to our nation's economy, to law enforcement, to our privacy, and to our national security.

Network Associates, Inc. is the 10th largest independent software company in the world, and is the world's leading provider of software for network security and management. We are also one of only a handful of U.S. companies that produces both encryption products that we sell directly to end users, and encryption technology that we license to customers for use in their own systems and products. Network Associates owns famous name security software companies Pretty Good Privacy and Trusted Information Systems. Our products include McAfee Anti Virus Software, PGP encryption software, and Gauntlet firewalls. The company has about 2200 employees and anticipated revenues of about $800 million in 1998. Customers for these products include a vast majority of the U.S. Fortune 100 companies, well known financial services, aerospace and defense companies. *Our customers also include a wide range of hardware and software companies worldwide that incorporate our technology into their products to ensure their security and protect their intellectual property.* The company employs hundreds of engineers and developers in the United States, many of whom are engaged in cryptographic research and product development.

The Computer and Communications Industry Association is pleased to associate itself with my testimony regarding the effect of the bill before us on encryption research in this country.

Network Associates supports the overall objectives of H.R. 2281, and would benefit from the enhanced intellectual property protections it provides. However, we oppose the current language in Section 1201 of the bill. This provision prohibits virtually any circumvention of technological protection measures that control access to a copyrighted work—regardless of the purpose of such circumvention. It also prohibits the manufacture of software devices used to circumvent such protection measures regardless of the purpose of such circumvention.

H.R. 2281 is very clear on this issue. The bill prohibits circumvention, and the definition of circumvention in the bill as passed by the House Judiciary Committee includes decryption. The bill also prohibits the manufacture of software devices used to circumvent—or decrypt—technological protection measures. If Network Associates cannot decrypt we cannot perform necessary encryption research. And if we don't have access to the software tools to decrypt, we cannot do the necessary research.

So, while the intent of Section 1201 is laudable, the current language is so broad that it would have the presumably unintended consequence of undermining our company's legitimate activities which include continually testing the security of our own products and those of our colleagues. These activities are essential for future product development, improvement and innovation. We also believe strongly that others must be able to test *our* products. As a software developer, I will be the first to admit that I am possibly the least qualified person to correct or test my own creations. Just as a writer needs an editor or proofreader to catch his or her mistakes, software developers need third parties to test their products because often we are blind to our own mistakes.

I would like to talk for a minute about the process of cryptographic testing and research. In order to ensure that a cryptographic system has no weaknesses, either in the cryptography itself or in its application and implementation, it is essential that we continually attempt to break that system. This process can be likened to testing of automobiles for "crashworthiness." In order to determine whether an automobile is safe, it undergoes various tests to determine whether there are weak-

nesses in its structure or components. While these tests may be done internally by the car company itself, they are also often done by third parties to ensure that the tests are thorough, accurate and unbiased.

These third party tests must also occur in cryptography. In fact, the art of testing a "cryptosystem" is inherently an adversarial process—the industry calls an individual who tests a system by attempting to break it "the adversary." This process enables the art and science of cryptography to advance, and has made the U.S. a world leader in cryptographic development and implementation. Our company relies heavily on the testing and tools of third parties, most often private researchers and academics, whose work would very likely be chilled by the provisions of this bill.

I would like to offer some specific examples of how such adversarial research has been used to advance the science of cryptography and ensure the security of existing products on the market. In 1995, cryptographer Paul Kocher developed what is known as timing attack cryptanalysis, a powerful analytic technique for adversarial encryption research that can be used to break cryptographic systems by analyzing the amount of time used to process messages. The attack was discovered through analysis of actual products and ciphers. As a result of Paul publicizing his findings, industry has developed strong countermeasures to ward off this kind of attack. Had Paul been discouraged from publicizing the technique, the attack could have been instead discovered—and kept secret—by criminals attacking electronic payment systems.

Another good example can be found in the recent successful attempt by U.C. Berkeley graduate students to crack the previously secret security system in GSM wireless telephones. Millions of Americans use these telephones on the assumption that they are secure. The publication of the students' findings now allows those individuals to make an informed choice to seek other wireless security products while the system is improved.

Our company recently benefited from an unauthorized third party test of a version of our encryption software program, PGP. It was discovered that, when used in a particular operating system, users' private keys would be stored in a way that compromised the system's security. The company was grateful that the flaw was reported to us, and we immediately acted to correct the problem and improve the product.

It is essential to test technology *as it is applied*—i.e. when it is being used to protect something, because most weaknesses in cryptography occur in its application. When researchers found the flaw in PGP mentioned above, the flaw was in a specific application of the product, not in the cryptographic technology itself. To illustrate, consider if Chrysler made a very secure car lock, but it was found that certain Volkswagen keys could open the locks. The lock may be inherently very strong, but its weakness is found in its application. The only way to discover this weakness is by testing the lock with other keys.

Under the provisions of H.R. 2281, these research and testing activities would only be permitted if the owner of the content protected by the encryption system agrees in advance. It is unrealistic to believe that such permission would be granted because—ironically—content owners do not recognize their interests in encryption research, though they enjoy the benefits of our research and innovation through enhanced protection for their content.

We do not argue that it should be illegal to circumvent technological protection systems for the purpose of stealing intellectual property. However, as cryptographic developers and researchers we need to continually engage in adversarial testing of existing systems to ensure that our security applications—which are used for copyright protection among other users—are sufficiently strong and correctly implemented to resist and deter attacks. I will repeat what I said earlier, to be discouraged from doing so would chill innovation in our industry and result in the ultimate weakening of security systems that are vital to our nation's economy, law enforcement, individual privacy, and our national security.

Again, thank you for the opportunity to appear before you today, and we at Network Associates look forward to working closely with you to improve upon H.R. 2281.

Mr. TAUZIN. Thank you very much.

The Chair is now pleased to welcome Chris Byrne. Mr. Chris Byrne, representing the Information Technology Industry Council.

Mr. Byrne.

STATEMENT OF CHRIS BYRNE

Mr. BYRNE. Thank you and good morning.

My name is Chris Byrne, and in real life I work as the Director of Intellectual Property for Silicon Graphics. I am here today in my role as Chairman of the Intellectual Property Committee of ITI, Information Technology Industry, and it is a real privilege to do so.

ITI represents the Nation's leading information technology companies, everybody from Apple to Xerox and all the letters in between. I know people like to throw out numbers to sort of impress folks with their economic footprint, but ITI's is really remarkable. We did over $400 billion in revenue in 1997 and a substantial portion of our revenue is devoted to R&D, so we are talking about tens of billions of dollars in information technology that are part of companies we represent every year.

I have essentially three short messages I would like to handle today. The first is ITI's belief in the importance of intellectual property and our support for WIPO implementation. We think that is just intuitive. We think it is very important to minimize the danger of digital piracy. At the very least, what we want to do is preserve and hopefully advance upon progress that has already been made in the Senate.

Second, what we would like to do, however, is urge a bit of balance in our approach to this problem, and we would like to rely on the balance that is inherent in Article I, section 8, clause 8, of the United States Constitution, and again the foundation for intellectual property in our United States starts out that the whole purpose is to promote the progress of science and the useful arts. So we want to balance the protection of intellectual property with the need to accommodate, if not in fact promote, our ability to innovate.

And, finally, we have recommendations for a specific language change. The good news is that the modifications that we are suggesting are really somewhat minor modifications, if you will, as opposed to major modifications. And the net of this, I think, will be, you know, what we are going to do ultimately is we are going to keep the lawyers out of the R&D labs. And I don't say that to be funny, it is true. And the cost today of trying to understand, implement and defend a law that is hard to interpret in our industry is enormous. It is a tremendous burden on the cost of innovation, and I think we should do whatever we can to minimize that unnecessary burden, particularly now at the drafting stage.

What are our issues? Essentially what we would want to do, I know some comments have been made earlier, we need a clear definition of a technological protection measure. I am an electrical engineer, a patent attorney, and have been working in the high-tech Silicon Valley industry for the last 10 years. I read these definitions and I kind of scratch my head. I am not sure what they mean. And so I just fear what challenge a Federal district judge without a technical background is going to have when they try to interpret and apply this law.

So I think what we want to do, we want to minimize piracy, we don't want to endanger our ability to innovate. We just need clear definitions. We are talking about a drafting problem.

Second, we like the features in the Senate bill about no mandate in reverse engineering. We want to preserve those with a no mandate provision. We just urge you to put in a clear definition. We

need something unambiguous. This is a very technical subject matter and we want to make sure we comply with this stuff clearly.

Finally, and I appreciate Mr. Gordon's remarks at the outset, in particular, we focused on the three prongs in this test that are going to capture that illegitimate technology and we support that. What we would urge you to do, however, is, again, just be clear in our drafting and our minor modification is change two "ors" to "ands" and you will diminish the danger that you will capture inadvertently in legitimate technology in your search for the illegitimate technology.

The metaphor I used last September—I'm done. I got in trouble with Mr. Frank last year. I don't want to take that chance again.

[The prepared statement of Chris Byrne follows:]

PREPARED STATEMENT OF STATEMENT OF CHRIS BYRNE ON BEHALF OF THE INFORMATION TECHNOLOGY INDUSTRY COUNCIL

I. INTRODUCTION

My name is Chris Byrne. I am the Director of Intellectual Property for Silicon Graphics, the world leader in high performance and visual computing, based in the heart of Silicon Valley. As an electrical engineer, lawyer, and a registered patent attorney, I am responsible for making sure Silicon Graphics' valuable intellectual property is adequately developed and well protected. I am appearing today on behalf of the Information Technology Industry Council ("ITI"), for which I serve as the Chairman of their Intellectual Property Committee.

ITI applauds your efforts, Mr. Chairman, in bringing to bear the collective expertise of this Subcommittee, to examine H.R. 2281, the WIPO Copyright Treaties Implementation Act. As you know, enactment of this legislation, and subsequent ratification of the WIPO Copyright Treaty by the Senate, are crucial steps to ensuring the proper protection of intellectual property in the digital age.

ITI wholeheartedly supports the goal of this legislation to reduce digital piracy, and we intend to offer our support and resources to ensure its enactment. As producers of our own intellectual property, ITI's members believe that strong intellectual property protection is an indispensable element to the expansion of electronic commerce. Additionally, we recognize the formidable challenges of protecting copyrighted materials in the digital age.

However, we are concerned that Section 1201 of H.R. 2281, as currently drafted, will complicate the information technology ("IT") industry's ability to innovate and produce the products and services that make the information infrastructure possible. Today, ITI will present a handful of proposed amendments to H.R. 2281 that would go a long way towards improving the bill as it affects the innovation engine of the IT industry, while still preserving the bill's intended effects of protecting copyright owners from technologies designed to aid infringement.

II. THE CONTRIBUTIONS OF THE IT INDUSTRY

ITI members represent this nation's leading providers of information technology ("IT") products and services. In fact, the United States IT industry is the key to this nation's technological leadership and a primary engine for national economic growth, with the production of computers and semiconductors accounting for 45% of U.S. industrial growth in the past five years. The technology component of America's GNP currently exceeds 10%, and is expected to reach 15-20% by the year 2000. Information technology will soon become America's largest industry, and the one where it leads the rest of the world by the greatest margin.

In 1997, ITI's members had worldwide revenues of over $420 billion and employed more than 1.2 million people in the U.S. Revenues for the broader U.S. IT industry exceeded $747 billion and have grown at over 7% per year since 1986. That level of growth is expected to continue for the foreseeable future, with revenues reaching $1.572 trillion in the year 2007.

The primary engine for this dynamic industry is R&D investment and the resulting innovation. The IT industry is constantly upgrading its products and inventing new ones at such a furious pace that new products are typically considered "obsolete" just 18 months after their introduction. ITI's member companies are respon-

sible for more than 16% of all U.S. industrially funded research and development and over 50% of all information technology research and engineering.

In 1996 the IT industry invested $31.4 billion in research and development—up 6.5% from the previous year. We are consistently at the very top of the list of all companies receiving U.S. patents. In 1996, all of the top 10 U.S. patent earners were IT companies, with over 10,000 patents earned that year.

The IT industry is responsible for some of our economy's most valuable inventions that have improved productivity, efficiency and the quality of life, such as the transistor, integrated circuit, the microprocessor, the personal computer, the workstation, the hand held calculator, computer animation, the Java programming language, the VCR, and the compact disc. And these are only a few of the better-known examples.

Through our investments in research and innovation, we drive the development of technologies that make the Internet possible and that improve the quality of life at all levels. We are the companies that are building the products and providing the services and information content that will make the National and Global Information Infrastructures a reality, including technologies that provide effective protection for digital content.

An additional benefit of this rapid advance in technology is the increasing availability of powerful computing and communication tools to people of all walks of life in facets of their lives never before contemplated. It is significant to note that computers with the power and speed to be called "supercomputers" only a few years ago are now considered virtually obsolete and sold at commodity prices. This trend of increasing capabilities, coupled with continually falling prices, has made the digital revolution accessible to more and more people every year.

III. POTENTIAL IMPACT OF H.R. 2281

ITI acknowledges that the digital revolution presents formidable challenges to copyright holders. In an age where the capability will soon exist for consumers to easily make studio-quality digital copies of full-length motion pictures and audio recordings, these industries face growing challenges to protect their profitability.

In large part, Section 1201 is driven by a recognition on the part of the content industries that technology, as opposed to traditional law enforcement remedies, is increasingly becoming the most effective tool for protection of intellectual property. In an era where every manner of content—movies, software, music, books—is increasingly stored and transmitted in the 1's and 0's of digital language, it is not surprising that these industries have turned to encryption, scrambling and other methods to protect their products from unauthorized use and reproduction.

ITI fully supports and encourages this trend. Even the casual observer can quickly deduce that the IT industry and the content industries enjoy a truly symbiotic relationship with one another. Our industry's success is built on the creation of IT products with ever greater capabilities to deliver the content industries' products. It is historically compelling that the birth place of Silicon Valley in Palo Alto, California is the garage where Dave Packard and Bill Hewlett made their first product in 1938: an audio oscillator which they sold to Walt Disney to be used in the making of the animated movie Fantasia. Hence, the true engine of progress in the information technology industry is the innovation cycle itself; not any one segment of the information technology industry.

By adding a Section 1201 to the Copyright Act, the legislation before the Subcommittee seeks to create a legal regime to augment and reinforce the use of technological protection measures. But as modern copyright law expands to meet the challenges of the digital age, we believe lawmakers must be mindful of the new territory copyright is entering. It is not uncharted, uninhabited territory, waiting to be colonized. Rather, it is sovereign land with rules, customs and inhabitants of its own.

The territory to which I refer is the design and architecture of devices—computers, microprocessors, graphics cards and the like—used to enjoy movies, recordings, software and other copyrighted materials. This is not *new* industrial or legal territory. It is the land of the information technology industry. As copyright enters this land, it must be careful not to upset the balances and the fertile environment for innovation that have allowed its current inhabitants to thrive so well. When balanced, the innovation engine of content, communications, hardware and software is synergistic and selfreinforcing; each industry segment pushes the other and the whole engine accelerates and grows. If the engine is unbalanced, the cycle becomes selflimiting as one segment is favored or segments work against each other.

ITI has developed the following principles that we believe should govern any legislation implementing the WIPO Copyright Treaty:

1. Intellectual property should be strongly protected domestically and internationally.
2. Whenever possible, rely on existing copyright laws.
3. Regulate behavior, not technology. Legislation should focus on the intent to infringe, not on the provision of technology that could be used to infringe.
4. Do not harm the IT innovation engine, which is a key building block for economic growth and provides the tools and infrastructure that makes the GII possible.
5. Promote, rather than stifle, innovation.
6. Maintain the proper balance, inherent in the Constitution, between the protection of intellectual property and the promotion of innovation.
7. Technology is an opportunity, not a threat. Technology not only provides mechanisms for distributing content and generating revenues, it enables creative and effective solutions to protect intellectual property.
8. ITI members are content providers as well as technology providers. There are many synergies to be gained from working with content providers to develop mutually beneficial solutions.

PROPOSED CHANGES TO H.R. 2281

Mr. Chairman, ITI believes that Section 1201 of H.R. 2281 does not fully reflect the above principles. We have included in Appendix A the alternative language for Section 1201 which we believe corrects the imbalances. I would like to take my remaining time to discuss the specific changes that ITI believes are necessary to strike the proper balance between copyright protection and innovation in the IT industry.

1. A clear "no mandate" provision

On May 14, the Senate passed S. 2037, a companion bill to H.R. 2281 that included a provision informally referred to as the "no mandate" provision, addressing many of the IT industry's concerns.

The provision, Section 1201(d)(3) in the Senate legislation, states that manufacturers of legitimate computer equipment and consumer electronics would not be bound by law to respond to each and every specific technological protection measure created to protect copyrighted materials.

This is significant because the managers of ITI's member companies are loathe to tell their engineers and scientists that, rather than seeking to build the fastest, most powerful and consumer-responsive machines possible, they must instead design the next generation of information technology with lawyers at their side, carefully responding to technological protection measures from a myriad of content industry niches. Such an environment would draw energy away from true innovation and create the continual possibility of liability for failure to respond to unknown protection measures.

ITI advocates inclusion of a similar "no mandate" provision in H.R. 2281.

2. A clear definition of "effective technological protection measures"

H.R. 2281 focuses on devices that circumvent "effective technological measures." ITI commends the bill's sponsors for specifying that only "effective" measures will be covered.

This is an important distinction. If manufacturers were required to create devices that refrained from circumventing *any and all* technical protection measures, the burden would be a crushing one. After all, in the broadest sense, a technological protection measure could be any feature a copyright holder adds to his/her product that is intended to prevent unauthorized use or reproduction. It could be as strong as encryption or scrambling of content or as weak as a coded message to the computer that says "don't copy files X, Y and Z," but does nothing to otherwise protect them.

In focusing on "effective" protection measures, H.R. 2281's authors recognized that if certain devices are to be outlawed because of their capability to circumvent a protection measure, it is only fair to require that such a measure is a robust, strong and "active" one, such as encryption or scrambling, that effectively "locks up" the content. If "passive" technological protection measures, such as "don't copy" messages, were covered by Section 1201, our products would then have to look for these messages, and all their various permutations, in every file or program. The IT industry has determined that it is extremely difficult from an engineering and technology standpoint to implement these types of "passive response" schemes in personal computers without significant performance degradation. These systems are also simple for users to bypass.

In the long run, focusing only on "active" technological protection measures, as ITI proposes, will be beneficial because it will create an incentive for the content industries to use the most innovative and effective means to protect their material. The

amendment offered by ITI seeks merely to further the apparent intent of H.R. 2281's authors to differentiate "effective" technological protection measures from all others.

3. A narrower definition of which devices should be outlawed

We believe there is an important distinction to be drawn between a "black box" device, created for the purpose of copyright infringement, and a legitimate multi-purpose device that could be used by a bad actor to infringe copyrights. Today's "black boxes" are the devices ordered out of the back of magazines and used to get "free cable" or to illegally descramble satellite signals without paying for the service. They are created specifically to circumvent technological protection measures for the purpose of infringing copyrights and I can say with confidence that every one of ITI's members agrees they should be illegal.

The real debate is over legitimate multi-use devices and software that could be used by bad actors to circumvent technological protection measures. In this category reside some of the most significant articles of commerce that have fueled the digital revolution—personal computers, microprocessors, graphics cards and the like.

While the technologies driving concerns over this legislation are new and continue to evolve at a terrific pace as we speak, the legal issue is actually an old one, considered by the Supreme Court 14 years ago in *Sony Corp. of Am. v. Universal City Studios.* That case held that the sale of equipment that could be used to copy copyrighted works, like the sale of other articles of commerce, does not constitute contributory infringement if the product is widely used for legitimate, unobjectionable purposes and has substantial noninfringing uses.

Sections 1201(a)(2) and 1201(b) seek to alter that standard and break fresh ground in this area by creating a new, broader and uncertain standard that will sweep more devices into the dragnet of illegality. By prohibiting the sale, manufacture, import or use of devices that are "primarily designed or produced" for circumvention *or* have "only limited commercially significant purpose" *or* are marketed for use in circumvention, the bill broadens the standard for liability beyond the one established by the Supreme Court.

ITI believes the standard established in the *Sony* case is a fair, tested one that requires no amendment. If there must be a new standard, we believe the three elements listed above should be cumulative, not several. In other words, we would change the "or" between each of these elements to an "and." Like other proposed changes, this one would further remove manufacturers of legitimate IT products from the danger of being treated like copyright infringers.

4. Protection for reverse-engineering

The Senate companion bill, S. 2037, also included an amendment that would preserve the right to reverse-engineer products, even when they contain technological protection measures, for the purpose of achieving interoperability. ITI fully supports this change and urges the Subcommittee to add a similar provision to H.R. 2281.

VI. CONCLUSION

Innovation is the engine of the IT industry and our contribution to the economy. While strong intellectual property protection is essential to protect investments in innovation, overprotective intellectual property policies would make it even more difficult to innovate. In the IT world, where the ability to move quickly and with great agility is critical to success, policies that would slow innovation and raise costs would inflict significant harm. The entire economy would suffer as a result.

If Congress, through Section 1201 of H.R. 2281, expands the focus of the Copyright Act to include the design of information technology hardware, it should exercise care to draw a bright line between legitimate, multi-use devices that are fueling America's leadership of the New Economy and those whose purpose is to facilitate copyright infringement.

APPENDIX A

Sec. 1201 CIRCUMVENTION OF COPYRIGHT PROTECTION SYSTEMS

ITI Proposed Substitute

Page 9, line 11, strike "or" and insert "and"

Page 10, after line 4, insert the following:

(C) Definition of Effective Technological Measure—As used in this section, the term "effective technological measure" means a change in the data comprising a work or a copy of a work transmitted in digital format so as to protect the rights of a copyright owner of such work or portion thereof under this title and which—

(1) encrypts or scrambles the work or a portion thereof in the absence of information supplied by the copyright owner; or

(2) includes attributes with respect to access or recording status that cannot be removed without degrading the work or a portion thereof.

Page 10, line 18, strike "or" and insert "and".

Page 11, after line 10, insert the following:

(C) Definition of Effective Technological Measure—As used in this section, the term "effective technological measure" means a change in the data comprising a work or a copy of a work transmitted in digital format so as to protect the rights of a copyright owner of such work or portion thereof under this title and which—

(1) encrypts or scrambles the work or a portion thereof in the absence of information supplied by the copyright owner; or

(2) includes attributes with respect to access or recording status that cannot be removed without degrading the work or a portion thereof.

Page 13, after line 16, insert the following:

"(g) EXCEPTIONS—(1) Nothing in this section shall require that—

(A) a consumer electronics, telecommunications, or computing product be designed or assembled, or

(B) parts or components for inclusion in such a product be designed or assembled

so as affirmatively to accommodate or respond to any particular technological protection measure, unless such accommodation or response is otherwise required by law."

Mr. TAUZIN. As a patent attorney, you were talking about the other lawyers.

Mr. BYRNE. I do mean the other lawyers.

Mr. TAUZIN. We now welcome Mr. Robert Holleyman, President and CEO of Business Software Alliance.

STATEMENT OF ROBERT W. HOLLEYMAN, II

Mr. HOLLEYMAN. Mr. Chairman and members of the subcommittee, it is a pleasure for me to have an opportunity to testify this morning on behalf of the leading computer software companies and computer hardware companies who are members of the Business Software Alliance. And when I say I am pleased, I am quite pleased because this hearing represents one of the final chapters in a process that was initiated in Geneva in 1991, of which the U.S. led to try to secure the adoption of a new treaty that would prevent the piracy of U.S. software and the piracy of U.S. copyrighted works around the world.

Since that time, we have had a vigorous debate, we have seen passage of legislation at a 99 to 0 basis by the Senate, approval by the House Judiciary Committee, and we are here as the Business Software Alliance to support that legislation and support, in particular, the provisions approved by the House Judiciary Committee and similar provisions in the Senate on the issue of online service provider liabilities.

As most of you recall, the single largest delay in this issue was because of the debate between copyright owners and telecommunications companies on the issue of online service providers. And I am pleased that an agreement was reached, ratified by the Judiciary Committee in the House and by the full Senate. That put to rest that issue and allows us to have an appropriate balance that we need to move ahead in a technological era.

I would like to note that software piracy is costing nearly $13 billion a year, the majority of which are by U.S. companies. In the U.S. alone, we lose $2.7 billion, and a study that I am submitting for the record would show we could have had an additional 430,000

jobs in this country, $5 billion in wages, were we able to eliminate piracy here.

But this legislation does more because it is the model, it is the gold standard that we need to take to show to the world how they protect intellectual property against piracy. The most important element of this legislation is amid section 1201 on anti-circumvention. And there we support, as software companies and hardware manufacturers, this provision because we believe it is narrowly crafted to both address conduct, as well as special purposes devices that would defeat copy protection.

Today, we do not have the tools we need to defeat both special purpose devices and also piracy on the Internet, and I will submit for the record a couple pages I downloaded yesterday off the Internet, one from hackers home page dot com, with a series of serial numbers that can be used and downloaded off the Internet to break into copyright protected, password protected products. Right now, this is not a direct infringement under U.S. law. This legislation would ensure it would be. At the same time, general purpose computers could continue to be marketed. They are not implicated by this legislation, nor is general purpose software. It simply ensures were new devices to enter the market which were primarily designed to defeat copyright protection, they would be prohibited.

Finally, let me say on the—I will respond to questions. But we believe the Senate reform addresses the fact that legitimate encryption research is not negatively implicated by the provisions of section 1201.

Thank you.

[The prepared statement of Robert W. Holleyman II follows:]

PREPARED STATEMENT OF ROBERT W. HOLLEYMAN II, PRESIDENT AND CEO, BUSINESS SOFTWARE ALLIANCE

Mr. Chairman and Members of the Sub-Committee: My name is Robert Holleyman. I am the President and CEO of the Business Software Alliance and I appear before you today on behalf of America's leading software publishers in support of H.R. 2281, "The WIPO Treaties Implementation Act," as reported by the House Judiciary Committee, including the provision of that bill clarifying the responsibilities of providers of on-line services when their networks are used without their participation to pirate software.

Since 1988, the Business Software Alliance (BSA) has been the voice of the world's leading software developers before governments and with consumers in the international marketplace. Its members represent the fastest growing industry in the world. BSA educates computer users on software copyrights; advocates public policy that fosters innovation and expands trade opportunities; and fights software piracy. BSA worldwide members include Adobe, Autodesk, Bentley Systems, Lotus Development, Microsoft, Novell and Symantec. Additional members of BSA's Policy Council include Apple Computer, Compaq, Digital Equipment Corp., IBM, Intel, Intuit and Sybase.

The BSA's member companies strongly support H.R. 2281. This bill is critical to the continued leadership of US creative industries in the new global market. It is a comprehensive and balanced implementation of the obligations established by the WIPO Copyright Treaties. U.S. implementation will improve our ability to fight back against those who would steal computer programs, and our law will provide the right model for other countries to follow as they proceed with implementation and ratification of these important Treaties. Conversely, incomplete or ineffective implementation in the United States will have serious consequences for our industry in many other countries.

Piracy of software is a major and growing problem for the US economy. Last year, BSA released a report which demonstrated that 27% of packaged business software used in the US alone is illegal—resulting in as many as 130,000 lost jobs, $5.3 billion in lost wages and nearly $1 billion in lost tax revenues. If software theft could

be eliminated by 2005, an additional 216,000 jobs could be created, resulting in $8.8 billion in additional wages and $1.6 billion in additional taxes. I have submitted a copy of that report for the record.

The WIPO Copyright Treaties are an important development in addressing this problem because they:

- mark a positive step in bringing copyright protection into the digital age;
- are "win-win" treaties for both copyright holders and users;
- ensure that copyright holders have the right to determine whether and how their works are made available on interactive networks like the Internet;
- provide a crucial tool in fighting piracy both here and abroad; and,
- harmonize the application of copyright rules in the digital environment worldwide.

The United States initiated the WIPO treaty negotiations a number of years ago and the world looks to us for continued leadership. It is therefore important that Congress enact the implementing legislation for these treaties *this year.* Thirty countries need to ratify the Treaties for them to become effective. We need to begin that process in the US by enacting H.R. 2281.

US law is largely already in compliance with the WIPO Treaties. To implement those treaties, H.R. 2281 makes the following changes to US law:

- First, technical amendments clarify the status of foreign nationals under US law.
- Second, the bill makes it illegal to defeat effective technological measures implemented to protect copyrighted works; and
- Third, the bill makes it illegal to strip or alter information identifying the work's authors, the licensing terms and other similar information.

The second element, the obligation with respect to technological means to protect works, is the most critical feature of H.R. 2281. This provision recognizes two facts:

- software and other works made available in electronically fixed digital form are extremely vulnerable to theft; and,
- software developers and other authors will increasingly use technological means such as encryption, scrambling and passwords, to combat misuse of their works.

Authors will be increasingly wary of making their works available through electronic networks without a specific provision prohibiting circumvention of technological means used to prevent unauthorized acts. But in addition to being forward-looking, this provision actually addresses a problem we face today: currently, it is *not* illegal for a pirate to post passwords on a Web site, for example, circumventing the copyright holder's technological protection efforts and giving free access to the most popular software programs. It is not a direct copyright infringement—the person posting the password has not made a copy of the software itself. And, currently there is no direct way to stop these people from their bad acts.

This bill would change that—enabling us to take legal action against such persons. In addition, the WIPO Copyright Treaties would close certain loopholes in the laws of many of the countries where we have our most serious piracy threats.

We support the anti-circumvention obligations of H.R. 2281 because they meet three necessary elements:

- both the act of circumventing effective technological measures and the devices used to accomplish such acts are made illegal;
- they provide both civil and criminal remedies sufficient to deter circumvention; and
- they are appropriately narrow, applying only when effective technology is used by the copyright holder to protect rights specifically granted to authors under the Copyright Act.

H.R. 2281 makes illegal the act of circumvention in the same way that criminal laws make illegal the act of breaking and entering into a home or warehouse.

H.R. 2281 also correctly recognizes that given the nature of these technologies, it is likely that persons determined to circumvent technological protection measures will have to obtain the right tools—much as the burglar must use tools—to defeat the protection system. Such tools can consist of "cracker" utilities, illegally obtained passwords or decryption algorithms, or specially made devices.

This does not mean that the law should control sales of any device which, although made for good and useful purposes, nonetheless may be used by malfeasants for such illicit circumventing purposes—and H.R. 2281 avoids this pitfall. For example, a multi-purpose computer or computer program has thousands of perfectly legal uses, and the mere fact that it may be used by scoundrels and ruffians for illegal purposes should not make such devices or software illegal. Instead, H.R. 2281 provides that a person may not manufacture, import, offer to the public or otherwise traffic in any technology which "is *primarily* designed or produced for the purpose of circumventing...; has only limited commercially significant purpose...; or is mar-

keted by that person...for use in circumventing a technological protection measure that effectively controls access to a work protected under this title."

There has been a great deal of misinformation about the impact of this provision on legitimate computer and software products. Some opponents of this bill have argued that Section 1201 would make computers illegal. That is simply not the case. BSA's members include the leading American makers of computers, microprocessors and software, and it is their judgment that this bill would not make illegal their products.

I want to emphasize, however, this provision is not ideal from our point of view. As written, we anticipate tough legal challenges by people attempting to evade the intent of the law. In this regard, the companion bill enacted by the Senate included an amendment to Section 1201. That amendment clarifies that the obligations of the anti-circumvention provisions do not include a compulsion to observe/implement any and all technological measures. Rather, the obligation established is to refrain from designing products that defeat implemented technological protection measures. The BSA supports this amendment, and encourages its addition to the House bill.

We recognize, however, that copyright law is designed to promote interests of authors, balanced by the needs of their users and customers. Thus, in implementing these provisions, both must be considered.

A potential danger in establishing rules on anti-circumvention is that unscrupulous persons may seek to use these rules to deprive consumers of safeguards for their interests that have been established in the law and through jurisprudence.

H.R. 2281 must take these considerations clearly into account, and state expressly that the anti-circumvention provisions are not intended to impede or prohibit activity which is permitted under the copyright law. H.R. 2281 generally accomplishes these goals. Further, the Senate bill contains an additional provision specific to computer programs. That provision makes it clear that Section 1201 would not have the effect of preventing the study of computer programs in order to achieve interoperability between two programs. The BSA supports adding this provision to H.R. 2281.

As this Subcommittee is keenly aware, ensuring that American companies can compete fairly in global market for encryption technologies is one of BSA's key goals. In the course of deliberations, this issue has been considered at length. The Senate Judiciary Committee, for example, considered whether a specific rule should included in the bill to ensure that legitimate encryption testing could take place. The Committee concluded that Section 1201 does not present a threat to legitimate encryption research and, therefore, a rule specific to that issue was not necessary.

If it is ultimately deemed necessary to address the issue of encryption research expressly, the BSA believes that any such rules should require the permission of the copyright holder or the developer of the encryption product prior to allowing testing of encryption technologies after they have been applied to protect a work protected under Title 17 of the Copyright law.

The WIPO Treaties make clear that only certain kinds of technological measures are subject to protection. The Treaties speak of "effective" measures. This is a key factor: if software and computer companies were obligated to respect any and all measures that are "self-declared" to be effective, enormous confusion would result in the marketplace, as makers of all devices which can run a computer program would have to design their products to comply with a myriad such systems. Such confusion in the marketplace must be avoided.

Finally, to meet the "deterrence" requirement of the Treaties, national implementation must provide for remedies sufficient to act as such a deterrent. H.R. 2281 accomplishes this goal in that it makes violations of the anti-circumvention and copyright management information provisions subject to both civil and criminal sanctions, and includes the availability of monetary damages and criminal penalties, as well as temporary and permanent injunctions.

Liability of Service Providers

For network delivered information and electronic commerce to flourish, two elements are necessary: rich and diverse content; and high speed, reliable and affordable access to networking services. Thus, it is right and timely for this bill also to address the matter of service provider liability.

The members of the BSA are especially sensitive to this matter because several of our members provide networking services, and all of them develop the software, computers and other key architectures of networks. We approach legislating on copyright liability on the Internet with great caution because network based distribution of works, such as software, as well as electronic commerce generally, are now in the early stages of development.

While piracy remains the focal point of our concerns, we are sensitive to the chilling effect it could have on network-based commercial activity to hold liable for

copyright infringement every single person—for example, developers of multi-purpose search engines, web browsers, or communications protocols—who had a role, however tenuous, in making such piracy possible.

This issue of service provider liability has been the subject of congressional and inter-industry discussions for years. Over the course of those discussions, it became apparent that the narrow focus on whether a "reproduction" had been made within the terms of copyright law when a work was transmitted posed a major obstacle to clarifying the issue of copyright liability of providers of network services.

With these considerations in mind and with participation from the copyright community, online and Internet service providers and the House and Senate, an agreement was recently reached which is embedded in Section 512 of the Senate bill (S. 2037). This agreement provides a sound balance. BSA supports those provisions because they will promote cooperation and partnership between copyright owners and providers of online services, thus ensuring that the Internet does not become a haven for thieves.

This agreement recognizes that the Internet presents some special situations, and that when service providers are performing certain functions, they should not be liable for monetary damages.

When a carrier transmits or stores a copyrighted work, within the terms of the copyright law it is making a reproduction because its network automatically makes a "fixation" in the course of these acts. If that copy is unauthorized, liability accrues. In many instances, however, the network operator is merely fulfilling an otherwise "good" function (by transmitting, caching, hyperlinking or hosting web sites) and the "copy" is made as a collateral act in the course of performing that "good" function.

The agreed upon language recognizes the distinction and focuses on the function being performed, rather than focusing on whether not a copy has been made. Under the proposed approach, liability is measured by whether a provider of an online service is acting *"responsibly"* in performing a defined set of *basic functions* necessary for the operation of networks. If the service provider meets this test, its liability for copyright infringement arising from performing those functions is *limited (not eliminated) to certain kinds of injunctive relief.*

A service provider would have to act "responsibly" to have its acts measured by the functions it performs. Some of the relevant criteria are:

1. the provider must implement policies to address the issue of repeat infringers. As a general matter, the obligation of the service provider is to cancel the accounts of such persons, and to keep them off its networks.
2. the second precondition requires service providers to both "accommodate" *and* "not interfere" with technological measures, recognizing that copyright holders will make more widespread use of technological measures to protect against theft.

As noted above, the key concept of Section 512 is a focus on specified functions, rather than broad-based limitations on liability. The functions addressed are the ones deemed critical to the operation of networks and to the ways users interact with networks. A service provider may qualify under one of these categories, and still fail to gain the benefits of the limitation on liability if it fails to qualify for another.

1. "Passive Carrier Function"

The key concept of "passively" providing interconnection, transmission and/or routing services is that the service provider's only interaction with the material/work is an automatic response (determined by the way the routers, servers, and switches are designed work) to ensure the communication gets to where it is supposed to go.

2. "Caching Function"

This function involves two key concepts: that caching is integral to ensuring speed on the Internet; and that caching has commercial implications. The bill neither prohibits nor authorizes caching. Rather, it is sufficient to qualify for the limitation on liability by showing that the commercial interests of the operator of the original web page or site are respected.

3. "Storage on a Service Provider's Server Function"

A key function of a service provider is to provide hosting and other such services to its users. The limitation on liability applies only if the service provider:

* lacks actual knowledge and is not aware of facts or circumstances indicating infringing activity;
* does not receive money directly attributable to the infringing activity;

* upon learning of infringing activity, by notice from the copyright owners or otherwise, expeditiously ("takes-down") removes, disables, or blocks access to the material.

The takedown procedure protects both copyright owners and service providers. It provides substantial incentive for service providers to remove the infringing material without delay. For copyright owners, it provides a fast way to stop the piracy.

4. "Search Engines And Hyperlinking Function"

A further key function is providing search engines and hyperlinking to the Internet. Because this activity is substantially similar to the function of providing storage and hosting services, it is reasonable to qualify for the limitation on liability if the same criteria are met. That is, if the service provider:

* lacks actual knowledge and is not aware of facts or circumstances indicating infringing activity;
* does not receive money directly attributable to the infringing activity;
* upon learning of infringing activity, by notice from the copyright owners or otherwise, expeditiously ("takes-down") removes, disables, or blocks access to the material.

The key concern of service providers has been that they not become a target for copyright litigation because they have substantial assets. Thus, under the terms of the agreement, if a service provider qualifies, remedies against such a provider are limited to injunctions. Such injunctions are subject to traditional injunctive relief considerations, including the effectiveness of the measure, the burden on the service provider, the technical feasibility of implementing the order and availability of other, less burdensome remedies.

Finally, a number of special situations are addressed, including: immunities for "good faith" acts such as take-down by service providers, privacy considerations, "mistaken" take-downs, and guidance on the interplay between the various defined functions.

The BSA supports this approach as a whole, and encourages its inclusion in the House bill.

In conclusion, the members of the Business Software Alliance support H.R. 2281, and commend you, Mr. Chairman, and this Subcommittee, for holding these hearings. We also find the approach taken in the Senate bill on the issue of OSP liability to be a good solution because it clarifies rules on the Internet, while preserving incentives for cooperation between copyright holders and service providers.

Mr. TAUZIN. Providing it is not illegal, by unanimous consent, the downloaded information on how to hacker people's products will be submitted into the record without objection. We also have had a request from the Consumers Union to have a letter written to the committee today, for the subcommittee, entered into the record. Without objection, we will so offer that letter into the record, if anyone may wish to see it on the panel.

[The information referred to follows:]

CONSUMERS UNION
June 4, 1998

Honorable W.J. TAUZIN
Chairman, Subcommittee on Telecommunications, Trade and Consumer Protection
Committee on Commerce
U.S. House of Representatives
Washington DC 20515

DEAR MR. CHAIRMAN: Consumers Union strongly opposes the WIPO Copyright Treaties Implementation Act (H.R. 2281) for the reasons stated in this letter. We respectfully request that you include this letter in the hearings record. We urge Members to vote NO on this bill, unless it is amended to permit the fair use of technologically-protected copyrighted materials.

Consumers Union is a major copyright owner. The contents of our magazine, *Consumer Reports,* and numerous other publications, are all under copyright. However, Consumers Union also relies heavily on fair use of other copyrighted materials. Much of our research depends upon the right to research and make fair use of such materials. Further, we believe that interest of consumers and other public interests are well served by the fair use doctrine that applies to the use of copyrighted materials.

The legislation under consideration by the subcommittee would undermine the fair use doctrine. While explicitly preserving the doctrine with regard to "infringement" of copyright, it would create a new legal prohibition on "circumvention" of private technological protections of copyrighted materials, and the fair use doctrine would not apply to acts of "circumvention". The circumvention provision would wipe out the fair use of all technologically-protected copyrighted materials.

Further, the "circumvention" restrictions would apply to public domain (noncopyrighted) materials that are mixed with copyrighted materials in the same source. This would give those in physical possession of rare public domain materials a new form of control over such materials, despite the expiration of copyright protection, if they mix these materials with copyrighted materials and "wrap" them with technological protections.

These newly-created rights will dramatically diminish public access to information, reducing the ability of researchers, authors, critics, scholars, teachers, students and consumers to find, to quote for publication and otherwise to make fair use of them. It would be ironic if the great popularization of access to information, which is the promise of the electronic age, will be short-changed by legislation that purports to promote this promise, but in reality puts a monopoly stranglehold on information.

We urge the Subcommittee not to report this legislation favorably unless it corrects these problems with the proposed legislation.

Sincerely,

GENE KIMMELMAN
Co-Director, Washington Office
MARK SILBERGELD
Co-Director, Washington Office

Mr. TAUZIN. We will now welcome Ms. Hilary Rosen, president and CEO of Recording Industry Association of America.

STATEMENT OF HILARY B. ROSEN

Ms. ROSEN. Thank you, Mr. Chairman, good morning.

The RIAA is the trade group for America's record companies. Our members distribute over 90 percent of all the music sold in the United States, and about 70 percent of the music sold around the world.

It is interesting to imagine a business where billions of dollars of assets are not in machinery or plants or buildings, they are in simply our legal claim to an idea, to a creative work. Of course, it is worth nothing when the song is first written or when it is first sung; it is only worth something after people want it, and that, unfortunately, is when it is most vulnerable. That is sort of the context.

I want to give you a couple points I think are relevant for you as you think about this legislation. What is the current state of technology. Right now I just took a George Strait CD out of a box, you buy it in the store, you can load it onto a computer, attach it to a bulletin board and it can be distributed within 24 hours to hundreds of thousands of sites. That is right now. We are not talking about some future technology problem here. But I am not here asking you to solve the problem. We know we have to solve that problem. We have a current team of enforcers right now doing that by hand, and some day hopefully we will have the technical protection that will solve this problem. I am not going to ask anybody else to fix it.

Anticipating that these things were going to be different today than they were 10 years ago, the government initiated worldwide treaty negotiations because the U.S. economy has the most at stake here. Those treaty negotiations were completed in December 1996, they were agreed to by 160 countries. The changes required in U.S.

law are pretty minimal, just as anti-black box technology. Lots of other countries have to do a whole lot more to raise the level of copyright protection around the world to where we have it here in the United States and on the Internet. It is ever so much more important, as you know, it is a world without borders.

They are not going to do more if we don't even do the minimum. Let me address online commerce because this committee is spending a lot of time meeting with organizations, trying to figure out how to facilitate online commerce. Well, the only product that is actually going to be able to be distributed online, as opposed to just ordered online and sent, is copyrighted works. That is the only product, and copyrighted works will not have a business online unless copyright owners, the people who pay to produce these works, are convinced that their products are secure.

Today you are going to hear from a lot of people. I am moved and overwhelmed by the amount of support this legislation has on this panel here today, so despite all of their claims of support, I think you can lump them into two groups. One I will call sort of the loophole creators. Those are the ones who support the concept of the bill, they just want a few changes and they justify those loopholes by inventing hypotheticals that may or may not ever come to a reality, but they just need to go to the absurd to justify the loophole.

The second I think are those who might be sort of the Christmas tree hangers. You know, I don't like a lot of things about the current copyright law either, but I am certainly not prepared to turn a U.S. national treaty obligation into a gripe session about the copyright law. So I urge you not to let this committee become the foil for those kinds of changes that are going to be requested today.

The world is watching what this committee will do. You have the most experience in electronic commerce, you have taken the lead on this issue for the U.S. Government, and the world will watch whether or not you spend as much energy and commitment protecting the products that travel through the machines and telephone lines and cable connectors and satellite machines that you have been so anxious to protect, and whether you spend as much time and commitment thinking about the protection of the work that travels through them. That is what they will be watching because that is produced in the United States.

So I urge you to continue this committee's strong tradition of growing this economy, imagining a digital future and moving this legislation.

Thank you.

[The prepared statement of Hilary B. Rosen follows:]

PREPARED STATEMENT OF HILARY B. ROSEN, PRESIDENT AND CHIEF EXECUTIVE OFFICER, RECORDING INDUSTRY ASSOCIATION OF AMERICA

Good morning. My name is Hilary Rosen and I am President and Chief Executive Officer of the Recording Industry Association of America (RIAA). The RIAA is a trade association that represents the interests of the copyright owners of more than 90% of the sound recordings distributed in the United States—from small independent companies like One Little Indian and Jim Henson Records, to the major labels such as Epic, RCA, Capitol, Motown, Warner Brothers and Universal Records. Though disparate in size, our members share a common thread—a fragile existence wholly dependent upon the protection of their intellectual property. This fine filament upon which so much American creativity, ingenuity and commerce rests is

under constant strain, and you have before you an unparalleled opportunity to strengthen it.

I am extremely pleased to appear before you today to discuss a subject that is central to the economic fate of the industry that I represent. Artists and record companies have long suffered under an international legal regime that permits overt discrimination against American record companies and performers. Today, by virtue of the treaty which you are presently considering, you have an opportunity to put an end to such unfair treatment, and to simultaneously prepare copyright owners to face the challenges of the 21st century.

After years of intensive and determined bipartisan efforts on the part of both Republican and Democratic administrations, in December of 1996 the World Intellectual Property Organization (WIPO) adopted two treaties designed to establish certain basic protections for copyrighted works in the digital age. These treaties will, if ratified, effectively require other countries to provide protection in a manner consistent with current U.S. law. While the provisions of these treaties do not represent extensions of the level of copyright protection enjoyed in the United States, they do represent significant and necessary improvements in the international legal structure, and they do contain necessary provisions to enhance our ability to effectively enforce rights in the digital age. These global improvements are critical to the ability of U.S. copyright owners to do business in a global information society.

Global sales of recorded music last year exceeded $40 billion, and U.S. record companies enjoy the lion's share of this revenue. Last year also marked a turning point in the business operations of U.S. record companies inasmuch as more American music was sold overseas than domestically—a dramatic turnaround for an industry traditionally built on the strength and size of the U.S. market. Creating opportunities for expansion into foreign markets is now a primary imperative to sustain the growth of one of America's most vital and competitive industries.

The ability to sustain this growth is wholly dependent upon achieving adequate and effective copyright protection for our works in foreign markets. While this task has traditionally been fraught with difficulty—witness the well-known piracy problems in China or Mexico—it becomes increasingly more complex with developments in technology that permit the instantaneous and global distribution of materials with the touch of a button. In a global information network, protection of the creative materials that are such a critical part of this country's economic *backbone* is only as strong as the *weakest link* in the information communication chain. Thus, there is an absolute necessity to eliminate existing gaps in the international legal structure that undermine the protection enjoyed by U.S. copyright holders in national and international channels of commerce.

The treaties adopted in Geneva go a long way towards bridging these existing gaps, provided of course that they are ratified by a large number of countries. Achieving broad ratification will require the continuation of the leadership demonstrated by the United States throughout this process. Successful worldwide implementation of these treaties will only take place if you, the Congress, demonstrate leadership by example and thereby provide the necessary tools for U.S. negotiators to encourage broad accession around the world.

Substantively, the treaties accomplish five extremely important economic objectives of the United States. First of all, the treaties make it absolutely clear that copyright holders are able to control the electronic delivery of their works to individual members of the public. This both anticipates and responds to the realities of the electronic marketplace, where copyright owners are likely to rely increasingly on the communication of signals rather than the delivery of physical products to meet consumer demand. This level of copyright protection, in conjunction with technical protections (also dealt with in these treaties), is indispensable to the willingness of copyright owners to make their works available through these new media. It is important to note that the treaty provisions establishing the scope of copyright protection are entirely consistent with present U.S. law—both with respect to the grant of rights, and limitations on those rights.

Second, the treaties confirm that existing national copyright laws, and the international copyright system, apply in a generalized manner to all technologies and media, and not in a technology specific manner. This has particular relevance with respect to the right of reproduction and its limitations in digital media.

Third, the treaties require countries to effectively prevent the circumvention of technical measures and interference with rights management information used by copyright holders to protect or identify their works. It is widely anticipated that such technical measures and rights management information will play an increasingly important role in the protection and licensing of copyright in the digital age. We concur with the view that technology can play a critical role in solving some of the problems created by technological developments, and that these technological so-

lutions which simultaneously protect intellectual property and foster technological innovation and the expansion of commerce must be protected. A great deal of work is being conducted around the globe to develop technical systems of protection and viable information systems to facilitate the administration of rights. These systems of protection and rights management information, however, will be meaningless unless states effectively deter and punish acts of circumvention or interference. This treaty will require states to do so, thus establishing key elements of security for global electronic commerce.

Fourth, and most important from the standpoint of record companies, the treaty on phonograms and performances (previously referred to as the "New Instrument") will permit, for the first time, U.S. record companies and performers to share in the revenue generated overseas by the broadcasting and communication to the public of their works in certain instances. At the moment, money generated from the use of American recordings is subsidizing foreign works. In 1995, the U.S. Congress passed the Digital Performance Right in Sound Recordings Act, establishing the right of record companies to authorize interactive and certain other digital transmissions, as well as to be remunerated for subscription services not subject to exclusivity. U.S. record companies and performers have not, however, been entitled to reciprocal protection overseas by virtue of gaps in the existing international legal structure. This treaty fills those gaps. This treaty will, if properly ratified, end at least one element of decades long discriminatory treatment of U.S. interests, and will greatly contribute to the ability of the U.S. music industry to continue to play a leading role in the production of creative materials, and to compete on a more level playing field in the electronic marketplace.

Finally, these treaties put to rest arguments of a number of parties that the United States was prematurely engaged in developing international standards for copyright in a digital age. The treaties confirm the applicability of basic copyright protections, and carry forth such basic equitable principles governing when nations may limit the application of such rights. Importantly, the treaty does not amend the substantive provisions of U.S. copyright law, and the copyright protection contemplated by the treaty is entirely consistent with existing U.S. copyright law.

H.R. 2281, the legislation before you today, and more specifically, the revised version that passed the Senate last month by a vote of 99-0, responds to the concerns expressed by a number of groups about the anticircumvention and copyright management provisions of the treaty legislation. The measure has been modified to ensure that the rights of creators are balanced with those of users and consumers. Safeguards have been added to provide special treatment to libraries and universities through the inclusion of copyright exceptions and special liability limitations with respect to anticircumvention; language has been included to clarify that the bill does not impose a design mandate for manufacturers; provisions dealing with the importation of devices and Section 337 of the Tariff Act have been deleted; law enforcement has been given broader exceptions under the current bill; computer decompilation has been addressed; parental rights with respect to Internet controls have been secured; broadcasters' traditional practices have been protected; and the list continues.

Another important compromise and significant component of the bill is Title II, which clarifies the liability of online service providers when they transmit or store copyrighted works over their networks. This section represents an historic achievement in establishing new rules of the Internet road, balancing the legitimate needs and concerns of copyright owners with those of Internet service providers. Most importantly, Title II provides incentives for the online industry to work with copyright owners in the fight against Internet piracy.

In summary, the treaty implementing legislation does not substantively amend U.S. copyright law, either through expansion or contraction of the rights of copyright holders, or limitations on such rights. It implements the treaty provisions on anti-circumvention and rights management information in a minimalist fashion, meeting U.S. obligations without placing impediments to legitimate goods and services. Most in the record industry feel strongly that these provisions should have gone further—for example by prohibiting the manufacture or importation of devices which had the foreseeable effect of being used to circumvent technological measures used by copyright holders—rather than, as the legislation provides, only those devices designed or produced for the purpose of circumvention and those that have only limited commercially significant purposes or uses other than circumvention.Nevertheless, in light of the vast economic and foreign policy implications of securing rapid U.S. ratification of the treaties, the RIAA fully endorses the legislation and urges your support to help maintain the position of U.S. creators in the global information society.

Mr. Chairman and members of the Subcommittee, you have before you an unparalleled opportunity to foster and sustain U.S. competitiveness in the coming century in a sector whose importance to this Nation far exceeds its economic output. Generations of creators and would-be creators are dependent on the wisdom and judgment that you exercise here today. I urge you to move H.R. 2281 without delay, and thereby pave the way for continued U.S. leadership in innovation and creativity. Americans are ready to respond to the challenges of that opportunity.

Thank you.

Mr. TAUZIN. Thank you very much.

The Chair is now pleased to recognize Mr. Walter Hinton, Vice President of Strategy and Marketing Enterprise Operations, Storage Technology Corporation.

STATEMENT OF WALTER H. HINTON

Mr. HINTON. Thank you very much. Although I work for Storage Technology, today I am testifying on behalf of the Computer and Communications Industry Association, CCIA.

First, I would like to take the opportunity to express my appreciation to Congressman Rick Boucher who, along with Congressman Tom Campbell, had the vision to introduce H.R. 3048 as an alternative to H.R. 2281. The Boucher bill represents a thoughtful and intelligent approach to copyright issues before us, and I commend Congressman Boucher for his considerable efforts on this issue.

Like all high technology companies, Storage Tech creates a large amount of intellectual property software which of course is copyrighted and makes up an increasing amount of our intellectual property. From this perspective, we want to ensure strong copyright protection for software and we want to see the WIPO copyright treaty implemented around the world. This issue is more complicated than that. Just as important as there is strong protection, also important is balanced protection.

I am going to give you a little background on Storage Tech, and perhaps that will help you to understand my point. Storage Tech was founded in 1969 by three gentlemen who worked for IBM. These men thought they could build a better storage product, build a better mousetrap, if you will. In the spirit of entrepreneurship, similar to other things that happen in the high tech market today, they opened a small shop above a restaurant in Boulder, Colorado and commenced to building this better mousetrap. They didn't plan to make a computer; instead, our product was something that attached to IBM computers. They needed to make the product interoperate, work seamlessly with the IBM machine. They were able to do this by studying the IBM machine, identifying interspace specifications needed for interoperability and incorporating them into this new and original product.

Today, we are in a similar situation. All the products we developed have to interoperate with Sun Surfers, Hewlett Packard, Silicon Graphics and IBM systems. We can't do that without the ability to reverse engineer. Copyright law supports these engineering realities. Section 102(b) of U.S. copyright law explicitly states in no case does copyright extend to any idea, procedure, process system, method of operation, concept, principle or discovery, and case law supports this.

As is currently written in H.R. 2281, section 1201 of the bill, which deals with circumvention of technology protection measures, it imposes a serious threat to companies such as mine. First, by outlawing technologies, H.R. 2281 prohibits some very legitimate and useful technologies, and the language we believe should be narrowed in a manner that Chris Byrne had suggested.

The second problem relates as well to the Storage Tech history that I recited. The approach of H.R. 2281 is to say that circumvention per se should be illegal. Circumvention sounds pretty darn ominous. However, there are some very legitimate reasons to circumvent, including encryption research, library preservation, parental monitoring of net use and reverse engineering. When considering this last reason, reverse engineering, think about my story.

[The prepared statement of Walter H. Hinton follows:]

PREPARED STATEMENT OF WALTER H. HINTON ON BEHALF OF THE COMPUTER AND COMMUNICATIONS INDUSTRY ASSOCIATION

Introduction:

Chairman Tauzin, Ranking Member Markey, Members of the Subcommittee, thank you for inviting me here today. I am Walt Hinton, Vice President, Strategy and Marketing, Enterprise Operations, for Storage Technology Corporation. I am testifying today on behalf of the Computer and Communications Industry Association (CCIA).

I would like to take this opportunity to express my appreciation to Congressmen Rick Boucher who, along with Congressman Tom Campbell, had the vision to introduce HR 3048 as an alternative to HR 2281. The Boucher bill represents a thoughtful and intelligent approach to the copyright issues before us today. I commend Congressman Boucher for his considerable efforts on this issue. His grasp of the business realities faced by companies like mine is extraordinary. I would also like to thank Congressman Dan Schaefer and Congressman Klug for their cosponsorship of HR 3048.

With over $2 billion in annual revenue, and over 8,300 employees worldwide, StorageTek is one of the world's leading providers of data storage solutions. Our fellow members in the CCIA represent a broad cross-section of the information technology and communications industries. Collectively, we generate $200 billion annually and employ over half a million workers. A copy of the StorageTek annual report and the CCIA membership list are attached to the written testimony I submitted for the hearing record.

Like all hi-tech companies, we create a large amount of intellectual property. Software, which of course is copyrighted, makes up an increasing amount of our IP. From this perspective, we want to ensure strong copyright protection for software, and we want to see the World Intellectual Property Organization copyright treaty implemented around the world. But this issue is more complicated than that. Just as important as strong protection—is balanced protection.

I am going to give you a quick overview of StorageTek's history, which I think provides some insight as to the importance of this issue. Then, I will highlight our primary concerns about the current version of H.R. 2281. Lastly, as the Committee has requested, I will describe the compromise reached in the Senate regarding reverse engineering. While the Senate bill addresses the issue of reverse engineering, it leaves other important problems unresolved.

The StorageTek Story:

StorageTek was founded in 1969 by three gentlemen who had worked for IBM. These men thought they could make a better storage product than their former employer, so in the spirit of entrepreneurship that we are so familiar with in the hi-tech market today, they rented some space above a local restaurant in Boulder, Colorado and started their business. While they wanted to make a new and improved data storage system—they did not plan to make a new computer. Instead, our first products attached to IBM mainframes. This meant that we needed to make our product interoperate—work seamlessly—with the IBM machine. We were able to achieve this result by studying the IBM system, identifying the interface specifications needed for interoperability, and incorporating them into our new and original product. Today, we are in a similar situation. We have a much larger product offer-

ing, but in all cases our products must attach to the computers and servers made by other vendors.

Copyright law as it pertains to computer software is fully compatible with these engineering realities. Section 102(b) of U.S. copyright law states explicitly that, in no case does copyright extend to "any idea, procedure, process, system, method of operation, concept, principle, or discovery." Case law supports the assertion that interface specifications fall into this category. Furthermore, case law also supports the idea that "reverse engineering" is a legitimate practice when used to achieve interoperability, as long as the newly created, interoperable product is not otherwise infringing. This means that in the course of making a new product, it is perfectly legal to take apart an existing product to see how it works, as long as you don't infringe any intellectual property rights in the final product you bring to market.

Reverse engineering is by no means a practice particular to the computer industry. General Motors fully expects that Ford and Chrysler will take apart GM cars to figure out how they can improve on the GM product. Companies want to make and sell better products. This is an accepted part of competition in a free enterprise society. We call this innovation—and consumers are the ultimate beneficiaries as they gain access to a greater range of competitively priced products.

The Problems with H.R. 2281

This brings me to the bill now before the committee, H.R. 2281. As it is currently written, Section 1201 of this bill, which deals with "circumvention of technological protection measures," poses a serious threat to companies such as mine.

First, the bill attempts to regulate bad behavior—copyright infringement—by outlawing technologies. This is an inherently risky approach to any public policy issue. The result is to prohibit some very legitimate and useful technological applications. The test included in Section 1201 is too broad and would make legitimate companies criminally libel for products we might develop. Another flaw in the language is that it fails to define an "effective technological protection measure." If there is no requirement for the strength of the protection required, it would be easy for systems to even passively circumvent it. I believe Chris Byrne from Silicon Graphics will discuss this point in greater detail.

The second problem relates very directly to the StorageTek history that I just recited. The approach of HR 2281 is to say that circumvention, per se, should be illegal. "Circumvention" is a word with an ominous tone. However, there are some very legitimate reasons to "circumvent", including encryption research, library preservation, parental monitoring of net use, and reverse engineering. When considering this last reason—reverse engineering—think about the StorageTek story.

Current copyright law tells us that our use of interface specifications dictated by the computers and servers we attach to, does not constitute copyright infringement, and furthermore, our analysis of these other products is a legitimate practice as long as the product we produce is new and original, and non-infringing. However, if we are not allowed to circumvent a technological protection measure for even a legitimate reason, we cannot gain access to perform this analysis or determine the interface specifications. Thus, you have just made a very significant change to the current status of the law—and brought the creation of interoperable products into question. Now, one might say, but don't computer makers want your storage products to work with theirs, to increase their own market potential? Perhaps. Unless of course they are in the storage business as well as the computer or server business. Today, we have a very close working relationship with IBM on several fronts. On other fronts, they remain one of our biggest competitors. However, in 1969, as you might guess, they led both the mainframe market, and the storage market, and maybe weren't too happy to see three guys in Boulder building a business to compete with their storage business. This has implications beyond our own domestic market. This issue is also important to us from an international trade perspective. If we want to sell our storage products into a foreign market, where many of the computers are made by companies non-U.S. based companies, we need to be able to interoperate with their systems as well. Without interoperability with the installed base, we have no chance of gaining any market share in these critical international markets.

This intersection between copyright law and competition in hi-tech industries was central in many of the court cases that have addressed these issues. In the seminal case of *Sega Enterprises, Ltd. v. Accolade, Inc.* (Ninth Circuit 1992), the Court of Appeals held that it was a fair use, and therefore not a violation of copyright law, for a small U.S. manufacturer of video games to reverse engineer a large Japanese competitor's system in order to study the functional requirements. The purpose was to achieve interoperability between their games and the Sega system, thus increasing the number of independently designed video game programs offered to the pub-

lic. The court concluded that, "It is precisely this growth in creative expression, based on the dissemination of other creative works and the unprotected ideas in those works, that the Copyright Act was intended to promote." The court further stated that "...an attempt to monopolize the market by making it impossible for others to compete runs counter to the statutory purpose of promoting creative expression."

The Sega decision has been followed by several other courts, and has even been cited by the U.S. Supreme Court. No court has found to the contrary. One more recent decision may be of particular interest to this subcommittee. *DSC Communications Corp. v. Pulse Communications, Inc.* was recently decided in the Federal District Court in Alexandria, Virginia. DSC develops software used by several of the regional bell operating companies in their digital switching systems. Pulse created a competitive interoperable product. In developing it's product, Pulse used reverse engineering to determine the necessary interface information to ensure that their product would work with the rest of the system. The new Pulse product created competition, where before there was none. The Bell companies who purchase these systems saw the direct benefits that Pulse's competitive innovation brought to the market. Bell Atlantic, saved $13 million on this single element of its switching system. This case is a good illustration of the benefit that can be derived from the innovations promoted by fair and balanced copyright policies.

Although it might not be intended to prevent reverse engineering, hamper interoperability and curtail competition, that would be the result if H.R. 2281 were to pass into law in its current form.

The Compromise on Reverse Engineering:

As I mentioned earlier, the bill passed by the Senate on May 14, S. 2037, incorporates a compromise provision on reverse engineering that CCIA negotiated with the Business Software Alliance. We are committed to this compromise and urge its adoption in the House bill. (This compromise, can be found in subsections 1201 (g), (h), (i) and (j) of S. 2037.) This represents a fair and balanced solution that required long hours of intense negotiations. Its purpose is to allow legitimate software developers to continue engaging in reverse engineering to achieve interoperability to the extent already permitted by law. As stated in the Senate Report on the bill: "The objective of the compromise is to foster competition and innovation in the computer and software industry."

The Senate adopted compromise permits the circumvention of access control technologies for the sole purpose of achieving software interoperability. The compromise also recognizes that to accomplish the reverse engineering permitted, a person may have to make and use certain tools. It therefore creates an exception to the prohibition on making circumvention tools, whether they be in the form of software or hardware. The provision also allows developers of independently created software to rely on third parties to develop the necessary circumvention tools or to identify the necessary information to achieve interoperability. We believe the Senate language adequately addresses our concerns on this particular issue.

While I have focused my remarks on the impacts this bill would have on interoperability and reverse engineering, there are other legitimate reasons to circumvent a technological protection system, such as encryption research, library preservation, and parental monitoring of net use, just to name a few. These other practices are also brought into question by this legislation—and were not addressed in the Senate bill. Encryption research in particular is also an issue of concern to StorageTek and CCIA members. I believe Jonathan Callas from Network Associates will discuss this point in further detail.

Conclusion:

StorageTek and CCIA believe that any legislative changes to copyright law must vigilantly take into account the paramount interest of our intellectual property laws as provided for in the Constitution: "to promote the sciences and useful arts." The wisdom of this clause has been demonstrated over the years by our nation's tremendous intellectual, technological, and industrial growth.

Interoperability in information technology systems is essential—it is not something that is nice to have—it is a prerequisite for companies to succeed. To achieve interoperability, significant research, analysis and study using a variety of techniques, such as reverse engineering, are regularly used—and must be used.

Mr. Chairman, thank you for the opportunity to appear before you today. I would be pleased to answer any questions.

Mr. TAUZIN. Thank you very much.

Next, we will hear from Mr. Vradenburg, Senior Vice President and General Counsel to America Online.

STATEMENT OF GEORGE VRADENBURG III

Mr. VRADENBURG. Thank you very much, Mr. Chairman, And thank you for the opportunity to testify here this morning. I am speaking not only in my role as Senior Vice President of AOL, but on behalf of the Ad Hoc Copyright Coalition, which represents thousands of phone companies and other builders of the Internet, and in that capacity, as you know, Mr. Chairman, the Department of Commerce has found that the Internet and the buildout of the Internet is one of the key economic drivers for the American economy going into the next century.

Mr. Chairman, we are very much in support of the form of H.R. 2281 that passed in the Senate, and support the version of the bill in the form, as it passed in the Senate. The product of 2 years of effort and conversations between the copyright community on the one hand and the Internet community on the other, it is in fact a delicate balance of what are strongly contending forces, but nevertheless, now cooperative forces in how to buildout the Internet.

We think the bill in that form, Mr. Chairman, is essential to electronic commerce, to evoking the trust and confidences of businesses that they can put their products on the Internet with some security that those products will not be stolen, hacked or accessible to persons who are not authorized to receive them.

And from our part, the Internet obviously provides to the content and creative communities an opportunity to make their products available worldwide in a more convenient form, more accessible and at lesser costs.

I would emphasize, Mr. Chairman, the global character of what we are talking about. We need two things. We need adequate legal protections and frameworks for what we do, and we also need the incentives for private sector to develop encryption systems which protect those things. We need both things. WIPO recognizes the legal aspects and provides a framework for that, and as Ms. Rosen has pointed out, this committee is sitting in a position where the world is watching to ensure the United States adopts a balanced approach to implementing WIPO, in a form we can honestly, as a country, and as a set of industries building out the Internet, go around the world and urge the adoption of this statute and this implementation approach around the world.

And, second, we have to recognize that legal systems in the developed world are not going to be adequate to protect intellectual property. We are talking about a technology which is enormously empowering, enormously beneficial to society both in social and economic ways, and we do need to provide technology that will also address the problem of protecting these interests. And this statute in the form passed by the Senate, Mr. Chairman, encourages the development of strong encryption and strong encryption approaches to protecting intellectual property and we endorse that approach.

Finally, I would simply say as a company that does represent more than 12 million users around the world, very much thinking of those users who would like and desire to get access to lower cost products and services worldwide through digital downloading of in-

tellectual property, we believe the statute is also pro-privacy. We think it will encourage the development of strong encryption products and enable the protection of communications and intellectual property worldwide. So we, Mr. Chairman, do support the version of this bill, as it was passed in the Senate, in the belief it is pro-encryption, pro-privacy and pro-electronic commerce.

Thank you very much.

[The prepared statement of George Vradenburg III follows:]

PREPARED STATEMENT OF GEORGE VRADENBURG III, ON BEHALF OF THE AD HOC COPYRIGHT COALITION

Mr. Chairman, Mr. Ranking Member, Members of the Committee: My name is George Vradenburg III, Senior Vice President and General Counsel of America Online, Inc., the world's leading online service provider, with over twelve million subscribers. I come to this opportunity with a somewhat unusual range of experience, drawing together the perspectives of creative content companies as well as online service providers. Over the last twenty years I have worked in the entertainment, recording, broadcast and cable industries. As Executive Vice President of Twentieth Century Fox and General Counsel of CBS, I represented companies with billions of dollars of investments in intellectual property. I know what incentives operate in those arenas, and I have learned at America Online the incentives, and the realities, which govern the mass medium of the twenty-first century: the Internet. I have participated in the development of this legislation with a desire to see all interests succeed, to help ensure that copyright law is clarified for the digital environment in a way that benefits all of us.

I am here on behalf of the Ad Hoc Copyright Coalition, a unique alliance of local and long-distance telecommunications companies, online and Internet access service providers, which has worked in the context of the WIPO treaties' implementation for a balanced and equitable approach to the liability of service providers for infringements of their subscribers and users. This is the subject of Title II of the bill, and it is there my comments will be focused.

The liability of online and Internet service providers in the digital networked environment became a front-burner issue after the Administration issued its White Paper three years ago. Even though the industry was still in its infancy, it was clear the Internet and similar networks promised enormous economic and social benefits as people around the world became connected in their educational, business, recreational and political activities. Our coalition members realized that a good policy outcome could not be achieved unless all the interests around the table became sophisticated about how the new medium operates and what it can and cannot realistically do. We quickly engaged policymakers, representatives of copyright owners, and others to raise our concerns and begin the educational process. I might add that even those of us in the coalition learned a lot about the Internet as we explored the various proposals generated over the next three years.

We began our discussions in the House Judiciary Committee, where we were ably shepherded by Representative Goodlatte. That process produced a committee draft with many of the elements of a compromise, but in the end it fell short. Negotiations resumed in the fall of 1996 under the auspices of the Patent and Trademark Office, and further progress was manifest in a draft sent to the Committee by Commissioner Lehman, but again no final approach acceptable to both sides could be formulated.

Shortly thereafter, our coalition members traveled to the World Intellectual Property Organization diplomatic conference, where we worked to bring balance to the WIPO treaties implemented by H.R. 2281.

At the beginning of this Congress, the Senate Judiciary Committee took up this issue. I testified before the Committee last spring, and staff subsequently held talks with each side separately as it sought to produce a draft on OSP liability. By this point, the interested parties, the committee staff and members had profited from the prior talks, were able to identify many areas of agreement, and address the underlying concerns which drove the arguments which had previously divided the parties. Early this year, the content and service provider industries began face-to-face negotiations and were able to approach the remaining key issues with increased knowledge, creativity and insight. At the same time, Chairman Coble drafted a proposal we looked at carefully. Drawing upon ideas developed in both Senate and House, the structure of an ISP/OSP liability compromise was in place by late March, and the few loose ends tied up shortly thereafter, with vital contributions from Chair-

man Hatch, as well as Senators Ashcroft and Leahy, and in coordination with Chairman Coble, Rep. Frank and other Judiciary Committee leaders.

As you know, that compromise was embodied in Title II of S. 2037, which passed the Senate 99-0 last month. This tally was an astonishing result given the distance which had initially separated the different interests. We support the balance struck by S. 2073, and believe its enactment is of great importance to users, service providers and content providers:

- First, the bill's privacy provisions ensure that service providers will not be forced to monitor their Internet communications in order to protect themselves against possible copyright liability. The bill also secures the viability of critical Internet tools and functions, such as directories, links, and caching. Finally, copyright owners will be much more willing to place their best works on the Internet, giving consumers a much richer online experience.
- Service providers benefit from the limitation of potentially open-ended liability for infringing activity of their users. Specifically, the compromise states that service providers shall not be subject to any monetary damages for such third-party infringements when they are providing their normal network functions such as transmission, routing, caching and providing connections. When they act in the capacity of providing other services such as Web page hosting, they would be liable only for those instances when they have a direct financial benefit from the infringement, have actual knowledge of the infringing activity, or turn a blind eye to readily apparent infringements.
- Content owners gain two important benefits: first, the agreement modernizes the method by which copyright holders can protect their property for Internet piracy. The new Title II sets up a "notice and takedown" system which permits copyright holders to ensure that access to allegedly infringing material is quickly disabled without having to apply to a court for an injunction. This will reduce the economic harm to them caused by piracy. Content owners also won a commitment that when technologies are developed enabling them to better protect their property, service providers will join them in the development of standards to accommodate those technologies.

Mr. Chairman, from the beginning we have argued that the WIPO treaty implementation legislation (Title I) and the OSP liability legislative solution (Title II) had to be linked, both logically and practically. We hold that position more firmly now than ever. Both must be addressed in the same vehicle, as recognized in H.R. 2281. Neither will succeed unless they proceed in a form that is acceptable to both the content owners and the online service providers.

H.R. 2281, of course, does not fully reflect the terms of the Senate bill, particularly those amendments which were agreed to in the Senate committee markup, held after H.R. 2281 was introduced. Those amendments must be incorporated into the House bill, and we hope this committee will consider them carefully, and favorably. At the same time, we strongly urge the Committee to make no changes to the legislation which would disturb the balance struck in S. 2073, a delicately crafted compromise built upon concepts springing both from the House and Senate committee negotiations.

While we would not suggest this Subcommittee, or the full Committee, is bound by the actions of another committee, or by the other body, we are asking for your participation, through your *confirming* vote, in this groundbreaking legislation. We know that you support the aims of this legislation as strongly as we do; that you no less than we are determined to do all we can to maintain U.S. leadership in producing creative works and in generating Internet services and products; and that you too share the desire to demonstrate U.S. leadership on this critical policy issue in the international arena.

We urge you, then, to act wisely and prudently, and make no changes to the Senate version of the bill which would endanger its viability. You have our complete support in this task, and we look forward to assisting you any way we can.

Thank you.

Mr. TAUZIN. Thank you very much.

And now we will hear from Mr. Steve Metalitz with the Motion Picture Association of America.

Mr. METALITZ. Good morning, Mr. Chairman. I am Steve Metalitz.

Mr. TAUZIN. I apologize. Tauzin gets crucified too often as well.

STATEMENT OF STEVEN J. METALITZ

Mr. METALITZ. Thank you, Mr. Chairman.

I am pleased to be here on behalf of the Motion Picture Association. This is a complex subject that the subcommittee is addressing this morning, and I would like to suggest a couple places where the panel can look for guidance as to how to address some of these issues. I really would suggest you look in three places. First, I suggest you look globally because this is a global problem and this is a first step toward a global solution.

Second, I suggest you look in the legislative process at what has already happened in the legislative process, namely looking across the street or up the hill to the Senate, around the corner to what your sibling committee has done with this bill, and I would encourage you to study those steps very carefully.

Finally, I would encourage this subcommittee, particularly, to look back, because this is not a new issue for this subcommittee and the problem of dealing with black boxes; dealing with tools that are designed for the purpose of attacking intellectual property rights is one you have dealt with very successfully in the past and I think those present can inform your decisionmaking now.

The first point is to look globally. This is inherently a global electronic commerce marketplace that we are talking about and the main purpose of this bill is to protect key enabling technologies that will allow electronic commerce to flourish and will also make sure that one of the main subject matters of that electronic commerce will be the fruits of American creativity. We are very proud that the copyright industries are, for the first time, the leading export earner for the United States, more so than any other industry you see represented on this panel, and we want to keep it that way. Electronic commerce is the marketplace of the future, and in order for that marketplace to thrive, we need these protective technologies and need the legal back up against those who would make it their business to attack those technologies.

As you know, it has never been cheaper or easier to steal intellectual property than it is today and that will continue on the Internet unless these technologies come into place. This is not primarily a problem in the United States, we have a strong law here. We need to set the standard for the rest of the world which is watching, how do we implement these international legal standards. And although some of these are new and complex issues, this subcommittee and Congress as a whole are not riding on a blank slate, there is a treaty that has been negotiated, that provides the framework, and I think the final product has to be lined up with that to make sure that we are providing adequate and effective protection.

Second, looking into the legislative process, the basic approach of this bill hasn't changed, but there have been many amendments added in the House Judiciary Committee and in the companion legislation in the Senate. They deal with the problems of libraries, the concerns of Internet access and online service providers like AOL have been addressed, the broadcasters issues have been addressed, the distance learning issue has been addressed and, most importantly, the anti-circumvention provision, section 1201, has been addressed.

Those concerns have been spoken to, provisions have been narrowed for the benefit of libraries, the benefit of schools, the benefit of manufacturers of equipment, the benefit of competitive computer software developers, the benefit of individual Internet users who want to protect their privacy or protect their children against pornography. These changes have been made and we have to again watch the baseline as provided by the treaties to make sure it doesn't slip below it.

Finally, looking back on the precedence, this subcommittee has dealt very successfully with the black box problem in the cable arena and the satellite arena. Those principles apply here and we encourage you to look back at those.

[The prepared statement of Steven J. Metalitz follows:]

PREPARED STATEMENT OF STEVEN J. METALITZ ON BEHALF OF THE MOTION PICTURE ASSOCIATION OF AMERICA

Mr. Chairman, and members of the Subcommittee: I am Steven J. Metalitz, a partner in the Washington law firm of Smith & Metalitz, L.L.P. I am pleased to have this opportunity to appear today to express the strong support of the Motion Picture Association of America (MPAA) for H.R. 2281, the WIPO Copyright Treaties Implementation Act.[1] MPAA urges the House to approve this legislation speedily, along with the amendments made to the companion bill by the Senate, so that the United States will be in a position to ratify these two key treaties as soon as possible. No task before the Congress is more urgent for the promotion of a healthy electronic commerce marketplace in the fruits of American ingenuity and imagination, and for the realization of the full potential of the Internet in that marketplace.

The 1998 report on "Copyright Industries in the U.S. Economy," released last month by the International Intellectual Property Alliance, demonstrates once again that the copyright industries are among our nation's largest and fastest growing economic assets, accounting for almost $280 billion of value added to the U.S. economy in 1996 (the most recent year for which figures are available). Over the last two decades, this sector has consistently created new jobs nearly three times faster than the economy as a whole, and today provides the paychecks for more than three and one-half million Americans.

Importantly for today's hearing, the 1998 report documents that the U.S. copyright industries have passed two milestones in their contribution to U.S. competitiveness in the global economy. In 1996, for the first time, the foreign sales and exports of U.S. audio-visual material, sound recordings, computer software and print publications topped the $60 billion mark. And even more significantly, these core copyright industries have established themselves as America's leading producer of overseas revenue, topping agriculture, automotive products, aerospace, and every other industrial sector in combined foreign sales and exports. We're especially proud to be Number One in this category, because we know that a vibrant export sector is the foundation for national competitiveness in world markets.

The copyright industries generally, and the motion picture industry specifically, are excited about the explosive growth of the Internet and other forms of digital distribution of copyrighted works. We know that this new technology will allow us to reach more markets faster and more efficiently, with a greater diversity of products. Sooner than some of us may think, digital networks will be an incredible bonanza for the American consumer, and for his or her counterparts around the world, who will have easy access to more entertainment choices than ever before. U.S. audiovisual works will be a key element in this burgeoning electronic commerce in copyrighted materials.

But it is no secret that our excitement about these new frontiers is tinged with anxiety. The very same technology that facilitates the legitimate distribution of our creative products around the world also facilitates copyright piracy: the theft of the intellectual property that is the basis for the great economic and cultural success story that our industry represents. It has never been easier, cheaper or more profitable for pirates to steal the fruits of American creativity than it is today. And the

[1] MPAA represents the largest producers and distributors of filmed entertainment. MPAA is also a member of the Creative Incentive Coalition (CIC), a broader umbrella group that also supports implementation of the WIPO treaties. As a matter of disclosure, Smith & Metalitz also represents CIC, although todays testimony is being presented on behalf of MPAA only.

growth and proliferation of digital networks will make it even easier and cheaper to carry out that theft on a worldwide scale.

I don't use the word "theft" here symbolically or as a metaphor. Motion picture studios own a number of important physical assets, but by far their most valuable property is intellectual property: the exclusive rights to reproduce, distribute, and publicly perform the audio-visual works that all the world wants to see. Exploiting these exclusive property rights—either by exercising them, or by licensing someone else to do so—is the main way that motion picture studios earn revenue. Those exclusive property rights underlie the paychecks for the hundreds of thousands of jobs the motion picture industry generates, directly or indirectly—everyone from the superstars to the store clerks in the video shop on the corner. So whenever other people, without our permission and without compensation to us, go into the business of exercising these exclusive rights, they are destroying the only real revenue base we have. Pirates, whether on the Internet or elsewhere, are stealing our property, just as surely as a cat burglar is stealing the personal property of a homeowner.

Today, Internet piracy focuses on computer programs, videogames, and, increasingly, recorded music. Movies and videos are not much in evidence—yet. That's because our audio-visual content is so rich in information that it can't yet move easily everywhere in the digital network—the volume of flow is too great for some of the pipes. We know that the reprieve is temporary, however. The same technology that will smooth the way for legitimate delivery of video on demand over digital networks will also prime the pump for copyright pirates.

MPAA is very familiar with the great video pirate marketplaces of today. In Russia, in China, in Italy, in scores of other countries, video pirates steal more than $2 billion of our intellectual property each year. By spending millions of dollars on anti-piracy campaigns, and with the invaluable help of Congress and of the Executive Branch, we're making great progress in the fight against these physical pirate bazaars. But we know that the next battleground will be in cyberspace: a virtual pirate bazaar that—in scope, volume and agility of operation—may dwarf those we are fighting today.

We can be certain that the Internet will be the crucial link in the pirate operations of tomorrow. Today, the pirate who obtains, by stealth or malfeasance, a copy of the latest blockbuster picture before it is even released in the theaters must cope with formidable distribution problems. Physical copies must be smuggled across borders, warehoused, and parceled out to distributors before reaching the ultimate consumer. Digital networks will soon make this complex and dangerous undertaking cheap and simple. The pirate master will be digitized, posted on the Web, and made available to Net surfers all over the world. Or, the master will be downloaded over the Internet to a digital video recorder half a world away that can churn out thousands of pristine, perfect copies at the touch of a button, for immediate distribution to customers. By the time those pirate DVD copies hit the street, the pirate web site will have disappeared, to be set up anew tomorrow in a different country, where a different current hit will be available.

The nightmare scenario I have described, if it is realized, will drive a stake through the heart of our hopes for the healthy growth of electronic commerce. What can be done to prevent this, and to meet this daunting challenge of pervasive digital piracy? A key part of the answer lies in the legislation before you today.

The U.S. copyright law is a modern, flexible legal instrument that has succeeded in keeping pace even with the rapidly accelerating technological changes that are transforming the marketplace for audio-visual works. Sadly, the same cannot be said about the laws of many other countries around the world, including those in which the threat of piracy is most acute. In the inherently global entertainment marketplace of the immediate future, we need stronger international legal standards for copyright protection, standards that respond to those technological changes. Fortunately, those standards, and the method for implementing them, are at hand.

In December 1996, delegates from over 100 nations, meeting under the auspices of the World Intellectual Property Organization (WIPO), concluded two new treaties aimed at precisely this goal. The U.S. led the way toward the adoption of the WIPO Copyright Treaty, and the WIPO Performances and Phonograms Treaty. That leadership was essential, but it should not be surprising: after all, with its robust copyright industries, the U.S. has the most to gain from stronger international minimum standards, and the most to lose if the momentum toward this goal falters.

The challenge today is to put these enhanced minimum standards into effect as soon as possible, by gaining the ratifications of at least thirty countries to both these treaties. The U.S. must be among the first to ratify, in order to maintain our leadership position in the world copyright community, and to create the momentum needed to encourage other countries to follow in our footsteps. Before we can ratify, we

must make the limited changes to our laws that are needed to meet these new international standards. That's where H.R. 2281 comes in.

Those necessary changes do NOT involve either the basic rights of copyright owners, or the limitations or exceptions to those rights. The main change needed to bring our laws into full compliance with the obligations of the two WIPO treaties is to outlaw trafficking in high-tech burglar's tools "products or services designed primarily for the purpose of defeating technologies that control access to or use of copyrighted works. We need to do that in order to fulfill the treaties' directive that we "provide adequate legal protection and effective legal remedies" against the circumvention of technological protections that are used by copyright owners to control access to or use of their works, both on and off the Internet.

Mr. Chairman, as it was introduced—with bipartisan support, and with the full backing of the Administration—H.R. 2281 was truly a minimalist bill. It made only those changes that absolutely must be made in order to fulfill the treaties' requirements, while leaving everything else—including *all* the rights and defenses established by the copyright law—undisturbed and unchanged. In the legislative process, as often happens, reality intervened. While the basic approach of the legislation has not changed, a number of new provisions have been added. None of these changes expands the exclusive rights of copyright owners. Every single one of the changes weighs in on the other side of the balance.

For instance, one of these amendments expands the scope of an existing limitation on the rights of copyright owners, and allows libraries and archives, for the first time, to make digital copies of material in their collections, without the permission of the copyright owner. Another amendment—an extensive and painstakingly negotiated amendment—clarifies the rules on the legal responsibility of Internet access and online service providers for copyright violations that take place over their systems or networks, and limits the liability of these services for such infringements under a number of circumstances. A third amendment updates an existing exception to copyright protection and allows broadcasters to bypass technological controls in order to make temporary copies of copyrighted material in relation to authorized broadcasts. A fourth amendment directs the Register of Copyrights to study and to report back to Congress on any changes to the Copyright Act that are needed to allow schools, colleges and universities to employ the new digital technologies to serve their students through distance learning. And a host of additional amendments—I count eleven in all—have been made to narrow the anti-circumvention provisions of this legislation, with the goal of foreclosing any unintended adverse impact on libraries, schools, manufacturers of consumer products like PC's and VCR's, competitive computer software developers, or individual Internet users.

As a result of all these changes, H.R. 2281 is no longer a pristine piece of minimalist legislation. It includes a number of provisions which are not absolutely necessary to implement the treaties, and that cut back on the rights of copyright owners. Unsurprisingly, not all of these changes were especially popular with the MPAA or its member companies, and as free-standing bills we might well oppose them. But we are willing to accept them, and to strongly support the entire package, because the goal of raising international copyright standards to keep pace with the digital networked environment is so critical to the future of our industry, and, we believe, to the competitiveness of the U.S. economy as a whole in the global marketplace.

Mr. Chairman, despite all these weakening amendments and compromises, MPAA believes that this legislation, as it passed the Senate by a 99-0 vote three weeks ago, represents a major step toward this goal. The bill still meets the test of providing "adequate legal protections and effective legal remedies" against trafficking in products or services that are aimed at defeating the technologies that will make it possible for the Internet to realize its full potential for electronic commerce. But if these anti-circumvention provisions are weakened any further, the bill would risk slipping below this baseline standard set by the treaties. If that happens, the enormous effort of compromise and cooperation that have brought us this close to implementation of these landmark treaties would be jeopardized.

I would like to conclude my testimony with a few observations about those anti-circumvention provisions. These are not copyright provisions, even though the bill proposes to codify them as section 1201 of Title 17, which is the copyright title of the U.S. Code. Section 1201, unlike copyright, does not give copyright owners any exclusive rights, and (as the legislation provides) it does not "affect rights, remedies, limitations or defenses to copyright infringement, including fair use."

Section 1201, like the treaty provision it implements, reflects the fact that technical protection measures—such as encryption, scrambling, or the use of electronic envelopes or watermarks—are key enabling technologies that will make possible a robust electronic commerce in copyrighted materials over the Internet. In that way,

enactment of section 1201 will benefit copyright owners, but it will also benefit every Internet user who wants to see the network employed to make available a richer selection of movies and other audio-visual materials—as well as other copyrighted works. The only parties it will hurt are those who wish to go into the business of disseminating the means to hack through encryption, pick digital locks, steam open electronic envelopes, or obliterate digital watermarks, so that valuable intellectual property can be stolen.

The provisions of section 1201 are new, but they are far from being unprecedented. No one knows that better than this Subcommittee. On at least two previous occasions, in 1984 and in 1988, Congress has outlawed the manufacture or distribution of tools—in common parlance, "black boxes"— used to circumvent technological controls on access to copyrighted materials. If I am not mistaken, on each occasion the provision originated in this Subcommittee. While these laws are focused on safeguarding access controls for particular distribution mechanisms—cable services in 1984[2], and satellite distribution services in 1988[3]—the Subcommittee should bear these precedents in mind as it considers section 1201, which simply applies the same principles without regard to distribution media. Virtually every objection that you will hear raised to section 1201 today either was, or could have been, raised at the time Congress acted to outlaw trafficking in the tools of cable or satellite signal theft. As you prudently turned those objections aside in outlawing cable and satellite "black boxes" in 1984 and 1988, so we urge you to reject them today as Congress moves to outlaw "black boxes for the Internet."

Section 1201 is narrowly drawn to avoid any impact on legitimate products or services. Even if a device can be used to break through technological protections, it is only prohibited if the plaintiff proves that it meets one of three specific tests: that it was primarily designed or produced for the purpose of circumvention; was knowingly marketed for use in circumvention; or has only limited commercially significant uses other than to circumvent.

These hurdles to liability remain in place in the legislation before you. I encourage you to line up against this three-part test the facts of any scenario with which the opponents of section 1201 may present you. Throughout the months of debate over Section 1201, its opponents have never been able to identify a single specific legitimate consumer electronics or personal computer product that would flunk this test and that would therefore unfairly expose its manufacturer or distributor to a risk of liability. Indeed, if the motion picture industry thought for a moment that enactment of section 1201 would jeopardize the availability of videocassette recorders, and with it the home video market that has become such a vital element of the movie business, MPAA would be among the first to oppose it.

Yet you will hear from some quarters that section 1201 remains too broad. A host of crippling amendments may be proposed: that liability be limited to the act of circumvention, exculpating the commercial traffic in products and services that make these acts possible[4]; that liability under section 1201 require proof that circumvention was carried out in furtherance of an act of copyright infringement; that liability under section 1201—a non-copyright provision—be made subject to the copyright defense of fair use; that certain specifically named products be granted blanket exemption from liability; or that a product designed for the purpose of circumvention be excused if it is proven to have a substantial non-infringing use. While some of these proposals may have a superficial attractiveness, on closer examination I believe you will find that each of them serves mainly to provide a roadmap to keep the purveyors of "black boxes" and other circumvention devices and services in business even after section 1201 is enacted. Their adoption will reduce the legal protection for these key enabling technologies to an inadequate and ineffective level, thus falling short of the WIPO treaties' minimum standards.

The subcommittee should also apply the precedents of the 1984 and 1988 legislation to these proposals. If you do, you will search in vain for a "fair use" defense to distributing tools to decrypt satellite signals, or any requirement to prove the furtherance of copyright infringement (or to disprove "substantial non-infringing uses") in order to prosecute the purveyors of cable "black boxes." And both the 1984 and

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[2] See 47 U.S.C. 553.

[3] See 47 U.S.C. 605(e)(4). A precursor to this provision was enacted in 1984; the provision was also amended in 1996.

[4] This argument is especially troubling, because if adopted it would create an enforcement regime that would not only be "inadequate and ineffective," but also one that would intrude unacceptably on the personal privacy of Internet users and other consumers, since the anti-circumvention prohibition could only be enforced by catching an individual "in the act," quite possibly in his or her home. Americans would (and should) never tolerate this. Proponents of the "conduct-only" approach are either indifferent to personal privacy, or, more likely, have cannily concluded that this limitation would prevent *any* enforcement of section 1201.

the 1988 legislation specifically extend, not only to the act of circumventing the technological controls used to protect cable transmissions or satellite signals, but also to acts of manufacture, distribution, and (in the case of the satellite provisions) importation of the devices that make the circumvention possible.

Mr. Chairman, thank you once again for the opportunity to present the views of the MPAA on this critical legislation.

Mr. TAUZIN. Thank you very much.

Seth, I don't want to repeat my problems of pronunciation. Is it Greenstein?

Mr. GREENSTEIN. Greenstein, yes.

Mr. TAUZIN. Representing the Digital Media Association of McDermott, Will & Emery here in Washington, DC.

STATEMENT OF SETH GREENSTEIN

Mr. GREENSTEIN. Chairman Tauzin, members of the subcommittee, thank you very much on behalf of the Digital Media Association, or DiMA, for inviting me to testify today.

Our association promotes the interest of technology and new media companies that are making the Internet alive. We broadcast content over the Internet, we are marketing copyrighted works over the Internet with young entrepreneurial companies that didn't exist back in 1993 when this copyright debate first started.

We share Mr. Rotenberg's concerns about making electronic commerce pure, we share Ms. Rosen's concerns about music piracy. Our companies are busy building the technology that we hope will help solve these problems. But, nevertheless, in many respects, unfortunately, H.R. 2281 is unbalanced anti technology and fundamentally anti the Internet.

What we are looking for under this bill is balance and parity. We talked about a number of amendments, for example, that are given to the broadcasters. Well, Internet companies are broadcasters as well, and we think it is a simple matter that does no violence to the bill to extend these same kinds of exemptions and privileges that are granted under the Senate bill to Internet broadcasters and Internet companies as well.

To summarize the main points from our written testimony, we agree with the comments of Mr. Byrne and Mr. Shapiro concerning the flaws in section 1201. There needs to be a definition of technological protection measure. There needs to be something that assures that this is not seen as a mandate, to respect each and every technology that every person can possibly adopt. That is an impossible burden for our companies that want to apply technological protection measures to achieve.

We also share Mr. Shapiro's concerns of playability because we are working very hard to make our signals sound every bit as good as compact disks or as FM radio today, and we don't want any technological protections or improperly embedded copyright management information to interfere with that.

Section 1202 of the bill in the Senate bill has some provisions that would allow traditional broadcasters and others to participate in standard settings for copyright management information. We think that should extend also to Internet broadcasters.

Now, temporary copies that are made to facilitate performance of audio or video also should not be considered to be infringing copies. This is an issue that arises under the hardware maintenance sec-

tion of H.R. 2281, and under the Senate bill as well. Now hundreds of thousands of hours of audio and video material are out there on the Internet because of a revolutionary software method known as streaming. Streaming technology was pioneered by a DiMA member, Real Networks. They make Internet transmission sound as smooth as radio while protecting copyright owners against copying. Now, streaming technology works by storing temporarily a couple of seconds of audio data in computer memory chips in your home computer. Now this small buffer starts playing the information as more information keeps coming in. So for the user, the experience is no different than listening to radio or watching television, but the technology to achieve that smooth, continuous stream is somewhat different.

Now, the problem lies with section 203 of H.R. 2281. It narrowly exempts some temporary copies that are made in computer memory, but it doesn't exempt those small buffers that are created by streaming media technology. If this is not corrected, tens of thousands of Internet sites, more than 20 million consumers will be deemed guilty of copyright infringement, and more importantly, the Internet will go silent.

There are a number of other issues that are addressed fully in our written comments. Mr. Chairman, ultimately, what we are asking for primarily is not a Christmas tree. We seek parity for Internet companies with respect to the rights and privileges that are given to other entities under H.R. 2281.

Thank you. I will be pleased to answer any questions that the committee may have.

[The prepared statement of Seth Greenstein follows:]

PREPARED STATEMENT OF SETH GREENSTEIN ON BEHALF OF THE DIGITAL MEDIA ASSOCIATION

Chairman Tauzin, Members of the Subcommittee: My name is Seth Greenstein. I represent the newly-formed Digital Media Association, DiMA, an association to promote the interests of new media and technology companies that enable the digital transmission and marketing of music and multimedia content. On behalf of DiMA, and the seven founding DiMA members, thank you for inviting us to testify today.

We are particularly gratified to testify because, until now, no committee has really heard about the impact that H.R 2281 will have on young, entrepreneurial companies that broadcast and use music and video on the Internet in a new and compelling way. We are excited about the opportunity to build our businesses in ways that support and compensate copyright owners on a fair basis. In this regard, we also express our appreciation to the Commerce Committee for its interest in making the Internet a vibrant and viable commercial medium, as reflected by the recent series of hearings on electronic commerce and the Committee's approval of the Internet Tax Freedom Act.

Let me say clearly from the outset that DiMA members view fair implementation of the WIPO treaty as a necessary and enormously significant step. As companies vitally interested in the development of electronic commerce and new broadcast media, we understand and support the need to protect copyright on the Internet. Unfortunately, not all people on the Internet understand this fundamental point. As a result, the recording industry and other copyright owners have taken legal action to shut down sites that infringed their copyrighted works, and we applaud those efforts.

Internet companies see technology as essential to safeguarding copyrighted works, and many are developing effective technologies for this purpose. In this regard, DiMA members consider the WIPO treaties, and legal protection for technological measures, to be important components of a broader effort to secure more uniform global protections for copyrighted works.

It remains our strong desire and intention to work cooperatively with copyright owners to build an environment that protects and creates excitement about their products. However, while the technology to deliver and protect content over digital networks is developing rapidly, Internet companies are beset by uncertainty over copyright issues. When we perform music over the Internet, some claim that we actually are recording it, and so seek a mechanical royalty. When we sell music over the Internet by downloading a file to be recorded by the end-user, some claim that we are publicly performing the music, and so seek a performance royalty. These and other important copyright issues relating to the Internet will need to be resolved over the coming years, and we look forward to potential industry and legislative solutions to these issues. So, we see H.R. 2281 as an important first step. However, as a great American humorist/philosopher said, "The first step down is a long way." We want to make sure that this first step is not a step in the wrong direction.

Our basic concern is that H.R. 2281 does not accommodate the needs and legitimate interests of the other players in this equation: the engines and the drivers—those who build the technologies, and the websites that use those technologies, to bring copyrighted content to the public. As a result, we believe that H.R. 2281 is in many respects an unbalanced, anti-technology bill that prejudices the development of the Internet as a broadcast medium, and as a new mode of electronic commerce.

What Internet companies seek, in a word, is *parity*. The Section 1201 provisions of H.R. 2281 concerning technological protections must also take into account the needs of those who will be developing those technologies and physically transmitting the content to the public. Section 1202, concerning copyright management information, should recognize the needs of those who are creating the software and the websites that actually will transmit this information. And, where the bill would limit the rights of copyright owners, or the liability of those who transmit copyrighted content, Internet companies should be given the opportunity to benefit from the same limitations.

To understand our concerns in context, it is useful to explain our members' varied businesses relating to the Internet and new media. The members of DiMA include:

—a2b music of New York, New York (www.a2bmusic.com), grew out of a five-year project at AT&T Labs to develop efficient and effective technologies for delivery of music. The a2b music technology consists of three core technologies: AT&T proprietary compression algorithms that deliver music over the Internet at CD-quality, in much smaller files and, therefore, in less time; the CryptoLib Security Library, which encrypts compressed music for secure transmission via the Internet; and PolicyMaker, an electronic licensing system which controls how music is distributed and used across the network.

—broadcast.com, inc. of Dallas, Texas (www.broadcast.com), formally known as AudioNet, is an Internet broadcast network. It transmits live signals from some 300 radio stations around the country, live concerts, live television network signals, live local television news, professional and college sports events, events such as the National Association of Broadcasters convention keynote addresses, live press conferences, and shareholder meetings. Although it began in late 1995 operating out of a second bedroom of the CEO's home, broadcast.com now has grown to employ 190 people. Their Internet site is visited by some three million people each month.

—CDnow, Inc., located in Jenkintown, Pennsylvania (www.cdnow.com), testified before the Commerce Committee in the first of its series of hearings on Electronic Commerce. They are an online interactive record and video retail store, where you can read record and artist reviews, listen to clips from sound recordings using the RealAudio software, and purchase music online, 24/7, from a catalog of approximately 200,000 recordings. Begun four years ago by two 24-year-olds in their parents' basement, CDnow has become the Internet's leading music retailer, with revenues last year of more than $17 million.

—Liquid Audio, Inc. of Redwood City, California (www.liquidaudio.com), focuses on the needs of the music industry, providing labels and artists with software tools and technologies to enable the secure online preview and purchase of CD-quality music. Using their technology, record companies can transmit sound recordings in encrypted form, with rules governing access and further use. Liquid Audio technology can protect a sound recording that is electronically purchased by a consumer, transmitted to the consumer's computer hard disk drive, and then can be recorded only once onto a recordable compact disc.

—RealNetworks, Inc. of Seattle, Washington (www.real.com), develops and markets the software used to encode and deliver music and video from about 85 percent of all Internet sites. The RealAudio software, released in its first version just three years ago, created a genuine revolution on the World Wide Web, and is

in large measure responsible for the explosive growth of the Internet. Before RealAudio, Internet users would have to spend up to an hour or more downloading a single song or audio file before they could listen to it. With the RealNetworks software, audio data is sent in a stream to the user, so that after a few seconds, the music or video can be played in real time. More than 20 million people have downloaded for free the RealAudio and RealPlayer software.

—TCI Music, Inc. of New York, N.Y., runs several music-oriented Internet websites, including www.sonicnet.com, which features concerts, an Internet radio service, artist interviews and chats, and a guide to music-related information and music sites on the Internet; the Streamland music video site at www.streamland.com; and Addicted to Noise, at www.addict.com, which provides music news broadcasts, and articles and album reviews complete with music clips that illustrate the writer's observations. TCI Music also operates Digital Music Express, a cable and satellite subscription music service; The Box, an on-demand music video network; and the Paradigm Associated Labels record companies.

Visitors to such new media Internet sites inevitably come away impressed with the power of what current Internet technology can do. The technology is growing by quantum leaps and bounds, with noticeable improvements in robustness, performance and quality in each generation of product. And each "generation" is really only a few months apart. For example, RealNetworks released its first RealAudio product just three years ago. They now are on the sixth version of their software, released recently in beta form as G2. The difference in quality between the first and current versions of the software is as remarkable as the difference between a pocket-sized AM transistor radio and a home stereo.

These companies are only a snapshot or microcosm of the industry at its inception. But it is not hard to project where these industries could be in just a few years. The Internet as we know it today will increase in convenience and ubiquity. Information signals will travel through cable, satellite, and telephone lines, to be received by computing devices that no longer look like computers. Like the light in your refrigerator, when you open the door the Internet is always on. And it will be increasingly easier to find the good stuff from among the leftovers. For example, you could walk into your kitchen, turn on your screen, click on your favorite recipe sites, and follow the instructions along with your favorite chef. Go into your basement workshop, turn on the screen, go to your favorite handyman site and build projects step by step along with Tim and Al. Go into your living room and, if you don't like what's on the radio or NBC or Showtime, check out what's playing on the Internet-only radio and TV channels. Go to your desk, and take a course by distance education with teachers, video and audio clips, and tests conducted online.

The technology is here to bring compelling content to the public. Our concern is that today's rules may foreclose tomorrow's innovation. The stakes are too high, the future potential is too important, to act precipitously. As copyright law itself has done over the last two centuries, sound policies balance the rights of the copyright owners that create the content, with those of the technology companies who create the means to transmit and who market content over the new Internetworks.

Unfortunately, H.R. 2281 is overreaching in its impact on technology in general. H.R. 2281 focuses almost exclusively on restricting technologies without making any provision for technologies or uses that would be legally permissible. As others on this panel will testify, legitimate encryption research, reverse engineering, even fair uses could lead to liability under H.R. 2281.

Further, H.R. 2281 does not provide equal treatment of Internet commercial sites as compared to equivalent acts by more established media. As a result, H.R. 2281, and S. 2037, threaten companies that are investing in new technology and, so, will chill innovation and development of the Internet.

To list our concerns:

Internet companies need protection with respect to technological protection measures. First, Section 1201 prohibits circumvention of technological protection measures, but does not define what a "technological protection measure" is. By contrast, the bill defines "copyright management information" in section 1202, and defines "standard technical measures" in connection with the service provider liability sections of the bill. Particularly where stiff civil and criminal penalties are being applied, the absence of a definition of this central term is a critical flaw. A bill introduced by Rep. Rick Boucher, H.R. 3048, co-sponsored by several other members of the Commerce Committee, would provide a meaningful definition of this central term.

Second, Section 1201 requires respect for technological protection measures, but does not consider whether these measures are inherently compatible with Internet transmission protocols or, indeed, with each other. Unless Internet companies have some reasonable input into how such technologies are designed and used, Internet

companies are placed at legal risk if a copyright owner adopts technological measures that are incompatible with Internet transmission technologies. Again, we contrast Section 1201 with the provisions on standard technical measures in the service provider liability sections of the bill, which specifically provide for open and voluntary standards processes to develop and implement these technological measures.

Moreover, we are extremely concerned that Section 1201 may prevent Internet companies from upgrading their transmission software if it is not compatible with a technological protection measure. As I noted earlier, Internet companies improve their transmission software over months, not years, and their innovation fuels the explosive growth of the Internet. We are concerned about the consequences under H.R. 2281 if, for example, a particular technological protection measure works with version 5.0 but not version 6.0. The new Internet innovators, such as RealNetworks, may be faced with a decision either to bring their product to market and face the likely prospect of a lawsuit under Section 1201, or not to bring the product to market at all.

Third, the bill does not protect Internet transmitters against technological measures that degrade quality or performance. Internet companies are investing millions of dollars to make Internet delivery competitive in quality with other broadcast media. Internet broadcasters should be protected against technological protection measures under section 1201, or copyright management information under section 1202, that would degrade signals or would interfere with other data being carried in the signal format.

Fourth, the bill should not prohibit manufacture of devices or software programs that can circumvent for professional production uses, or for facilitating authorized transmissions, fair uses, reverse engineering, encryption research, and other purposes permitted under current copyright law.

Temporary copies made on a user's PC during Internet transmission, for a transitory period and to facilitate performance of the audio or video, should not be considered copyright infringement. Hundreds of thousands of hours of audio and video material now are available over the Internet. "Streaming media" technology is essential to making these Internet transmissions sound as smooth as over the radio. To understand this concern, it is useful to understand a little about how Internet transmissions work.

Unlike broadcast radio or television, which is sent in a continuous stream of information, data is sent over the Internet in small packets that are reassembled at the user's PC. It is analogous to sending a book one line at a time to a single addressee, but in different envelopes, with information indicating which line and page it is from, for later reassembly. Streaming media software, like the RealNetworks RealPlayer or the Microsoft NetShow software, store these packets in the memory chips of the user's computer until a few seconds of material are ready for playback. The software then begins playing the audio or video material from one end of this memory "buffer," while receiving and reassembling new packets of data carrying the next few seconds of material. As a result, the user hears or sees a continuous program, even though the data packets are arriving in non-continuous bursts into the buffer. So, for the user, the experience is no different than radio or television—even though the technological means of achieving that experience is somewhat different.

The hardware maintenance provisions of H.R. 2281 seem to imply that most temporary copies made in computer memory are infringements of copyright, while only those specifically exempted under H.R. 2281 are not. If temporary RAM copies of those few seconds of material are deemed to be copyright infringement, and streaming media performances and technology could therefore be deemed unlawful, audio and video over the Internet will come to a grinding halt. H.R. 3048 addresses this problem by stating that temporary copying incidental to an otherwise authorized performance is not copyright infringement. We strongly support this measure as an absolutely integral part of this bill, and as essential for the future of the Internet.

The right to make ephemeral copies of sound recordings for transmission and archival purposes should explicitly be extended to all persons exempt from the public performance right, including Internet companies. The Copyright Act includes a provision that essentially states that a transmitting organization that has the right to transmit a copyrighted work also the right to make a copy of that work to facilitate that transmission or for archival purposes. While this is not an issue under the WIPO treaties, it was made an issue under the WIPO bill. In response to concerns voiced by the National Association of Broadcasters, section 104 of S. 2037 made explicit that this otherwise-implicit exemption applied to stations licensed by the FCC. As a matter of fundamental fairness, Internet broadcasters deserve this same exemption. Like traditional radio broadcasters, Internet broadcasters are exempt from the sound recording performance right, and also operate on a non-subscription, non-interactive, advertiser-supported basis. Like traditional broadcasters, Internet

broadcasters copy music to computer servers to facilitate efficient transmission. If the exemption is not extended to Internet broadcasters, then the law essentially would hold that an Internet radio station that plays its music from CD changers is legal, but would be infringing if it played the same music from a computer server. To DiMA, this is a technical distinction that elevates form over substance. The exemption should be amended so as to explicitly benefit all transmitting organizations that are exempt from the public performance right, thereby removing any possible competitive disadvantage.

Internet website owners should not be secondarily or economically liable for innocent transmission of infringing content, or for carrying links to other websites. The service provider liability sections of H.R. 2281 are a positive step for development of the Internet. These same procedural requirements and immunities should be extended to those Internet websites that carry or link to content, but that have no ability or right to control that content.

The "first sale" doctrine should be adapted for the digital environment. Just as consumers have the right to resell or give away a book, CD or video purchased in a physical retail store, they should have the right to transfer ownership of copies received electronically. If Internet commerce is to succeed, consumers must have the assurance that the electronically purchased copy is just as good and valuable as the store-bought copy, and a copy that cannot be resold or given away is a lot less valuable. Rep. Boucher's bill, H.R. 3048, would secure this existing right for the digital environment. In the past, the argument has been made that, in the digital environment, if that transfer of ownership is done by computer, then a copy remains on the sender's computer even after the copy has been transmitted. This is a flawed argument. Technology companies like Liquid Audio and a2b music already have developed technologies for secure electronic delivery and copying of music. They, and many others, are capable of developing software that will ensure that the copy on the sender's computer is deleted after transmission. But they will have no incentive to develop these technologies if the first sale doctrine does not apply, since their technology still would be unlawful.

In summary, Mr. Chairman, Internet companies believe in strong protection for copyright, and in the need for Congress to implement the WIPO treaties. However, we also believe that strong copyright protection need not come at the expense of technology. What we seek is fairness—parity of treatment for Internet companies under the WIPO bill with respect to the rights and privileges accorded to other entities that facilitate transmission, transmit and perform copyrighted works. Both a secure legal environment and a level playing field are essential to making the Internet a vital transmission medium and marketplace.

We thank you, the members of your Subcommittee and the Committee on Commerce for your leadership and interest in these critical issues for the future competitiveness of the United States in global electronic commerce. We look forward to the opportunity to work with you and the Committee to make H.R. 2281 a more fair and balanced bill that takes into account the needs of emerging industries on the Internet.

I would be pleased to answer any questions that you or the Subcommittee members may have.

Mr. TAUZIN. Thank you. The good news is that we have already streamed your written copy.

Mr. Robert Oakley is Director of the Law Library of the Georgetown University Law Center.

STATEMENT OF ROBERT L. OAKLEY

Mr. OAKLEY. Thank you, Mr. Chairman. I am here today on behalf of a group of 5 major library associations, and I think, in a very real way, the public interest as well. The test to this committee is compelling and urgent. H.R. 2281——

Mr. TAUZIN. Mr. Oakley, if you pull the mike a little closer so we can record your statement.

Mr. OAKLEY. Is that better? I assume you will extend my time by 15 or 20 seconds?

Mr. TAUZIN. You can tell he is a professor.

Mr. OAKLEY. H.R. 2281 and its companion bill in the Senate attempt to fashion a new law to implement the international treaties

and to advance cyber commerce. However, in advancing these worthy goals, the anti-circumvention provisions of the bill establish a broad and unqualified new right to control access to information. This new right represents a momentous change in America's policy toward libraries and education, just at the time when we are striving to bring the Internet and its benefits to America's educators.

We are looking to this subcommittee to limit the sweeping new right in the public interest in the same way Congress has counterbalanced every other such right in our copyright law. As it stands now, H.R. 2281 could convert America's libraries for shared resources for a community into pay per view information outlets. Traditionally, libraries have purchased billions of dollars of works to afford students, small businessmen and women, researchers, educators, no fee access to works that they could not otherwise afford. By access, I mean the right to read and, even more simply, the right to browse published works. Taken another step, it means the right to use works in ways currently allowed by exemptions of limitations in copyright, mainly fair use, first sale, library preservation, classroom teaching.

The ability of students, teachers and others to use works in these ways fuels the creative talent of America, which in turn promotes commerce. As an alternative to H.R. 2281, the library community supports H.R. 3048, introduced by Representative Boucher, which would also implement the WIPO treaty but which would address the various concerns we have with the proposal before you today.

The urgent issue now is how to strike the proper balance between protecting digital works from unfettered duplication, while permitting library patrons no fee access to works lawfully acquired.

We all understand that unauthorized digital copying can lead to piracy. However, America's libraries depend on the well-being of America's publishers. Throughout our history, libraries have been among the most veracious, lawful acquirers of published works. Each year, our institutions spend over $2 billion supporting the publishing community. No one can accuse America's libraries of not paying their fair share in rewarding copyright creativity.

America's libraries have long acquired the right to allow their patrons to enter a library's facilities and to access the works and use them as allowed by the copyright laws. Now this legislation lays the foundation for a pay per view system of retrieving digital information. It does this by making the circumvention of technological protection measures the punishable act, even for those who have legitimate, non-infringing motives, no exceptions, no qualifications.

The drafters of H.R. 2281 appear to have tried to protect fair use by providing that nothing in this section shall affect rights, remedies, limitations or defenses under this title. While this seems to say that fair use and other limits apply, the registrar of copyrights has said that they do not. What it does mean is that after access is allowed, then the traditional defenses apply. But if access is blocked in the first place, then no one even gets to the point of thinking about fair use. Simply accessing the work is the crime.

We have some fixes that we have proposed for this. We also have a series of concerns related to other matters in copyright, including fair use, distance learning, and so on. We do support Representative Boucher's approach to this.

Mr. Chairman, I would like to ask, I have been given today a letter from 45 law professors, and I would like to ask that that letter be put into the record.

Mr. TAUZIN. Without objection, as long as we don't have to take a test afterwards. Thank you.

[The prepared statement of Robert L. Oakley follows:]

PREPARED STATEMENT OF ROBERT L. OAKLEY, LIBRARY DIRECTOR, GEORGETOWN UNIVERSITY LAW CENTER, ON BEHALF OF THE AMERICAN ASSOCIATION OF LAW LIBRARIES, AMERICAN LIBRARY ASSOCIATION, ASSOCIATION OF RESEARCH LIBRARIES, MEDICAL LIBRARY ASSOCIATION AND THE SPECIAL LIBRARIES ASSOCIATION

My name is Robert Oakley. I am a Professor of Law at the Georgetown University Law Center and Director of the Law Center's Library. I also serve as Washington Affairs Representative for the American Association of Law Libraries. I am honored to appear before the Committee today not only behalf of AALL, but for several major library organizations, for the libraries and educational institutions of which many of them are a part, and—in a very real sense—to speak for the public interest as well.

The task before this Subcommittee is compelling and urgent. H.R. 2281 and its companion bill in the Senate, the Digital Millennium Copyright Act, S. 2037, are among the most complex and challenging pieces of legislation before this Congress. The Judiciary Committees and their staff have labored long and hard under enormous pressure to fashion a new law to implement international treaties and to advance cybercommerce. But let me be quite clear, that work is not yet complete. H.R. 2281 has been referred to the Commerce Committee so that you may assess its economic and social impact as we begin the 21st Century.

We look to this Committee to make the changes necessary to match the language of H.R. 2281 with its proposed intent. Otherwise, unprecedented and monopoly-like controls over the flow and use of information in commerce and society will be granted to the owners of information. Libraries are here today not to request a parochial carve-out from this dangerous effect for themselves. Rather, we urge the Committee to make the clarifying changes in H.R. 2281 needed to balance effective protection for information owners with continued assured access to information under limited conditions for all Americans.

My testimony will address four points.

1. H.R. 2281'S unprecedented new right to control access to information in digital works would be the only unlimited right in copyright law; it should not be unqualified.

2. H.R. 2281 should be amended to assure that proposed section 1201 of the copyright act will not preclude fair use in practice.

3. Maintaining a balanced copyright act is fully consistent with American legal tradition, statute and the WIPO Copyright Treaties.

4. H.R. 2281 should be further amended to enable other valuable activities now authorized by other exceptions to proprietors' rights.

1. HR 2281's unprecedented new right to control access to information in digital works would be the only unlimited right in copyright law; it should not be unqualified.

The Copyright Act, in keeping with the Constitution, has always treated rights in information and intellectual creativity in a different way from tangible property. To achieve the Framers' intent, each right granted is balanced by exceptions or limitations which encourage the creation of new intellectual property by enabling creators to build upon the work of others.

Whether intended or not, H.R. 2281 would make a momentous change in America's policy toward libraries and education which could undermine the essential role these vital institutions play in fueling the growth of our economy, as we strive to bring the Internet and its benefits to America's educators, students, lifelong learners, researchers, consumers, entrepreneurs and small business owners.

H.R. 2281, as drafted, would grant copyright owners a new and unrestricted exclusive right to control access to information in digital works which could negate one of the most basic principles that has made the U.S. so clearly a leader in intellectual creativity, innovation, and commerce—the ability to gain access to information in published or publicly available works. At its core, this translates into the ability, without permission, to browse to determine what information one wishes to pursue, which works or pieces of information one needs to purchase, which information a researcher needs for "fair use" purposes, which information a student needs to in-

clude in a term paper, which works found in a library a small business decides to subscribe to on a regular basis, which sentences a new author or a journalist decides to quote.

"Public access to published information" is the principle that has made libraries so important to the ideals of American democracy: Once a library lawfully acquires a copyrighted work, many users over time may access that work without charge and may make "fair use" of it. This principle has afforded users of American's library, research and educational facilities access to the works they otherwise could not afford, and has made libraries one of the great democratizing forces in America.

By access, I mean the right to read and, even more simply, the right to browse published works. Taken another step, it means the right to use works in ways currently allowed by exemptions and limitations in copyright—expressly crafted by Congress—to permit fair use, use for library preservation and use in classroom teaching. And since I'm speaking to the Commerce Committee, it should be understood that such access and these permitted uses facilitate commerce and economic growth by educating patrons, encouraging creativity and spawning new works.

2. H.R. 2281 should be amended to assure that proposed section 1201 of the copyright act will not preclude fair use in practice.

The urgent issue before this Committee and Congress is how to strike the proper balance between protecting digital works from unfettered duplication while continuing to permit fair use and other exceptions, in order, for example, to allow library patrons no-fee access to works already lawfully acquired by the library. Unfortunately, this balancing act has taken a back seat to other complex questions to date in the legislative process. But now is the time to move it front and center.

Libraries do not seek material "for free." We all understand that unauthorized digital copying can lead to piracy of legitimate publishers. America's libraries depend on the well-being of those publishers. Throughout our history, libraries have been among the most voracious, lawful acquirers of published works. Each year, our institutions spend literally billions of dollars supporting the publishing community. According to surveys published in 1998 by the National Center for Education Statistics (U.S. Dept. of Education), the 8,981 U.S. public library systems spent $789 million on library materials, including electronic formats, in 1995. The 3,303 U.S. academic libraries spent $1.3 billion on information resources in all formats in 1994. From my own experience, the trend is up from these figures. Clearly, America's libraries are paying their fair share in rewarding copyright creativity.

The 121 institutions in the Association of Research Libraries alone spent $727 million in 1997 on information resources, including $65 million for electronic resources. The cost of electronic resources for these institutions has been rising at a rate of 25% per year for each of the past five years. Each ARL institution spends approximately $400,000 on electronic journals, and also invests approximately $640,000 on hardware and software to access electronic resources.

Libraries also serve small business and budding entrepreneurs. In Virginia, the Arlington Public Library emphasizes service to small business through both online and print materials on how to set up a small business, on business law, business plans, finance, legal forms, advertising and marketing, import and export information, and other business tools and resources. This is a very typical example of library attention to the fastest growing segment of American business.

The problem. America's libraries have always had the right to allow their patrons to enter the library's facilities and access the works and use them as allowed by copyright laws. The Act has never meant that lawfully acquired books and magazines were to be locked up in the library or that the library could only allow access to the reproduction of excerpts for an additional fee paid to the publisher. It has never meant that the publishers could control who looked at information and whether a page could be copied. Now, this legislation, threatens to obliterate the right of libraries to serve their patrons and of others to make use of exceptions and limitations in the Copyright Act. How does it do this? By mandating that technological protection measures which *block access* cannot be circumvented. Period. No exceptions. No qualifications.

H.R. 2281 does include a provision allowing libraries to circumvent just long enough to determine what technologically protected works they wish to purchase. We appreciate the intention behind this provision, but frankly it solves a problem we do not believe exists. The issue is not that a library does not know the content of a digital work. Publishers are more than willing to allow some of their best customers routine review of digital works prior to purchase. The problem is that once a work is lawfully acquired by the library, what can be done with it? The exemption in H.R. 2281 does not create the necessary counter-balance to this new right. It does

not ensure continued applicability of other provisions that strike the required balance.

Proposed Remedy. The drafters of H.R. 2281 appear to have tried to protect fair use by including a clause which states that: "Nothing in this section shall affect rights, remedies, limitations, or defenses to copyright infringement, including fair use, under this title." Section 1201(d). While this *seems to say* that fair use and other limitations apply, the Register of Copyrights has said they would not. It means only that after access is allowed, the traditional defenses to claims of copyright infringement may apply. But if access is blocked, no one even gets to the point of analyzing fair use. Merely accessing the work is the crime.

Two-part amendment. To that end, we recommend a two-part amendment to Section 1201 of H.R. 2281. First, it is essential that the scope of proposed Section 1201(a)(1) be clarified to prohibit "circumvention" only "for the purpose of facilitating or engaging in an act of infringement." Second, to ensure that section 1201(d) actually affords library patrons and others the opportunity to continue to use copyrighted information in the manner presently authorized by the Copyright Act, we recommend replacing the current language of that subsection with the following:

"All rights, limitations and defenses available under this title, including fair use, shall be applicable to actions arising under this Chapter."

Simply stated, these changes would assure the continued vitality of the fair use doctrine as it is relied on by thousands of Americans in libraries and educational institutions in every state every day. Finally, we note that these proposed statutory changes would be fully consistent with the intent of the House and Senate Judiciary Committees as reflected in their respective reports.

3. Maintaining a balanced copyright act is fully consistent with American legal tradition, statute and the WIPO Copyright Treaties.

The idea of balance is deeply embedded in the long history of copyright. For centuries, the law has sought to further two seemingly conflicting ends: assuring on the one hand that authors reap the rewards of their efforts, and, on the other hand, advancing human knowledge through education and access to society's storehouse of knowledge. This idea is rooted in English law, which served as the template for American copyright. This perspective was preserved for all time in the Constitution as Article 1, Section 8, Paragraph 8, in which Congress was authorized to "promote the Progress of Science and the useful Arts, by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Inventions."

Significantly, however, at no time in our history have either Congress or the courts afforded "Authors and Inventors" unlimited control over their works because the public's good has always been considered paramount. As the Supreme Court stated in its landmark Sony copyright decision:

> "We have often recognized the monopoly privileges that Congress has authorized... are limited in nature and must ultimately serve the public good... [and] are neither unlimited nor primarily designed to provide a special private benefit. Rather, the limited grant is a means by which an important public purpose may be achieved." (*Sony Corp. v Universal City Studios, Inc.*, 464 U.S. 417, 429 (1984))

The Supreme Court noted in Feist that "copyright assures authors the right to their original expression, but encourages others to build freely upon the ideas and information conveyed by a work." (*Feist Publication, Inc., v Rural Telephone Service Co.*, 499 U.S. 340, 349 (1991))

This critical balance, long at the core of the nation's copyright law, is most visibly embodied in the Copyright Act in Sec. 106—which grants copyright holders a "bundle" of enumerated rights—and in Sec. 107—which codifies the venerable "Fair Use" doctrine. Under the law, "fair use" may be made of a copyrighted work "for purposes such as criticism, comment, news reporting, teaching... scholarship or research" under certain circumstances without the permission of the author. What constitutes fair use, according to the statute, is determined by the courts on a case-by-case basis by reference to four analytical factors. We were thus extremely pleased that the more than 125 WIPO nations which met in Geneva in December of 1996 affirmatively endorsed the importance of a balanced approach to copyright law in the record of their proceedings and in the Copyright Treaty produced there.

Specifically, the Preamble to the 1996 WIPO Copyright Treaty expressly states that signatory nations agreed to its substantive provisions "[r]ecognizing the need to maintain a balance between the rights of authors and the larger public interest, particularly education, research, and access to information, as reflected in the Berne Convention." In addition, in an "agreed statement" which the United States was in-

strumental in inserting into the record of the Diplomatic Convention, the delegates stated that:

> "It is understood that the provisions of the [new treaty] permit Contracting Parties to carry forward and appropriately extend into the digital environment limitations and exceptions [to proprietors' rights] in their national laws which have been considered acceptable under the Berne Convention. Similarly, these provisions should be understood to permit Contracting Parties to devise new exceptions and limitations that are appropriate to the digital network environment."

Unless amended by this Committee, H.R. 2281 will create a significant new proprietary right in American copyright law not subject to the statutory limitations and exceptions. The WIPO treaties specifically allow for such limitations and exceptions, and the U.S. WIPO delegation specifically sought to protect them.

4. H.R. 2281 should be further amended to enable other valuable activities now authorized by other exceptions to proprietors' rights.

We very much appreciate the efforts of subcommittee member Rep. Rick Boucher to address these and other issues in H.R. 3048, the Digital Era Copyright Enhancement Act, the bill sponsored by Rep. Boucher and Rep. Tom Campbell. This bill has strong support from a total of 48 bipartisan cosponsors, including ten from the Commerce Committee. The library and education communities strongly support H.R. 3048, as does the Digital Future Coalition, of which these library organizations are members.

In addition to protecting fair use, H.R. 3048 would maintain balance in the Copyright Act through provisions that address the digital preservation of library materials, that update the First Sale doctrine (allowing a lawfully obtained digital copy to be passed along to another if the original copy is not retained), update provisions that provide for use of copyrighted works in distance learning, as well as allow access to the technology needed for such activities. We are pleased that the Senate Judiciary Committee addressed some, although not all, of these issues. We urge that the House consider Senate solutions, but that it also look carefully at the totality of the balanced approach in H.R. 3048.

Thank you for the opportunity to provide this testimony on issues at the heart of both the protection of existing intellectual property and the creation of new intellectual property.

June 4, 1998

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The Honorable W.J. TAUZIN
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DEAR SIRS: In the Fall of 1997, a number of us were among the 62 teachers of intellectual property and technology law who wrote to Chairman Coble of the House Judiciary Subcommittee on Courts and Intellectual Property to offer a critique of H.R. 2281, the Administration-backed bill to implement the 1996 WIPO Copyright Treaty and Performances and Phonograms Treaty. At the heart of that critique was an analysis of proposed new section 1201 of the Title 17. This unprecedented provision would penalize the importation, manufacture or sale of software and equipment (including many currently lawful multipurpose devices) which are capable of being used to overcome technological safeguards applied to copyrighted works. In addition, it would impose civil and criminal liability on consumers who sought to avoid such safeguards in order to gain access for whatever purpose—to protected works. We noted that although it would be codified in Title 17, Section 1201 would be no ordi-

nary copyright provision; liability under the section would result from conduct separate and independent from any act of copyright infringement or any intent to promote infringement.

Unfortunately, H.R. 2281 has now emerged from the Judiciary Committee with this so-called "anti-circumvention" language intact. We write today to express our appreciation that the Commerce Committee will conduct an independent inquiry into the issues surrounding proposed Section 1201, and to reiterate our opinion that this provision represents a short-sighted (if not backward-looking) effort to control the development and use of new technology by legislative fiat. Although the stated purposes of H.R. 2281 include the fostering of network-based digital information commerce, the legislation actually has the potential to frustrate the development of such commerce through excessive regulation.

So-called "black boxes"—devices designed for the sole purpose of breaking electronic security systems to enable copyright infringement or theft of services—already are illegal under U.S. law. Beyond that, it may well be desirable for the content industries and the electronics industry to agree upon and undertake to support generally applicable technological standards for electronic safeguards in the digital environment. But until such agreed-upon standards exist, sweeping federal legislation designed to regulate the market in multipurpose electronic devices, to require device manufacturers to respond to any and all safeguards initiatives unilaterally undertaken by anyone in content industry, and to impose a general regime of judicial supervision on the device design process, would represent a serious misstep in technology policy.

It is instructive to recall that throughout the 1980's, the motion picture industry sought to block the introduction of the VCR. In retrospect, we can see how the U.S. information economy (to say nothing of the movie industry itself!) would have suffered had this initiative succeeded. Today, it is impossible to predict all of the ways in which the regime envisioned in proposed Section 1201 would affect the well-being of U.S. high-tech industries in general, and development of electronic information commerce in particular. Indeed, it is the very difficulty of foreseeing such consequences which counsels against grand legislative gestures of the kind embodied in H.R. 2281. But some of the near-term consequences are clear. As currently drafted, this Section 1201 would:

- Effectively reverse the Supreme Court's 1984 decision in *Universal v. Sony* which established the right of consumers to tape broadcast programming for time-shifting purposes, and of manufacturers to supply them with the equipment necessary for this purpose;
- Eliminate or chill the use of otherwise legitimate techniques of "reverse engineering" in the software development process;
- Significantly discourage research into the design and implementation of various computer security systems, including encryption; and
- Undermine efforts of ordinary citizens to protect their personal privacy against technological intrusions.

Of course, some of these adverse consequences could be avoided—at least in part, by building in various specific exceptions to compensate for the general prohibitions contained in a Section 1201. But we would counsel caution in using such an approach. The examples just cited are particular symptoms of a more general problem—the difficulty of regulating dynamic new technologies on a prospective and categorical basis. For example, the "anti-circumvention" provisions of the Digital Millennium Copyright Act (S. 2037) do include an exception for software reverse engineering when undertaken to achieve interoperability. Notably, however, this exception is narrower and less flexible than the reverse engineering privilege which exists under current copyright law. While dealing with one current problem area, the exception fails to mitigate the general chill which Section 1201 would have on the development of new electronic technology.

Fortunately, as has been generally conceded in the debate over H.R. 2281, the WIPO treaties do not require the Congress to adopt such an approach. An alternative approach, which would satisfy the treaty mandates is available: the regulation of the misuse of "circumvention technology." H.R. 3048, introduced last year by Representatives Rick Boucher and Tom Campbell, embodies this approach: Under it, individuals who engage in circumvention for purposes of committing or enabling copyright infringement would be subject to significant new civil penalties.

An important distinction should be drawn here between the approach to the regulation of circumvention of H.R. 3048, and that of H.R. 2281 itself. As has already been noted, H.R. 2281 not only attempts to impose a retrograde command solution on the proliferation of new technological capabilities; it also seeks (in its proposed Section 1201[a][1]) to make end-users of technologies (including students, computer users, and other consumers) liable for "circumvention" of technological safeguards

in all circumstances, even when the purpose is one which constitute "fair" or otherwise privileged use under current intellectual property law.

Obviously, enactment of such a provision would threaten—once again—such important and economically significant consumer and commercial activities as home taping, software reverse engineering, and encryption research. More generally, it would enable a new model of information commerce, in which every consumer would be required to seek an electronic permission, and to secure an electronically-mediated license, for every use of information in a digital format: a so-called "pay-per-use" model of information distribution. Such a model, it should be noted, differs markedly from the one which now prevails in the analog environment, in which consumers typically pay to acquire a copy of the information work in question, and thereafter are entitled to make various use of its contents so long as they respect the intellectual property rights of a proprietor.

This new pay-per-use format for electronic information commerce, to which Section 1201 looks forward, represents a radical departure from tradition. It may or may not be a desirable one, when viewed from the standpoint of promoting the "Progress of Science and useful Arts"—or that of maximizing the economic benefits of new electronic distribution media to all American consumers and businesses (both large and small). Many of us are skeptical about the merits of this approach, when compared to the more familiar one under which the United States has become the world's leading producer and exporter of information products. At the very least, however, its merits—and demerits—deserve to be closely scrutinized before any legislation designed to promote it is enacted into law. Congress should not commit to new laws which will work a fundamental revision in the ways Americans sell and buy information before fully examining the consequences—intended and unintended—of such a departure. Choices about the policies which will govern the evolution of new information media as vehicles for commerce may be among the most significant facing the current Congress. We are pleased that the Commerce Committee will hold early hearings on the potentially far-reaching implications of H.R. 2281. And we look forward to assisting the work of the Committee in any way we can.

Sincerely,

KEITH AOKI, *Oregon;* TOM W. BELL, *Chapman;* STUART BIEGEL, *UCLA;* JAMES BOYLE, *American;* DAN L. BURK, *Seton Hall;* MARGARAET CHON, *Seattle;* JULIE COHEN, *Pittsburgh;* ROCHELLE DREYFUSS, *NYU;* ROBERT L. DUNNE, *Yale;* ERIC B. EASTON, *Baltimore;* TOM FIELD, *Franklin Pierce;* WILLIAM FISHER, *Harvard;* MICHAEL FROOMKIN, *Miami;* JOHN T. GAUBATZ, *Miami;* LLEW J. GIBBONS, *Franklin Pierce;* PAUL HEALD, *Georgia;* CYNTHIA HO, *Loyola (Chicago);* PETER JASZI, *American;* MARY BRANDT JENSEN, *Mississippi;* PETER D. JUNGER, *Case Western;* DENNIS KABALA, *Minnesota;* ETHAN KATSH, *Massachusetts;* ROBERT KASUNIC, *Baltimore;* ROBERT A. KREISS, *Dayton;* DAVID LANGE, *Duke;* LYDIA LOREN, *Lewis & Clark;* MARK LEMLEY, *Texas;* DOUGLAS LICHTMAN, *Chicago;* JESSICA LITMAN, *Wayne State;* DAVID LOUNDY, *Texas;* CHARLES MCMANIS, *Washington University;* STEPHEN MCJOHN, *Suffolk;* PETER MENELL, *UC/Berkeley;* NEIL NETANEL, *Texas;* ROBERT OAKLEY, *Georgetown;* TYLER T. OCHOA, *Whittier;* PHILLIP PAGE, *South Texas;* DAVID POST, *Temple;* ANN PUCKETT, *Georgia;* MARGARET JANE RADIN, *Stanford;* JOEL R. REIDENBERG, *Fordham;* JON ROMBERG, *Seton Hall;* PAMELA SAMUELSON, *UC/Berkeley;* DAVID SORKIN, *John Marshall;* PETER SWIRE, *Ohio State;* JANE. WINN, *Southern Methodist; and* ALFRED YEN, *Boston College. (affiliations provided for identification only)*

CC: All Commerce Committee Members

Mr. TAUZIN. The Chair is pleased to now recognize Mr. Charles Phelps, the Provost of the University of Rochester.

STATEMENT OF CHARLES E. PHELPS

Mr. PHELPS. Thank you, Mr. Chairman and members of the subcommittee. I am speaking today on behalf of the Association of American Universities organization of 62 major research universities in the United States.

A bit of nomenclature for you, the provost is, if you will, the chief operating officer for the main business of the university, as far as the teaching and research activities of the university. I am speaking today as an officer of one of the leading institutions in a sector

of the U.S. economy, higher education, which stands unquestionably as the best in the world. I wish to return to the question about our world presence as an effective business operation for the United States momentarily.

The House Judiciary Committee has worked with the higher education community in developing this legislation and a number of our initial concerns have been addressed, but there are two remaining concerns we have for this legislation. First is it creates the right of new access that includes none of the limitations or exceptions that are applied to proprietary rights and current law. This unconstrained new right would sharply limit the ability of faculty and students to use information services.

The second concerns I have relate to the online service provider liability provisions of title II, and these are more specific to the Senate version of the legislation. And for the right of access, I will limit my comments very briefly.

The protections embedded in section 1201, in terms of the savings clause of 1201(d), states nothing in the bill shall affect current law exemptions to copyright infringement, and the law as proposed is silent on the question of circumvention. We would appreciate the committee's assistance in adding statutory language, and the basis behind this is contained in my written brief.

The second issue I wish to discuss is the online service provider limitations. The most important concern arises from the liability provisions for employees. The faculty of universities, treated as employees under the new law would create serious liability concerns for the universities that would put the university in a policing mode that would be in very sharp conflict, very sharp conflict, with the freedom of expression that is a fundamental part of our ability to carry out our research and teaching endeavors. It is a strong and valuable cultural tradition to freedom of expression means that the faculty at our universities and colleges operate, especially in terms of what they place on Internet access, as independent and unsupervised individuals, and if their employees and liability concerns would force us to either police the individual role of our universities very vigorously or substantially scale back on our use of the digital environment as we attempt to improve the effectiveness of our teaching and research. Our preferred solution, from the point of view of the universities and colleges, would simply be to acknowledge that the faculty of the universities and colleges are in every meaningful way unsupervised in terms of material they put on the web and treat them, therefore, as equivalent to network users, rather than employees.

This brings me to my second concern, and that is the question of how the university or college might respond to copyright infringement, and here I am speaking more specifically to the Senate language. The process of notice and take-down works very differently in the university world than it would in a commercial Internet service provider. I am primarily seeking here the recognition that elimination of the network connection for a member of the university community would essentially ban the individual from the university, so that taking an individual down because of an alleged violation of copyright would be a very onerous step for us to undertake in the university world, without having due process, and

I would seek recognition of the time we would need to take to have the due process be recognized in the legislation, particularly in the area of fair use that is obviously so important for effectiveness.

Thank you.

[The prepared statement of Charles E. Phelps follows:]

PREPARED STATEMENT OF CHARLES E. PHELPS, PROVOST, UNIVERSITY OF ROCHESTER ON BEHALF OF THE ASSOCIATION OF AMERICAN UNIVERSITIES

Mr. Chairman and members of the Subcommittee: I am Charles E. Phelps, Provost and Professor of Economics and Political Science at the University of Rochester. I am pleased to have this opportunity to testify before the Commerce Subcommittee on Telecommunications, Trade and Consumer Affairs on behalf of the Association of American Universities, an organization of 62 major research universities.

At my university and others around the United States, the Provost is the chief academic officer, ultimately the person in charge of all teaching and research work undertaken within the university. In standard corporate language, the Provost is the Chief Operating Officer for the main work of the university—teaching and research. I speak today as an officer of one of the leading institutions in a sector of the US economy—higher education—that stands without question as the best in the world.

The House Judiciary Committee has worked with the higher education community in developing this legislation, and a number of our initial concerns have been addressed. However, some important issues remain unresolved, matters about which I will speak today. The two most critical problems the current legislation poses for colleges and universities are:

(1) the legislation creates a new right of access but includes none of the limitations or exceptions that are applied to proprietary rights in current law; the effect of this unconstrained new right would be to sharply restrict the ability of faculty and students to use information in research and education activities,
(2) the on-line service provider liability provisions of Title II do not accommodate the special status of faculty employees or the need for due process in response to a notice of infringement.

1. Right of Access

Current copyright law is carefully constructed as a balance between interests of producers and users of information. Accordingly, the law grants proprietary rights to copyright owners as an economic incentive for producing creative works, and the law establishes limitations and exceptions to those proprietary rights to enhance access to and productive use of creative works.

One of the key exceptions to proprietary rights used by the academic community is "fair use." The Copyright Act of 1976 codified the judicially created "fair use" doctrine. The fair use defense was initially developed by the courts to limit the scope of copyright through a common sense "equitable rule of reason." The Copyright Act provides, in relevant part, that "the fair use of a copyrighted work, including such use by reproduction in copies..., for purposes such as criticism, comment, news reporting, teaching..., scholarship, or research" is not an infringement.

The fair use doctrine permits the use of selected portions of copyrighted material under certain circumstances without having to secure the permission of the copyright owner. Fair use is fundamental to much of what we do in a university; the continuing vigor of our education and research programs depends on its continuing viability.

However, H.R. 2281 creates a new right of access that, as currently crafted, contains no provision for fair use or any other limitations and exceptions to proprietary rights. Section 1201(a)(1) stipulates that "No person shall circumvent a technological protection measure that effectively controls access to a work protected under this title." This seemingly simple language could eliminate or sharply restrict university access to information by failing to stipulate also that fair use and other limitations and exceptions apply to this new right of access as they do to current proprietary rights.

Such a result does not appear to be intended by the Judiciary Committee. Indeed, the committee added a "savings clause" (Sec. 1201(d)), which states that nothing in the bill shall affect current-law exemptions to copyright infringement. Moreover, the House Judiciary Committee Report (H. Rept. 105-551, Part I) contains the following language with respect to Sec. 1201(a)(1):

> *Paragraph (a)(1).* The act of circumventing a technological protection measure put in place by a copyright owner to control access to a copyrighted work is the

electronic equivalent of breaking into a locked room in order to obtain a copy of a book. Paragraph (a)(1) establishes a general prohibition against gaining unauthorized access to a work by circumventing a technological protection measure put in place by the copyright owner where such protection measure otherwise effectively controls access to a work protected under Title 17 of the U.S. code.

Paragraph (a)(1) does not apply to the subsequent actions of a person once he or she has obtained authorized access to a copy of a work protected under Title 17, even if such actions involve circumvention of additional forms of technological protection measures. In a fact situation where the access is authorized, the traditional defenses to copyright infringement, including fair use, would be fully applicable. So, an individual would not be able to circumvent in order to gain unauthorized access to a work, but would be able to do so in order to make fair use of a work that he or she has acquired lawfully.

Despite these indications of intent to apply current-law limitations and exceptions to the new right of access, the proposed legislation does not fully accomplish this objective. The savings clause of 1201(d) simply continues current-law exemptions to copyright *infringement,* but is silent about the new prohibition against *circumvention* created by 1201(a)(1). And the Committee report language contains no comparable statutory language.

We would appreciate this committee's assistance in adding statutory language to H.R. 2281 that implements the concepts contained in the report language quoted above.

2. On-line Service Provider Liability Limitations

Our most important concerns with the liability provisions center on how our faculty would be treated under the proposed law. As employees of universities and colleges, faculty would—under the current law—create institutional liability for copyright violations that derive from the faculty members' independent actions. However, a strong (and valuable) culture and tradition in our universities and colleges maintains complete freedom of expression, work, and publication for faculty, unfettered and unsupervised by institutional oversight or control. The total intellectual freedom of our faculties is one of the most important aspects of the way we operate and has been a key factor in the emergence of the higher education system in the United States as the very best in the world. With that intellectual freedom firmly and universally supported by our colleges and universities, faculty can and do compete in the intellectual marketplace of ideas, and that competition creates our outstanding successes in both undergraduate and graduate education. Any effort to impose controls over the work of the faculty that interfered with their intellectual freedom would stifle the creativity and productivity of their work.

However, if faculty are treated as employees of the university in this legislation's service provider liability scheme, the liability concerns arising from that law would place universities and colleges in a position of needing either to police the digital world of our universities vigorously to guard against copyright violation liability, or to scale back substantially the scope of university digital networks and services. Either outcome would create a substantial tension between the faculty and administration of any college or university, and would ultimately serve to dampen the effectiveness of our institutions. The solution most preferred from the point of view of universities and colleges would simply be to acknowledge that faculty are in every meaningful way unsupervised in terms of the material they put on the web, and therefore to treat them equivalently to students in our networked environments—as users of networks rather than as service provider employees.

This brings me to a second concern, namely how a college or university might respond to a notice of copyright infringement within the context of the current draft legislation's language. Under the proposed legislation, the copyright owner can serve "notice" of a possible violation of the copyright law, and the "defense" the university can undertake to avoid liability requires either that we convince the faculty member or student to remove the offending material, or, failing that, sever the individual's connection to the Web. (These acts are referred to as "takedown" of the allegedly offending material or connection.)

This "notice and takedown" process assumes guilt, with possible innocence to be determined subsequently. Colleges and universities fully understand the need for an expeditious response to cases of copyright infringement in the digital environment, where a market can be damaged or destroyed quickly. But the legislation's notice and takedown procedure would have a different impact on institutions of higher education than it would on commercial service providers. For any .NET or .COM service provider, severing the connection of the implicated user merely eliminates $10 or $20 a month in revenue. In the .EDU world of universities and colleges, re-

sponding to a notice of alleged infringement is more problematic. Universities and colleges fundamentally rest on the premise that free and open expression of opinion is not only desirable, but essential. Enforcing the "takedown" of material in response to a notice of alleged infringement would have the appearance of suppression of speech, particularly in a setting where fair use makes the legality or illegality of a particular infringement claim less than crystal clear (more about this issue in a moment).

Worse than taking down material before verifying that it is in fact infringing, severing a faculty or student's connection to the Web is tantamount to banishing that individual from the academic community. It would either alter the way faculty teach courses or (in the case of students) block the ability to participate. It would eliminate a major form of communication between our students and faculty that helps to create a sense of community. We could not envision taking such a drastic step without first invoking careful internal processes of review. Yet the proposed legislation offers these "takedown" actions as the only sure way to protect against liability.

Whether any given claim of infringement would eventually be upheld by a court of law is much more uncertain in the world of higher education than in the commercial sector by virtue of the widespread and exceedingly important application of fair use. As indicated earlier, much of what we do in universities and colleges in teaching and research relies on our ability to access copyrighted material under fair use provisions. Fair use, as defined by legislation and case law, draws no bright line between acceptable use and unacceptable copyright violation. Reasonable people can differ in their views of what constitutes fair use. Yet in the proposed legislation, copyright owners can precipitate with the simple filing of a notice of infringement (which may or may not be valid) a series of difficult and potentially disruptive steps within the university that we would have to undertake to create a safe harbor. Thus, for universities, the safe harbor crafted in the legislation is scarcely a safe harbor at all, but more a perilous navigation between the Scilla of destroying our intellectual community (by taking down material or connections) and the Charybdis of facing liability for potential violations of the copyright law.

In light of these concerns, we seek a recognition by those crafting the legislation that the notice and takedown process is more disruptive to the world of higher education than it is to the world of commercial online service providers. And we seek an understanding that any steps we take to either take down material or remove someone's connection to the Web through our networks must inevitably involve due process procedures within our institutions that have no counterpart in the world of commercial service providers. Indeed, if we did not undertake such careful procedures, we could well be held—and rightly so, I firmly believe—in violation of our implicit contracts with students about participation in our academic community or be put in a position of denying our faculty's ability to teach and conduct research effectively.

We need—and will be most happy and eager to work with the Congress—to find modifications to the proposed legislation that accommodate the particular needs of the academic environment while at the same time protecting legitimate copyright interests. We take very seriously the legal protection of intellectual property, and indeed, universities and colleges and our faculty and staff benefit enormously from that system of protections. At the same time, our ability to teach and carry out research relies importantly on the access to information that the fair use provisions of copyright law create, and we urgently wish to maintain those rights in the world of digital information.

Thank you for this opportunity to present our views.

Mr. TAUZIN. Thank you very much. Let me, again, thank you all. You contributed some extraordinarily useful information for us to think about as we proceed. We are going to follow the same rules on this side of the panel now as we asked you to follow. We will abide strictly by the 5-minute rule in questioning. Understand that we can't get to all the points you raised in 5 minutes and we will have to target them. The Chair will recognize members in the order of their appearance and we will again abide strictly by the 5-minute rule, if that is acceptable to everyone. We will try to have a second round if you feel you need more time.

The Chair will recognize himself for those 5 minutes and ask the staff to set the timer so I am as strictly regulated as anybody else.

I want to hit three quick questions if I can, in the time. Privacy was the first issue raised, and I would like some response from those of you associated with supporting the legislation as drafted. Is it necessary to gather information on the user in order to protect the owner of the copyrighted materials?

Any of you who would like to respond.

Mr. METALITZ. Mr. Chairman, if I could take a crack at that. I think this is an extraordinarily pro-privacy bill in its current form. The encryption and these other technologies we are talking about are the best way for Internet users to protect their personal privacy. They also happen to be very good ways for copyright owners to preserve the integrity of their works.

Mr. TAUZIN. Do you guys object to the addition of Mr. Boucher's language that says in order to protect privacy, the term "copyright management information" does not include any personally identifiable information relating to the user of a work?

Mr. METALITZ. All that does, I think, is say that it is not okay to tamper with the information, since copyright information is defined in the bill for the purpose of defining what is illegal to tamper with.

Mr. TAUZIN. Would the language do harm to the bill is what I am asking.

Ms. ROSEN. I haven't seen the language, but the contract benefit information identifies the copyright owner, not the user.

Mr. TAUZIN. So the language would do no harm?

Ms. ROSEN. I don't know what the language proposed is.

Mr. TAUZIN. We will get it. I want to make sure I understand this. The concern you have expressed is addressed in the bill, as written, or whether we need to consider any language that may properly address it. We are considering privacy legislation, in this committee, at several levels, and obviously in the context of this bill, we want to make sure that in protecting the owner of the property we are not in some way further damaging the ability of people to use information without the use of that information somehow haunting them the rest of their lives.

Mr. Holleyman.

Mr. HOLLEYMAN. Mr. Chairman, I would simply say that in the long course of this legislation, the issue that has been raised by privacy is a very new issue, and I am sort of suspect about the issue because we have been very involved as an organization in promoting the use of encryption technology to protect privacy, and certainly our initial take on this is the current legislation does not——

Mr. TAUZIN. Let me ask Mr. Rotenberg quickly, what is your specific problem with the language in the draft that you think threatens privacy?

Mr. ROTENBERG. I think you hit it exactly, Mr. Chairman. The 1202 language as opposed to the 1201 language leaves open the collection of information about the user, when the real purpose is to protect the rights of the owner. We have no objection to protecting the rights of the owner, we just don't want the user's information——

Mr. TAUZIN. Let me ask you to respond in writing to the question. We won't have time to do it in this 5 minutes.

The second question relates to the fair use issue, about students and professors and all of us accessing the first level of encryption to get to the work. Then the second level of encryption where the work itself, the product is encrypted, which prevents us from copying it. In the old world, the library bought a book, students would go in, look at the book, read the book, if they want to make a copy of a page or paragraph or chapter for purposes of a paper, they could do so. In the new world of digital transmission, I understand that the bill implies that the library is still going to have to pay for the first book, the first access to that work or recording. The question then is, how can the student get to that next level, how can the student use a part of that work for purposes of a paper, research, document, or a professor use it, without having to pay every time they want a copy of a page or a paragraph?

Somebody address that quickly for me.

Mr. METALITZ. Mr. Chairman, we are not talking here in a vacuum, we are talking in a market and I think Professor Oakley was absolutely right, this is a $2 billion market and the people who serve the market, publishers and copyrighters, are going to want to serve it, they are not going to want to freeze it out, and the marketplace will determine whether a pay per view system is used, whether a one-time payment system is used. But the purpose of——

Mr. TAUZIN. Let me interrupt you. The marketplace would probably want a payment.

Mr. METALITZ. As you said, Mr. Chairman, they pay for the book.

Mr. TAUZIN. Yes, they pay for the book, but they don't charge every student every time they copy a page or paragraph. And the concern, as I hear it, from the libraries and the professors and the university, is that it implies the marketplace will now require payment by every student for every page copied, every paragraph copied. The problem, as I understand it, is that to permit the student to copy every page in a digital world opens the door to complete copying and read copying and distribution of products in violation of the owner's rights, so there is a heck of a problem here. But I am asking for some help in terms of the way we have written this. It seems to imply that every student in America is going to be charged every time they want to make a copy of a paragraph or a page or chapter. That is where we have a problem. Would you please address this?

Ms. ROSEN. We are absolutely not there. In fact, the statute is very clear in the opposite. There is no right of access, as you correctly implied, currently, in the marketplace. Somebody has to acquire a work lawfully. But once that work is acquired, there is absolutely—I mean, the purpose of the savings clause on fair use is to say nothing shall change the current fair use law. So if the library and the student accessing the work within the library system is doing that lawfully and under the same fair use limitations, that would be a legitimate use.

Mr. TAUZIN. My time has expired.

The Chair will recognize the ranking minority member, Mr. Markey, for a round of questions.

Mr. MARKEY. Thank you, Mr. Chairman, and thank you for this hearing today.

I want to know how we would deal with encryption research. Obviously someone making an antidote to security frauds or computer viruses may need to develop programs and techniques that circumvent lack security and assessed risks. I want to get views on whether such research can only be done with permission of the target or whether research conducted programs—research conducted probing, whether search encryption is strong enough, legitimate and permissible without prior permission.

My high tech companies in Boston have a split view on this issue. To some, encryption researchers are pejoratively referred to as hackers, to others they are hailed as heroes and referred to as hackers. How should we address this issue?

Mr. Callas and Mr. Rotenberg, and then I would like Ms. Rosen to tell us whether she would find unauthorized research welcome or unwelcome for her industry.

Mr. Callas and Mr. Rotenberg.

Mr. CALLAS. Typically research is done both by the people who produced the encryption software and by other people. There is a process that is like peer review in a lot of cases. My company, for example, puts out our software and we say, if you can break it, just let us know. There are, however, places where encryption research has been done on systems purported to be secure for the purposes of testing that, and in one specific case recently, there was the research that was done on the GSM cell phone encryption, where they found some weaknesses in it, and exactly what the weaknesses mean is still subject to debate because it is still a very recent finding. But this was a system that had never been made public before; it was a secret system that they said is secure, trust us. We would like to be able to test things in the example——

Mr. MARKEY. Fine. Let me go onto Mr. Rotenberg.

Mr. ROTENBERG. Mr. Markey, I appreciate your question.

I should say at the outset I am not a cryptographer; however, some of my best friends are. They have certainly explained to me the importance of this issue.

Also, if I could, sir, I would like to introduce into the record a letter sent to the chairman, Mr. Tauzin, from the Association for Computing. This is the largest computer group in the country, and specifically on the question you asked, Mr. Markey, on encryption research. There is a very specific concern here outside of the industry related to the research and publication of articles about encryption because, as John said, I think, this is an adversarial process. Someone proposes a technique to protect systems, someone looks at that technique and says this may not work and let me show you how. There are some settings where it is not perhaps quite so friendly because you can actually be at risk. If you are using a technique to protect your system that you are not satisfied is not going to be adequate, you really do need to attack it.

Now, my reading of the Senate bill, because I know a lot of people spend a lot of time on this issue, I don't think the Senate bill goes far enough to understand the problems. The Senate bill talks about interoperability in dealing with ways that make sure that systems can talk to each other and not be sort of blocked out by the anti-circumvention provision. But for the hard problem, which is making sure that encryption does what it says it does, doesn't

leave you weak, doesn't leave the systems insecure, I think 1202 is going to create some problems.

Mr. MARKEY. Ms. Rosen.

Ms. ROSEN. The test is very narrow but——

Mr. MARKEY. Do you want Mr. Callas to be able to do his research in a way to make sure that all of your CDs, all of your intellectual property is——

Ms. ROSEN. It is not really CDs they may necessarily want to decrypt, so maybe I will defer to Bob, since it is his customers.

Mr. HOLLEYMAN. Briefly, because we have talked a lot in this committee about encryption and encryption research. Encryption research, as the Senate report notes, could continue to be promoted under this bill. In fact, we encourage encryption research in testing that will occur, and it can continue to be covered because, one, as it says, any encryption algorithm can be tested. An algorithm as such is not protected under copyright, so it is not protected by this.

Mr. MARKEY. See, I am not sure that everyone has the same noble and academic intentions, and that is where this question gets quite complex for me.

Mr. TAUZIN. The gentleman's time has expired. The letter you referred to, Mr. Rotenberg, has been offered into the record. Any objection to receiving it. Without objection, the letter is received.

[The letter follows:]

ASSOCIATION FOR COMPUTING
June 4, 1998

Representative W.J. "BILLY" TAUZIN
Chairman
Subcommittee on Telecommunications, Trade and Consumer Protection
House Commerce Committee
2125 Rayburn House Office Building
Washington D.C. 20515

DEAR CHAIRMAN TAUZIN, we are writing to express our concern about the effects of the "anti-circumvention provision" in H.R. 2281, the "WIPO Copyright Treaties Implementation Act" on encryption research and computer security. The Association for Computing (ACM) is the oldest and largest international association of computer professionals with 70,000 members in the U.S. As scientists, we are concerned that section 1201 will have the serious effect of criminalizing research intended to improve product and system security and the manufacture, import, or use of tools necessary to perform such research. It will also impede the ability of system operators to find and correct weaknesses in their own systems. Devices that circumvent technological protection measures are necessary for researching, developing, and testing copyright protection systems. The anticircumvention provision in H.R. 2281 fails to recognize these legitimate uses of decrypting or descrambling tools.

Encryption Research

Research in encryption science entails the study of algorithms and their implementation in hardware and software that encrypt or scramble data. These products are tested using devices that attempt to circumvent the encryption algorithms or their implementation mechanism. Such adversarial testing is necessary to identify weaknesses in the system. Under H.R. 2281, both the testing itself and the manufacture of software tools that test the viability of a proposed encryption algorithm would be prohibited.

In addition to prohibiting encryption research, H.R. 2281 could also limit the ability of cryptographers to publish scientific articles revealing weaknesses in an algorithm or its implementation. Such publication is an integral part of the scientific method. The cryptographers intent is to promote the science of cryptology, and to prevent users from trusting the flawed algorithm, not to encourage others to use the article to break into a system protected by the flawed algorithm. H.R. 2281 will effect the ability of a cryptographer to publish any article that reveals a security flaw in a commonly used encryption scheme. Under Section 1201(a), all copyright owners who use that particular encryption scheme may file action against the author on the

basis that the article is "trafficking in [a] technology" or is a "service" that enables circumvention of the access control technology. The result may be that weak algorithms continue to be used even after researchers determine they are flawed.

Computer Security

H.R. 2281 makes circumventing access control technology *per se* illegal. This may effect the ability of system operators to test their computer systems for security, weaknesses. Often, the exact same technology (encryption) is used to control access both to a copyrighted digital work and to certain components of a computer security system. For example, the same encryption algorithm might be used to restrict access both to a password file and to a literary work stored on the system. System operators have important, legitimate reasons to circumvent such access control technologies to confirm the security of the password file or other vulnerable elements of the system. They must be able to use or create software which circumvents access control technologies in order to determine the robustness of the security system.

The sweeping language of section 1201(a) will subject the system operator testing the security of their system to criminal penalties simply because they circumvented a technological control mechanism. This will likely discourage system operators from vigorously testing the security of their system.

In conclusion, the leadership that the United States currently enjoys in research and development of encryption algorithms, cryptographic products, and computer security technology may be seriously eroded by section 1201 as currently drafted. We urge you to adopt instead an "anti-circumvention provision" that restricts only circumvention related to infringement and will not reduce US competitiveness in encryption and inhibit the development of electronic commerce.

If you have any questions, please contact Lauren Gelman at 202/544-4859. We look forward to working with you on this important issue.

Sincerely,

DR. BARBARA SIMONS
Chair, U.S. Public Policy, Committee
Association for Computing

cc: House Commerce Committee

Mr. TAUZIN. The Chair will recognize the gentleman from California, Mr. Rogan, for a round of questions.

Mr. ROGAN. Thank you, Mr. Chairman.

Mr. Callas—I can't read your name plates from this distance, so if you will bear with me. Mr. Callas, just a moment ago I think it was Mr. Holleyman that was discussing encryption research and the inability to copyright an encryption algorithm. That being the case, how does it affect encryption research if this bill is passed?

Mr. CALLAS. Thank you very much. We typically do both analyses of mathematical algorithms, but we also test the software. Very little encryption gets tested as an algorithm. It gets tested as software. Anytime an algorithm, which is not protected by copyright, is embodied into anything, written down on paper, that paper embodiment is copyrighted. If it is put into software, that software is copyrighted, and, consequently, since all software is born and copyrighted, they are all copyrighted works because they are the embodiment of something that was not itself copyrighted.

Mr. ROGAN. What laws on the books currently protect you from an infringement of copyright suit?

Mr. CALLAS. Currently, fair use does. That is typically what we operate under. Anyone who has lawful access to something that they have bought the product themselves and they want to test it, this is, for example, how Consumer Reports does similar sorts of research on products, they go out and they buy something and they test it.

Mr. ROGAN. Let me ask you, that is what I thought was the basis for protection. But as I look at section 1201 of the proposed legislation, subsection D, it says other rights not effective. Nothing in this

section shall affect rights, remedies, limitations or defenses to copyright infringement, including fair use, under this title. Why is that insufficient to protect you?

Mr. CALLAS. Quickly, it is a circumvention. These tools are circumvention tools, and the section under 1201(a)(1) says no person shall circumvent a technological protection measure that effectively controls access to their work, and it doesn't say except as by fair use, et cetera, it says you can't circumvent——

Mr. ROGAN. But doesn't subsection D modify that?

Mr. CALLAS. That is the concern we have.

Ms. ROSEN. Mr. Rogan, we are talking about the commercialization here of products. There is simply no way that copyright owners are going into engineers' basements and figuring out what rabbit they are experimenting on. That is not the purpose of this section. The test here is very narrow about the products that are in violation, and I think this is the point Mr. Markey got to as well, that the Senate report makes clear that that is not the purpose of this test, and the thing you have to keep going back to is whether a product or a part of that product meets this test.

Mr. SHAPIRO. I have to disagree. The fair use provision you are referring to really has—basically eliminates fair use because it has nothing to do with part A. What it is saying is, in reality, is you can still argue fair use as a defense if you can somehow circumvent it, but circumvention itself, No. 1, is a criminal illegal act, and No. 2, you will not have the tools to circumvent because they are illegal under this law.

Mr. ROGAN. It is my understanding the Senate version of this bill incorporated some language that specifically addressed this. Would that alleviate the concerns of those who have raised an issue with respect to the issue of this.

Mr. SHAPIRO. I think the Boucher proposal is much more preferable.

Mr. ROGAN. If we were in court, I would move to strike the answer as nonresponsive. I appreciate the plug for the Boucher amendment, but with respect to the Senate bill itself.

Mr. SHAPIRO. The answer is no then.

Mr. ROGAN. Let me also ask Mr. Shapiro. Mr. Shapiro? I should have known. In your written testimony, you said quite simply the bill outlaws products that circumvent effective technological protection measures, section 1201(b) utterly lacks a definition of just what are the technological protection measures. And in looking at section 1201, subsection (2)(c)(a) and (b), doesn't that give a rather lengthy definition of circumventing a technological protection measure.

Mr. SHAPIRO. No, it doesn't. There is a definition in one section, but if you read the section itself, it doesn't say anything. There is no way on a scientific or engineering basis you can figure out what that means. It says anything that interferes with the right of a copyright owner. I don't know what that is. It is an infinite number of possibilities we cannot possibly respond to. You would have to respond to everyone.

Mr. ROGAN. Thank you, Mr. Chairman.

Mr. TAUZIN. Thank you, sir.

The Chair now recognizes the gentleman, Mr. Boucher, for a round of questions.

Mr. BOUCHER. Thank you very much, Mr. Chairman.

Mr. Byrne, I would like to propound several questions to you if you can have the microphone moved down to your position. First of all, tell me, if you would, if in your opinion it is economically feasible to configure a standard general purpose computer to respond to any and all anti-copy technology that a copyright owner might use, including some of the traditional analog based technologies, is it economically feasible to do that?

Mr. BYRNE. I would say as a general matter, a quick answer to that question is probably not. It is an extra burden that you would layer on top of the business of innovation altogether.

One of the things I would like to make, almost as an editorial comment, we are already sort of into this us versus them, and I think that is most unfortunate because from our perspective we are all in this together, and what I would urge is that if we take a very wide angle, expansive view of the notion of creativity innovation, movie companies and recording companies are our customers and so we are very concerned about their rights, but our ability to continue to innovate and provide them with the products they are going to use to leverage their content is a function of our ability to change and adapt. So from the service of protecting their stuff, we don't want to inadvertently make it difficult for us to give them precisely the platform they need to maximize the value of their stuff. So we are all in this together, we are ultimately all friends, so let's keep that in mind.

Mr. BOUCHER. We are going to keep that in mind, I think.

Pursuing your answer to the question, it would be very difficult to design the general purpose computer to accommodate and react to all of the anti-copy technology that may be created, some of which may be in conflict with other particular products.

Do you believe it would be helpful to have a provision in the law that says that manufacturers are not required to design their equipment and produce their equipment, so as to respond to all of these many different types of anti-protection technologies?

Mr. BYRNE. I think that would be helpful if you are referring to a no mandate, safe harbor, similar to what is in the Senate provision.

Mr. BOUCHER. Let me ask you about the Senate provision. The Senate provision, as I read it, essentially says here is an exception to the general rule, but it doesn't apply if the general rule applies. That is the way it reads. Now do you read it differently, do you honestly think the Senate provision gives you any protection.

Mr. BYRNE. It is unfortunately circular, and we appreciate the problem, and we have been scratching our heads about how exactly we solve this.

Mr. BOUCHER. Could I suggest a solution. How about the amendment we are offering that says that you simply would not be required to respond to all of the various anti-copy technologies that might be put into the market?

Mr. BYRNE. I think that would be helpful. Again, our concern is, you know, we don't want illegitimate devices out there anymore than anyone else does. So to the extent that somebody wants to de-

sign and leverage something that has only designed the pirate stuff, we want to get that off the market too.

Mr. BOUCHER. One more question for you, Mr. Byrne.

My good friend from Tennessee, Mr. Gordon, in his opening statement was talking about the virtue of having a three-pronged test to determine whether or not the manufacturer's intent was that the product be used to facilitate infringement, and whether or not, ultimately, the manufacturer would be held liable to the copyright owner, in the event that the product was used for an infringing purpose. And Mr. Gordon was suggesting that there was virtue in having all three of those prongs apply. Now the bill as written doesn't do that; the bill basically says that if any single prong of the three is satisfied, then the manufacturer is liable to the copyright owner.

Would you agree that we should make this test in the conjunctive, rather than the disjunctive?

Mr. BYRNE. Yes, I would change the "ors" to "ands" and, again, that would give us great comfort that what you are going to identify is the truly illegitimate material and you are not going to inadvertently complicate the ability to make innovative, legitimate technology. We think that would be very helpful.

Mr. BOUCHER. Thank you, Mr. Byrne.

Mr. Callas, in the brief amount of time I have remaining, let me ask this question. You have, I think, very eloquently stated the problem that the anti-circumvention provision of section 1201(a)(1), which makes a criminal offense punishable by up to 5 years in prison, any act of circumvention, even though it is not tied to infringement, you have spoken very eloquently about how that adversely effects your ability to engage in much needed encryption research in order to produce and put into the market trusted products. Tell me what would happen to your international competitive position, or that of the many companies in the United States that manufacture encryption products, in the event that the legislation is passed into law in the form in which it is before the committee today and was reported from the Judiciary Committee. If we don't, in other words, tie circumvention to the act of infringement, what does that do to the American encryption products industry?

Mr. CALLAS. Thank you very much. It effectively gives it away. There is hardly a week that goes by that I don't see a new Canadian or Israeli company that has U.S. offices. The rest of the world is extremely innovative, and this would tie our hands; we would not be able to make new products and they could make them.

Mr. BOUCHER. Thank you very much, Mr. Callas.

Mr. TAUZIN. Mr. Boucher, we sent you to the Judiciary Committee to keep them straight.

Mr. BOUCHER. Mr. Chairman, I did my best.

Mr. TAUZIN. The Chair recognizes the gentleman from Illinois, Mr. Shimkus.

Mr. SHIMKUS. Thank you, Mr. Chairman. I think this is one hearing where being a lawyer may be a benefit. I am impressed with my colleagues in the scrutinizing that is being done over the bill and the language. But let me get back to a simplistic frame of mind here for my simplistic mind that I have.

Ms. Rosen, in the future, how are you going to distribute your product in the future, primarily?

Ms. ROSEN. I think that we are going to have a combination of a variety of outlooks. Presumably record stores are not going away, but obviously online distribution is going to be a significant component of the ability to make a return on the investment, and that will be not just ordering the product online and getting your mail, but actually digitally downloaded and distributed.

Mr. SHIMKUS. In your opening comment, you mentioned you were working on things to—not for us to address, but that industry is trying to work to address. I am really focusing on Internet use. What are those steps?

Ms. ROSEN. Well, we have under review right now a variety of technologies that would identify our recordings and create unilateral protections and encryption-like systems to do that.

Mr. SHIMKUS. And I was interested in encryption because we have dealt with encryption quite a bit in this committee, with the intent on law enforcement issues, keys and certificates because of the desire of local law enforcement to be able to decrypt.

Ms. ROSEN. Right.

Mr. SHIMKUS. Has the ability for decryption hurt the piracy issue?

Ms. ROSEN. Two parts. One, the Senate did adopt an amendment exempting law enforcement activities from these device systems, and I would commend the committee to look at it. But on the second piece, we haven't begun encryption for any music online currently. So what we have right now are basically the CDs that are in the marketplace don't have any protection, they are essentially naked in the words of high tech, so that they can go online instantly. Presumably and hopefully in the not too distant future, we are going to be distributing protective orders.

Mr. SHIMKUS. What about one of my techno gurus down there at the end.

Mr. CALLAS. For law enforcement, there is a provision for law enforcement, but where are they going to buy the tools from? If we are prohibited from developing them, how are they going to get them?

Mr. SHIMKUS. They will buy them from overseas where they are produced all the time.

Mr. CALLAS. Yes.

Mr. SHIMKUS. I want to follow up, back to Ms. Rosen, in response to a comment from Mr. Greenstein. The ability of the individual user to have bits of information so that they can streamline a broadcast, do you feel that is a usurper of a copyright.

Ms. ROSEN. Well, Mr. Greenstein raised a very complicated but extraordinarily narrow issue. Right now what the online service provider, the Telco portion of the bill does, is say that the service provider isn't liable for multiple components of the signals that transpire. The problem that Mr. Greenstein has is a separate one that was addressed in the digital performance rights bill that Congress passed in 1995, which laid out a series of rules for artists and record companies to have the same level of copyright protection that all other copyrighted works have. There is a dispute going on right now with the Copyright Office about how to implement that

act and Mr. Greenstein has simply come to this committee to try and usurp the current activity that is going on in the Copyright Office.

Mr. SHIMKUS. Mr. Chairman, I think it is only fair to have Mr. Greenstein respond.

Mr. TAUZIN. Absolutely. We ought to hear from the usurper.

Mr. GREENSTEIN. Thank you very much. I mean, the streaming audio issue is a lot broader than just music, it is really any kind of work that can be streamed. We are talking about not just sound recordings, we are talking about video as well, and this is an overarching issue. Actually, it even goes to a lot of computer software as well. And Mr. Boucher has proposed something which I think is a very narrowly crafted and reasonable compromise that addresses this issue, so that when you already have the right to perform the work online, that just the bare fact that you have this technological incident that makes the performance smooth for you doesn't mean you are infringing copyright. This is not something that, you know, is a usurp issue, it is a lot broader than any of the issues before the Copyright Office or indeed just audio alone.

Mr. TAUZIN. Thank you. We have been called again to the floor. We have time for one more round of questions.

We want to recognize the gentleman from Opryland, final resting place of the real Elvis, Mr. Gordon.

Mr. GORDON. I have a strong interest in electronic commerce and think we are on the brink of explosion, and certainly want the United States to be the center of that. But for this to occur, there has to be a level of confidence of online transfers. And just like a merchant who is going to set up a shop would be afraid of going into a dangerous neighborhood, where their shop is going to be broken into, and the customer is going to be afraid to go to the neighborhood if they are going to get robbed, we have to make sure there is a level of confidence to both the merchant and the consumer.

Just for brevity, to move forward, to some extent, you know, our job here is choices, and to some extent our choices are between the bill as written and some of Mr. Boucher's thoughtful alternatives. What I would like to do is hear some thoughts about his suggestions in changing the bill and how they are going to affect just the electronic commerce aspect of it. And I would like to ask maybe Ms. Rosen, Mr. Byrne, and Mr. Vradenburg to start with your thoughts.

Ms. ROSEN. Well, I will address the last colloquy that occurred with Mr. Boucher's question with respect to the injunctive test versus the dysjunctive test. And that basically is saying these should all have and after them rather than and/or after them. As a practical matter, electronic commerce is going to be dependent upon security by the user knowing that when they put their credit card on the system, you know, no block manufacturer is going to be able to come in and take their credit card and come in and steal it for other things, and the copyright owner when they download the music that no black box is going to be available to go on the system and take the work. And unless that level of comfort exists, electronic commerce for music, anyway, is not going to happen, and the same for other copyrighted works.

The test for what the black box should look like is very specific. My problem with Mr. Boucher's construct is that I think it assumes a singular chain of command in the way products are put into the marketplace. I don't think that primarily designing or producing a product for the primary purpose of circumventing a technological order, that is wrong, why should that be attached to anybody else? That is geared mostly to the manufacturer. Marketing a product that is for the purpose of doing that same thing is also wrong. The person who is marketing it is doing a bad thing, that is wrong, that is in there. That is primarily geared to the retailers and to the distributors.

The final one has limited commercially significant purpose. Well, that is pretty specific. If there is no or limited commercial viable uses, then there has got to be something wrong with that product. That is kind of the catchall, if you haven't gotten everybody else in the distribution stream. So making it an "and" test, you are essentially saying the same person who manufacturers is also going to be the person who markets it, who is also going to be the person who distributes it and sells it. That is not the way the world works. So this test is already very narrow and by combining those three elements, you are creating a test that is effectively impossible to meet and is a road map for pirates.

Mr. GORDON. Mr. Byrne.

Mr. BYRNE. I think we would support anything that would sharpen definitions and improve the granularity with which we can distinguish good from bad. And I think our issue currently is that the burden of misinterpretation currently to the extent that these things could be misinterpreted, would fall on us.

Mr. GORDON. I think that is a very legitimate concern, but some of my efforts in the electronic commerce industry within telecommunications, I find the technology moves so quickly that the bad guys can move quickly too. And if you do something that is too precise, they just move over a couple of feet and have a new technology that gets around it, and that, without legislation, it moves so much slower and without a regulatory authority. Somewhere, there seems to be a balance between giving some flexibility, but also giving you the ability to know what you are doing that might be unlawful.

Ms. ROSEN. Mr. Gordon, just a comment. I think it is a legitimate question, too, about the burden, but he is wrong. It is absolutely clear that in this instance the burden is on the copyright owner or the plaintiff to prove that these tests have been met. The burden is not on the manufacturer to work around it.

Mr. METALITZ. Mr. Gordon, can I add one point on that. I brought a black box with me so that people can see what we are talking about. It is called Mr. Backup and it comes from Taiwan. Its purpose is to allow you to put in here a video game cartridge and disable its protective technology and copy it onto a diskette so that you can send it around on the Internet or do whatever you want with it. Now this meets the test of being designed primarily for the purpose of circumventing. It doesn't have any significant use other than to circumvent, but if we change the "or" to "and," this would be okay because I don't see anywhere on the box where it says it is marketed for the purpose of circumvention and if that

is the advertising used, this would be kosher and that can't be right.

Mr. GORDON. Mr. Byrne, how do we get around this nimbleness?

Mr. BYRNE. Again, it goes to the circularity we described earlier, by clearer definitions of TPM and no mandate provisions are going to be real helpful. We are sort of underscoring the very issue. We don't want that stuff on the market any more than they do. So we want to get to the same place, we just want to make sure really legitimate efforts to innovate don't get stifled. And your point about the basic technology is again precisely the point, and I am hopeful, maybe because I am involved in this industry, I am hopeful the very technology we are concerned about is going to be precisely the solution to some of these problems.

Mr. TAUZIN. Can't we just all get along.

Mr. CALLAS. Mr. Gordon, there is one other thing I would like to add, and that is that my company, for example, makes a product that is specifically designed to circumvent copyrighted works and those copyrighted works are commonly called viruses. But it is marketed, manufactured and designed specifically to remove viruses, and that is protection we need in the clarified language, too.

Mr. VRADENBURG. Mr. Gordon, I will just take 30 seconds here. We have worked long and hard on the subject, and as you pointed out, there are always problems of balance. Everyone wants precisely a greater precision and slightly greater balance in their direction. But as we move down this pike, every homeowner is becoming a manufacturer of intellectual property products, and this particular technology is going to allow any user, basically, to reproduce and resend anywhere in the world. And I think as we strike the balance from the get go, recognizing this Congress doesn't go away and this committee does not go away should the balance not be struck correctly, I think we ought to be striking the balance at the moment in favor of intellectual property owners, and in this case evoking from them the confidence they can put their products on the Internet without the danger that there will be the manufacture or the marketing or the proliferation of products that can defeat that.

I think the Senate version struck that balance, I think it struck it well. And to the extent we get greater precision, as you point out, there is the possibility of providing a road map for those who would proliferate products in the marketplace, which could defeat the protection of intellectual property and thus defeat the expanded applications of these electronic commerce products on the Internet and thus slow down the evolution of electronic commerce globally.

Mr. TAUZIN. The gentleman's time has expired.

Mr. White has gone to vote and should be back any second to continue the process. I ask other members, I think you better start moving to make the vote. I hope Mr. White will be here in just a second. I will hang around a second so he can keep it going. If not, we can recess.

Mr. SHAPIRO. I can filibuster for a second.

Mr. TAUZIN. I bet you can.

Mr. TAUZIN. You did want to respond?

Mr. SHAPIRO. Yes, I do want to respond. Here is a product which is in many congressional offices, including some of the leadership.

And what it does, it allows you to get on your computer screen a TV signal, and it also provides some additional data, and it provides the data in what is called a vertical blanking interval. Now that same vertical blanking interval is used by Macrovision, which is the most popular movie encoding protocol that exists. In fact, most VCRs respond to it. But if this legislation is passed, all of a sudden the legality of this product now goes into question and it will be up to a judge and a jury to determine whether any one of those prongs is met, and you can read the literature here on the package.

Mr. TAUZIN. We are not going to have the leadership of the Ethics Committee here.

Mr. SHAPIRO. The point is, there are lots of good, legal American products that are out there that all of a sudden would have this cloud of uncertainty.

Ms. ROSEN. It doesn't meet the test, Gary.

Mr. TAUZIN. We have 3 minutes, so I am going to have to ask you just to wait here for a second. Mr. White will be back very shortly. When he comes, I will ask the staff to ask him to reconvene the hearing. I will be back in just a second. Just stand down for a little while and I will be right back.

[Recess.]

Mr. WHITE. [presiding]. The subcommittee will come to order. In the interest of trying to move things along here, we will at least get my round of questions done while everybody else is voting. It is a tempting opportunity to do things by unanimous consent. I will try to avoid that.

First of all, I would like to start out with just a couple observations and then maybe get your reaction to some of my thoughts. In general, many of you said this this morning, the WIPO treaty represents an enormous positive thing for our Nation. We have done so much good in intellectual property. There are a lot of other countries around the world that don't share our vision of intellectual property, so it is a massively positive thing, and I think our main objective in Congress needs to be to get this ratified so we set an example for the rest of the world.

I would say to Mr. Byrne, we are all in this together, you are absolutely right to that extent. We are also at the stage of the process where the disagreements among ourselves are the ones that have to be resolved so that we can go forward, and I think that is what this hearing is about.

There have been several years of negotiation among the private parties that represent the industries that all you represent, and I know you have reached some agreements, but probably not 100 percent consensus on every single thing. We had a vote in the Senate that was pretty significant. We also had some fairly significant votes in the Judiciary Committee. We are at a point where we have had the bill for 2 weeks or 3 weeks. We need to make sure we perfect it to the extent we can, but it is really not a time, in my view, for a lot of radical surgery for a process that has been underway for a long period of time.

I guess I would like to start with you, Mr. Shapiro, and just make sure I get your sense of what it is realistically that we can do in this part of the process to improve it from your perspective,

without having to go back and convince 99 Senators that they need to change their mind, or everybody except for Mr. Boucher and the Judiciary Committee that they need to change their mind. What would be your best suggestion for us, realistically, for what we need to do here to improve the bill from your standpoint, but not throw a kink in the works to something that is really by and large a very important thing?

Mr. SHAPIRO. I think we need a clear definition of technological protection measure. We have to understand what we are talking about. We talked a lot about encryption and scrambling. That is one of the ways you must respond to encryption and scrambling. If we use those magic words, we will be very happy, as opposed to saying or anything else. It is the "or anything else" which gets to us.

The second thing I think we have to do is also make it clear that legitimate practices, such as dealing with the computer virus or fixing your product are acceptable. The third thing we have to do is make it clear that there is no mandate required. The existing articles of commerce have laid out in the Sony Betamax case that if there are significant uses for a product and it is out there on the marketplace, that should be a legal product. Those are tweaks to the general framework of the legislation.

I would also like to see it cleared, there are still rights of fair use. Even the registrar of copyrights himself has made it clear that that last portion of fair use doesn't apply to anything else. It is just a defense if you somehow can exercise your fair use rights. I think those have to be restored for the average American consumer, educator and researcher.

Mr. WHITE. Mr. Phelps and Mr. Oakley, I would be interested in your thoughts, too. This debate has been going on for 2 years or probably more than that, and I know there has been a lot of back and forth between the library community, the university community, the equipment manufacturers and everybody else who is represented at this table. And, you know, at some point, the process has to come to an end.

What is your sense about the one or two minor things that won't upset the apple cart? I don't mean to say minor, necessarily, but I would just like your perspective. Given where we are in these negotiations, what is it we can realistically do without upsetting the whole apple cart?

Mr. PHELPS. Thank you. First, the most important to me would be recognition of faculty in universities and colleges as users of the online service, rather than employees of the provider. That changes the legal structure fairly importantly from my point of view and preserves our intellectual freedom of our faculty that is essential to our ability to move the educational sector of the economy forward. And, again, I wish to remind ourselves that it is the most successful part of the U.S. economy that one can imagine in world competition, say, perhaps, except for professional basketball.

Mr. TAUZIN. You are saying education is?

Mr. PHELPS. Yes. Higher education in the United States is clearly the best in the world and it stands on that, in part, and I think an important part, because of our ability to not only produce and protect intellectual property that we create, but also to use it in a

fair use context, so that strikes me as a very important part about this. And if you will, putting faculty in as employees would just throw a lot of sand in the gears in our ability to carry that work forward. It would not be a lethal blow, but it would sure reduce our effect.

Mr. WHITE. And make your life a lot more difficult. I understand that.

Mr. Oakley, what is your thought? I am somebody who used the Georgetown University Law Library probably less than I should have.

Mr. OAKLEY. Well, you are always more than welcome.

Mr. WHITE. Thank you.

Mr. OAKLEY. The library community has a series of issues and concerns with this, that if we are to pick out a single one that was most important to us, it would be to deal with the anti-circumvention issue and to make sure that the prohibition against circumvention applied only to acts of infringement. In other words, that it applied to bad acts, not lawful acts. As it stands now, it is an absolute prohibition and prevents legitimate uses, along with the bad acts that everybody agrees we would like to prevent. So that I think is probably the key element that we would like to see changed.

Mr. WHITE. Thank you very much. My time has expired.

The gentleman from Wisconsin.

Mr. KLUG. Thank you, Mr. Chairman.

Mr. Shapiro, if I could, I would like your perspective on an observation from my part. We began, essentially, with an international discussion about how to prevent behavior that is bad, and have now ended up with a work product that really focuses on technology, and we also essentially started trying to figure out how to get bad actors in other countries to comply with current copyright law and instead have now focused a part of the legislation on regulating domestic manufacturing and research. Tell me how this, in your opinion, is going to chill innovation in your industry.

Mr. SHAPIRO. Well, I think it is going to move research and development activity offshore. I think the reality is if you are subject to going to jail, if you are decrypting, if you are trying to figure out how something works, why would you do it in the United States? If you can't even get the tools to do it in the United States, why would you do it here?

In terms of the need to make this for international purposes, which some of the witnesses referred to, Mr. Holleyman said this is the gold standard, Ms. Rosen said we must do the minimum, Steve Metalitz says it is not even a problem in the United States that we have here. This has nothing to do with anything in China, where in China you are talking about playback products and you are talking about clear illegal piracy, and we have supported every change in the strengthening of the piracy laws.

But what we are talking about here in the United States is the most rigorous standard because what we are being told is we want to set an example for the rest of the world. Well, the rest of the world in terms of the world negotiations on this treaty rejected the very draconian approach we are talking about. Indeed, the Assistant Patent and Trademark Commissioner, Bruce Lehman himself, has testified you don't have to go this route, you don't have to do

this, you can focus on conduct. Instead, this legislative regime is focusing on technology and it is focused on it in a very, very broad way. That is not necessary.

We were prepared to accept that technology must be focused on, but I don't think we have to go forward where the rest of the world will not and restrict U.S. technology and restrict U.S. manufacturing and restrict U.S. R&D and tie up the digital electronics world so all of a sudden we have to go overseas for our work.

Mr. KLUG. Give me one example where research might be cut short, one product line.

Mr. SHAPIRO. All encryption research. We are right now a world leader in how we deal with a lot of encryption products and how we deal with a very long series of code, which these gentlemen understand. I don't understand how we can maintain that lead if we are denied the tools to do that. In smart car technology, for example, we are not the world leader, that is going overseas. But in digital electronics technology, we are doing terrific as a country. We have several thousand companies in our association that are focusing on digital electronics. If they have to worry about going to jail if they are doing research, I don't understand how they can do the research. If they are denied the tools, how will they do the research?

Mr. KLUG. Mr. Holleyman is leaning out of his chair. But let me just go to the heart of this matter. Can you guarantee me that in this legislation we are not back in court with a repeat of the Sony case, that we are not changing the standard, and that we are not going to be back here 3 years from now with you guys suing those guys?

Mr. HOLLEYMAN. Mr. Klug, I think that the record is clear that the anti-circumvention provisions in this legislation are absolutely essential so that we do not cede a market for the development of special purpose devices that have the primary purpose of defeating copy protection. And I travel with a piracy chart that says that software industry was losing $13 billion a year due to piracy. I have a very real problem.

On the other hand, we have speculation about some new technology that might be implicated by these anti-circumvention provisions. I think that that is a red herring. It is clear from the hardware companies that are members of the Business Software Alliance that we believe an appropriate balance has been struck that ensures that general purpose computers or general purpose software would not, in any way, be implicated by this provision.

Mr. KLUG. Would you be willing to support an amendment that specifically exempted those products?

Mr. HOLLEYMAN. I believe at this point it is so carefully crafted an amendment like that is both unnecessary and could be harmful. And, finally, I again would refer to——

Mr. KLUG. Hold it. If it is unnecessary and won't cause any problem, how can it be harmful if you exempt products you have just said the law is not intended to interfere with?

Mr. HOLLEYMAN. I think if you look at the text of the bill, as well as report language, it is clear that general purpose products are not covered by this because they do not meet the primary purpose test of the bill, and, again, on the issue of encryption research, I

would very much commend to you the Senate report on this, which goes through all the ways in which encryption research and encryption research tools could continue to be used without any adverse impact by this legislation.

Mr. KLUG. I understand that, but we are not discussing the Senate bill, we are discussing the Coble bill which came out of Judiciary.

Let me back up. Are you telling me that under the changes in this law, we won't end up with another similar Sony case in court, we are not opening up a loophole that gets software folks inevitably suing manufacturers?

Mr. HOLLEYMAN. We do not believe we are opening any loophole like that. We are simply taking prudent steps to stop piracy that is occurring both here and outside the U.S.

Mr. KLUG. I want to touch on one other subject briefly, in just the minute I have remaining. I represent the University of Wisconsin and the University of Wisconsin similarly is very worried about some of the trend in this program and the ability to do research. Let me read something from the Consumers Union which summarizes the concerns I have heard from the University of Wisconsin. This letter says, quote, "It would be ironic if the great popularization of access to information, which is the promise of the Electronic Age, will be shortchanged by legislation that purports to promote this promise, but in reality puts a monopoly stranglehold on information."

Mr. Oakley, do you agree?

Mr. OAKLEY. I think that is clearly where this is headed. One of the things, if you sort of—we talk in very technological terms here, but if you really sort of look at what this is all about, it gives a total control over the information to the copyright owners and sets up a system for establishing a pay-per-view kind of set up. That is just a very different kind of norm in our society, compared to what we have in libraries today where we pay for the information and then many people can come and use it. Instead, we are establishing a regime that will lead us toward this pay-per-view kind of system and does establish the kind of total control that you are talking about, yes.

Mr. KLUG. Thank you.

Mr. TAUZIN. I thank the gentleman.

The gentleman from Pennsylvania, Mr. Klink, is recognized for a round of questions.

Mr. KLINK. It pays to get back early, Mr. Chairman.

Mr. TAUZIN. It certainly does.

Mr. KLINK. Mr. Holleyman, can you just—I just want to revisit this whole encryption research thing again. What does the Senate report language say in your interpretation of it, not technically, but in your interpretation, what does it say?

Mr. HOLLEYMAN. The Senate Judiciary Committee looked at whether or not the anti-circumvention provisions of this bill would act to prohibit legitimate encryption testing and essentially it is a very straightforward test. It makes it clear in the report that tools that circumvent for the purpose of testing encryption would not be prohibited, specific encryption algorithms would not be prohibited because they are not protected by copyright. It simply ensures a

very common sense test, which is if encryption is protecting a copyright work, in that context, you cannot test the encryption algorithm. You have to test it on a free standing basis. The analogy I like to bring, because I think oftentimes when we talk about issues of cyberspace, which I certainly care a lot about, we forget that we are dealing with basic common sense values.

If I want to buy a lock for my home or my office, which is precisely what encryption does, I go to the store and I test that, I look at consumer research. What people cannot do is they cannot come to my home and test the lock on my house.

Mr. KLINK. Let me just move over to Mr. Callas. Are you happy about the report language in the Senate bill? Is there any way we could come to accommodation on this?

Mr. CALLAS. By and large I am happy with it. There are a couple of things that I am unhappy with. One is the assumption that encryption is a mathematical work. It is almost never a mathematical work only. It starts from mathematical work and becomes an embodiment, just like the mathematics that defines how a radio works ultimately becomes a product itself, and products are covered by copyright and other intellectual property.

The other thing that I am worried about is that, if we take the analogy of the lock, if I want to buy a lock and take it home and test it, can I? If I want to buy three locks and take them home and see if one key opens them all, can I? I do not see that that is allowed; that if I intentionally put the key of one lock into another lock, that that is an attempt to circumvent.

Mr. KLINK. Let me ask, I mean, should this committee look at legislative language similar, maybe change it somewhat, rather than have just the report language in the Senate bill? Who would disagree with that? Is there anyone that would disagree?

Mr. HOLLEYMAN. I think at the present time we would disagree.

Ms. ROSEN. I am concerned about the same thing that Mr. Holleyman raised, which is creating a commercial marketplace for tools that you end up having no control over. I think the common sense approach about whether or not somebody is actually liable under the test that exists makes more sense.

Mr. BYRNE. If the report language was part of the bill, I would not be here.

Mr. KLINK. So it is that important to you.

Mr. Shapiro, you wanted to add something?

Mr. SHAPIRO. Senator Hatch's statement on the floor is actually—if that was the legislation, I think a lot of us would not be here. The problem with the Senate legislation is it had ambiguous report language, and the floor statement was much better.

The reality is there is a historical context here in the start of the Sony Betamax case, and there has been a whole bunch of, 15 years' worth of hearings and the focus on efforts to make products illegal, and the doom and gloom that came along never happened, the doom and gloom of products being bad for the software industry. Rather, they were very, very positive.

The motion picture industry and recording industry are here healthy today because of the VCR and because of CD and recording technology.

Mr. KLINK. I had a trip last fall with Henry Hyde in Judiciary and some other Members, and we want to Europe and talked about these issues and also witnessed some of the problems that they are having with piracy. We had a meeting in Venice with the people from Disney; and the story they told us about, actually the truck that would pick up their movie, they would make dubs on the way to the theater where they were going to begin showing it in a matter of days. So we are very serious about stopping this sort of thing.

My question, and I will start with Ms. Rosen and Mr. Metalitz, is there a mutually acceptable definition of "technological protection measures"? We kind of waltzed around that. You may start, Ms. Rosen.

Ms. ROSEN. He is probably more qualified to answer it, but I will gave you a layman's response.

Mr. KLINK. I am a layman.

Ms. ROSEN. Which is that the more complex a statutory definition is when it comes to actually talking about technology, the more quickly it is out of date. All this legislation tries to do is create a set of ground rules. The fact is that there is enough information in here about what an effective technological protection measure is that the operating guidelines should be satisfactory. I do not think that it is in anybody's long-term interest for Congress to try and write 6 pages of definitions, that we have no idea where technology is going.

Mr. KLINK. We have heard from Mr. Byrne. Let me go to Mr. Metalitz.

Mr. METALITZ. Mr. Klink, I would suggest this is a solution in search of a problem. It is a common sense matter. It is not going to be difficult for the courts or for anybody looking at this law to figure out what is an effective technological protection measure.

I should say I think Mr. Shapiro is right, there is a historical context here, the context that involves this committee and this subcommittee, and I think you should look back at that as well. In 1984 when the Communications Act was amended to outlaw the black boxes that steal cable television services, there was not a lot of hand-wringing about what was actually covered; it was any equipment that is intended for unauthorized reception of any communication service, no matter what technology is used.

In 1988 when that same principle was extended to satellite transmission, it was any equipment primarily of assistance in the unauthorized decryption of satellite cable programs. It did not matter what technology was used.

Mr. KLINK. So I understand that you just have a disagreement with Mr. Byrne, where he is on this.

Mr. Oakley and Mr. Phelps, are you still concerned, after what Ms. Rosen said about you would purchase the product and then the user—do you still have concerns about libraries and law schools and all these things?

In my remaining time, I would like to start with Mr. Phelps. If you give him the microphone, I would like to have a little give and take on that, because I do not think we have had a chance to have you interact with one another.

Mr. PHELPS. One of the fundamental things in carrying out research and also learning for students is the ability to browse in libraries. And that ability, once the first purchase, once the book is obtained by the library, in the old technology, students, faculty work their way through those in a very casual way until they know what they want to use.

If our ability to actually look at the material is diminished before we know whether we want to use it or not in any meaningful way, if we want to cite it or put copies of a picture or graph into our work, we cannot tell that unless we can work our way through the material pretty casually. So anything that circumvents our ability to just casually look at it is eventually throwing sand in the gears, to use my previous expression.

Mr. KLINK. Mr. Oakley, do you agree?

Mr. OAKLEY. Yes. The way I tend to do this is, I think about a library today and I think about a library in this new regime. When we acquire materials today, we buy the book, we unpack it, we do whatever we do to it, we put it on the shelf, and people come in and they can use it, pick it up, browse it. Maybe they will write something down that they find in it. Maybe they will take it and copy a page, whatever.

In the new regime, though, once we buy something and take it out of the package and we put it on the shelf, we have unwrapped it physically, but under this new regime it may still be, probably will still be wrapped in these encryption measures.

Mr. KLINK. Your concern, though, is someone will still have to pay for it.

Mr. OAKLEY. Exactly, sir.

Ms. ROSEN. I think again, as I said earlier, if a copy has been acquired lawfully, presumably that library if it is encrypted is going to have a key. And to the extent that additional use is made of that work that meets the fair use test of the copyright law, I do not see a copyright owner suing a library. It does not make any sense. Why would they?

Mr. METALITZ. There is a provision in the bill as reported by the Judiciary Committee that responds exactly to the scenario that Mr. Oakley was talking about. That is the Frank Coble amendment that says that libraries, uniquely, libraries and educational institutions may decrypt if they have no alternative way to find out what it is they are being asked to purchase, and if they do that for the purpose of deciding whether or not they want to acquire something, that is not a violation. So I think that issue has been dealt with.

Mr. KLINK. Mr. Oakley, is that not acceptable?

Mr. OAKLEY. I really need to respond to that because that does not deal with the problem at all.

What that basically says is that if we are thinking about buying something, we can gain access to it. That really is not the issue here. The issue that Mr. Phelps and I have raised is that once we have it already, we have paid for it, then will there be further payments required by students or others who need to use the material.

Mr. TAUZIN. The gentleman's time has expired. If someone else wants to respond, I will allow that.

Mr. BYRNE. Sir, I want to clarify. I am concerned that one of the ITI concerns would be mischaracterized and we want to be clear on

that. With respect to the clarity definition, we do not think that the alternative is between what is there and six pages of arcane technical definition. I think it really is much simpler than that. So we are really talking about wordsmithing.

Mr. KLINK. I understood that.

Mr. TAUZIN. The Chair recognizes Mr. Sawyer for a round of questions.

Mr. SAWYER. Thank you Mr. Chairman.

I have been particularly taken with the questions that surround the anti-circumvention question, and the regulation of the use of devices. I am always wary of over-analogizing, so would you just permit me the luxury for a moment and then perhaps respond.

It seems to me that about 550 years ago the Holy Roman Empire had a very powerful interest in not distributing printed material of any kind. It was particularly concerned about the broad sharing of information through a general community of scripture. That was when Johannes Gutenberg, about 550 years ago, produced the Bible in Mainz. Consciously or not, he was in fact undertaking, the very prohibitions that are listed in 1201(a)(2), and Johannes Gutenberg's actions had a powerful effect on western culture. It was the bridge from the Renaissance to the Reaffirmation and was a direct pathway in this country to the First Amendment.

The truth of the matter is, we still call it freedom of the press; and that in so many other areas I keep hearing the question that the technology has changed but the principles have not. It seems to me that for a very long period of time, difficult as it may be, we have dealt with copyright questions not by prohibiting the equipment that is used but rather by simply prohibiting illegal conduct.

What is wrong with that analogy in the present circumstance?

Mr. SHAPIRO. That analogy is perfect, Mr. Sawyer, and I am sincere about that. The Supreme Court has recognized that there are two points to the copyright law. One is to encourage the arts and sciences. The other is broad public access.

I stand here today very proud of the fact that my industry has done a lot to promote democracy around the world, for example in China, because our products have disseminated information. And to the extent those products are restricted and we can no longer have information, we are poorer off as a country.

It was 10 or 12 years ago that it was seriously debated in this Congress to ban the VCR. That was the case before the Supreme Court. This is not just artificial. We do not know what the next VCR is. We do not know where we are going with other products. I think your analogy is a perfect one.

Mr. METALITZ. Mr. Sawyer, I think the problem with your analogy, and I appreciate the effort to try to figure out where we are going in the future here, is that I do not think there is a single copyright owner, certainly not one here at this table, who is in the position of the Holy Empire in the 15th century. We do not want to keep our materials locked up. We do want to disseminate. We do want to use the Internet. We do want electronic commerce to thrive.

But the main threat to that is that some people are going to make it their business to find ways to steal the intellectual property that we put out on the Internet. In order to promote the

growth of electronic commerce, we need these technologies and we need these legal backups to try to put people out of business if they try to circumvent.

Ms. ROSEN. There is also, Mr. Sawyer, a presumption that what we do now is frozen in time until the Romans take over the world again. The reality is that the treaties call for effective technological protection, so that is our guiding post. That is the international standard, recognizing that the Internet does change the game.

And the reason it changes the game is because we are no longer talking about the pirate in the manufacturing plant in China. We are saying that, well intentioned though they may be, the 25-year-old sitting in their home can have the economic impact of the pirate in the manufacturing plant in China, just by virtue of the Internet.

So recognizing that we are not going to be able to go into every single home in the country—unless you want to give me the powers of law enforcement to do that, it is an alternative—but since I do not have that authority, and since law enforcement is not going to go and invade individual privacy, something I do not think this committee wants it to do, the best thing to do is to create the commercial disincentive, the financial disincentive to create tools to help the pirates.

Mr. OAKLEY. Mr. Sawyer, the library community does agree with your analysis completely. We remember it was not that many years ago when the photocopy machine was invented. A lot of people thought that its primary purpose was to circumvent copyright. And already in this colloquy it has been mentioned that it was even less time ago that the VCR was in serious question, and everyone knows now that it has had a tremendous impact on commerce really in that industry.

And so we certainly agree that what should be prohibited is bad conduct, not the technology.

Ms. ROSEN. The VCR would not meet this test. I just have to put this to rest once and for all. This is a red herring.

Mr. OAKLEY. Not now, not now that we know it has other purposes. But at the time it was invented, a think a lot of people had questions about that.

Mr. ROTENBERG. Mr. Sawyer, if I may, I think it is a good analysis. I have done work in the computer crime area and the cryptography area, and there was always the tendency in legislation in this area to want to criminalize the use of the device rather than the act, and I think it is always mistaken.

These devices are infinitely malleable. We do not know how they are going to be used and we do not know how they are going to evolve. It is perfectly understandable you want to criminalize bad acts. But once you separate the bad act from the device and you focus on the device, you will open up the door to some real problems.

I appreciate Ms. Rosen's concerns. Black boxes are for real. But let me just read for you the language in (a)(1). We are not talking about (a)(2) now, we are talking about (a)(1). (a)(1) says, "no person shall circumvent a technological protection measure that effectively controls access to a work protected under this title."

Now we are still trying to find the language in the Senate report that people have been talking about regarding encryption. But I can tell you this language is very easy to find, and this language says very clearly to people, not just manufacturers, to people, that you better be very careful what you do once this information is wrapped in these new protection measures; you may get yourself into some trouble if you do the wrong thing.

Mr. HOLLEYMAN. If I may comment briefly, we have in the software industry an incredibly active antipiracy program, not only outside the U.S. but here in the U.S. alone, where we lost $2.7 billion. Piracy of our works on the Internet has made that challenge more difficult and it has rendered it borderless.

Given the scope of that growing problem, quite frankly, it is difficult for me to understand why we would want to allow devices to come on the market or the type of passwords that I showed, that I downloaded from the Internet, to be out there to further the cause of pirating American products. And ultimately from a marketplace concern, I think you have to look what we have done as creators in this country. We want to have widely distributed our product. We want that product to get out there, only to do so in a legal fashion.

Mr. VRADENBURG. Mr. Sawyer, clearly AOL and the companies that are represented by the Ad Hoc Copyright Coalition have an interest in the widest dissemination of the greatest variety of works most freely worldwide, to make the current 60 million users of the Internet a hundred million or a billion within a few years. And I would simply ask the question: If in fact you would like to have the work of this committee replicated by the congresses and states around the world, would you rather start with a broader prohibition on manufacture and dissemination of goods whose primary objective is to circumvent these protections, or would you rather start with a set of protections around the world that said they could be manufactured and they could be marketed and we trust the governments of the world to go attack infringing conduct by users?

It is a difficult balance, I realize, because the arguments on both sides of this argument are extraordinarily compelling. But we are speaking here in part for the United States, in part what we as the United States are going to ask the other governments of the world to implement, and I submit it is going to be easier to evoke electronic commerce and the digital delivery of intellectual property goods around the world if we start with tighter protection.

And if we find that the hardware products necessary for the dissemination of those works are not evoked in the marketplace, I have enormous confidence that they will be, but if they are not, there is a way to tweak that. But if you start the other way, then I do not think we are ever going to get these products on the Internet to start with.

Mr. TAUZIN. The gentleman's time has expired.

The Chair is now pleased to recognize the gentlelady from California. I want to point out something. We, the high-tech committee over here, we have got three mikes at the table and we are working with a plastic device that does not work all the time.

The gentlewoman from California.

Mr. MARKEY. Mr. Chairman, may I make a unanimous consent request, and this is just for the record, that each member of the committee get a copy of Mr. Backup so that we can all test it at home.

Mr. TAUZIN. There is great objection.

The Chair now recognizes the gentlelady from California.

Ms. ESHOO. Mr. Chairman, I did submit a full statement for the record and I appreciate the fact that all copies will be made a part of it.

I especially want to greet today, and it was in my opening comments, most especially two of my constituents, Mr. Byrne of SG and John Callas of Network Associates. There have been a lot of questions that have been asked, and I think that I want to get to something between what seems to be a point of contention between libraries and some of the comments that have been made by Hilary Rosen and Mr. Holleyman.

To Mr. Oakley: Are you reacting to the provisions that are in the House bill as it came out of Judiciary and what is before us, and do you agree with the language that is in the Senate bill?

Mr. OAKLEY. I am reacting to the House bill.

Ms. ESHOO. Tell me about the Senate bill and why you support it, and I think that that might be somewhat instructive to the Members that are here.

Mr. OAKLEY. I did not say that I supported the Senate bill.

Ms. ESHOO. Is there anything you support in the Senate bill? I am not trying to be cute. I am trying to get to what I think is a point of contention that is very important.

Mr. OAKLEY. As we understand it, on the anticircumvention issue the committee reports have indicated that their intention is to go along with the kind of thing that we have been suggesting, which is to prevent circumvention for bad acts rather than for lawful acts. But if that is the intention, we think it needs to be included in the bill.

Ms. ESHOO. Let me ask you this question, then. It is still a little murky in terms of your response. In your view, are you asking for something more than what you already get now vis-a-vis books? How does it differ from the protocol, the use of materials, et cetera, that libraries have today?

Mr. OAKLEY. I believe that in good faith we are asking for an extension of the same kinds of rights and privileges we have today to be translated into the new environment. No expansion.

Ms. ESHOO. None?

Mr. OAKLEY. No.

Ms. ESHOO. All right.

Mr. Holleyman and Ms. Rosen, would you maybe go back. I know that the whole issue of, you know, picking locks on books, so to speak, or it has been characterized that way, I mean it is a serious series of statements that have gone back and forth vis-a-vis the questions that have been asked. Would you comment on it?

There are so many issues that have come up today, I feel like a referee at this point, but it is my job. Can you comment on this issue relative to copyright? In your view, is there anything that extends beyond what libraries do or how they conduct themselves today relative to materials and what protects them and you?

Ms. ROSEN. Let me start by saying I actually personally believe that there is no more complicated or legitimate issue as we go forward on the Internet than trying to determine what educational and nonprofit library uses are and how you balance those uses against the legitimate interests of the creative community. Having said that, they are terribly complicated and an awful lot has not been done yet.

One of the things that I wanted to raise before that was adopted in the House Judiciary Committee, which I would have thought and the members of the committee thought would give significant comfort to the educational institutions and to the libraries, was the elimination of any monetary or criminal damages if a mistake is made. Nobody else got that.

So this issue that they are raising about being concerned that they may somehow be liable in the long term for some unknown violation or innocent violation, that is simply not going to be the case because the Judiciary Committee eliminated penalties against that.

Ms. ESHOO. Would you comment on the area of essentially pay-per-view as well, include that?

Mr. HOLLEYMAN. Perhaps I can make some comment, because in some ways that is how software can be used within an organization. All you need to have is one copy of the software and then licensing terms are set in the marketplace, whether with a university or corporation or government, which allow you to determine how many users can have access to that lawfully and how often they can use that copy.

So I believe that there are marketplace solutions. At the end of the day, our concern is that one copy of a computer program in a library or a university, without restriction and without restriction on access, could in fact yield hundreds of thousands of pirated copies.

Mr. OAKLEY. May I follow up?

Mr. TAUZIN. The gentlelady's time has expired. We always allow as many responses as would flow.

Mr. OAKLEY. I just wanted to follow up on the issue that you raised, because one of the things that we see is that the rights of owners are being expanded here in this creation of a regime that would allow total protection.

In the past, once works were put out, they were available. You could go in a book store, you could browse it. You could go into a library and read it, make a copy of a page, do what you needed to do with it. And the limits of what you could do then were established by the copyright act, which created a series of limitations and exemptions on the rights of copyright owners, fair use, the library exemptions, first sale, and so on.

In this new world, though, the policies that will be followed are not the policies established by the Congress but the policies established by the individual copyright owners, so their rights have been expanded to give them total control. And it is because of that that we want to be sure that we are able to carry the rights that we have in the paper environment over to the electronic environment.

Ms. ESHOO. Well, Mr. Chairman, I know that my time has expired. I have found this to be very interesting. I think that there is still a lot more to pursue.

Mr. TAUZIN. Absolutely. We can have another round if you would like to stay.

Ms. ESHOO. Good. I was here from the beginning, so I will stay for another one.

Mr. TAUZIN. The Chair will be next in the second round. The gentleman from Massachusetts has begged me to go first. I love when he begs. So I would yield to my friend from Massachusetts.

Mr. MARKEY. Thank you, Mr. Chairman, very much. I have the President of the United States in my district right now heading toward Lincoln, Massachusetts, in the dedication of the Henry David Thoreau Center at Walden Pond, and it is a big deal to Concord and Lexington and Lincoln. And I cannot be there, and I am going to have to make a few phone calls, if you understand what I mean, just to let people know that I am unavoidably detained voting on the budget today.

Mr. TAUZIN. You could be there on the Internet.

Mr. MARKEY. Henry David Thoreau would, I think, appreciate the Internet. He was into cyberspace before anybody else was.

If a large software company controlled the lion's share of the operating system marketplace in America, just hypothetically speaking now, and this company enveloped that operating system with a protective wrapping, how could competing or even noncompeting add-on applications be developed without a root examination of the system to know how these products would interact with the operating system? They would have to circumvent the protection, would they not, in order to understand that?

Let me ask Mr. Callas first, and then any others that wish to respond. Mr. Callas.

Mr. CALLAS. Absolutely, they would have to do that.

Mr. MARKEY. Okay. Thank you Mr. Callas.

Now, who wants to respond to him? Mr. Holleyman.

Mr. HOLLEYMAN. I would say that the access provisions, the anticircumventions simply provide that someone who does not have authorized access to the work cannot circumvent. All you would have to do is, one, get access to legal copy. Then your full rights apply. Second, there is a provision that was added in the Senate that makes it clear, which we would support, including here, that where you need to do something for purposes of interoperability of computer programs, that that would continue to be permitted as exists under current law.

Mr. MARKEY. So you would guarantee, then, that the competition would gain automatic access to this theoretical monopoly's control over the operating system?

Mr. HOLLEYMAN. Once they had a legal copy, yes, sir.

Ms. ROSEN. You can imagine that Senator Hatch had a personal interest in making sure that this decompilation provision exists.

Mr. MARKEY. I do not know what you mean. Just a joke. Thank you.

Mr. Hinton.

Mr. HINTON. The Senate language has been carefully drafted around the notion of reverse engineering, and there has been a lot

of negotiation and a lot of work to ensure that that language is tight and accurate and we support that language.

Mr. MARKEY. Mr. Callas, do you think that the projections are in the Senate language that would adequately give access to the information that would be needed?

Mr. CALLAS. I am very happy with what Mr. Holleyman was saying. However, I do not see it in the current bill.

Mr. MARKEY. What is the deficiency in the language that is used in the Senate to accomplish that goal?

Mr. CALLAS. I have not seen the actual Senate language itself. I have heard it talked about here.

Mr. MARKEY. You have not read that before you came here today?

Mr. CALLAS. This is interoperability, and the interoperability portions are good. My concerns are, though, about the stark language of circumvention in 1201(a)(1), where it says you cannot circumvent, period, end of sentence.

Ms. ROSEN. It is an exception to that language.

Mr. VRADENBURG. Mr. Markey, this was dealt with at some length in the efforts and discussions on the Senate side, and so we are supportive of the Senate bill.

Mr. MARKEY. Mr. Metalitz.

Mr. METALITZ. In response to the concern about 1201(a)(1), as you know, Mr. Markey, amendments that were adopted in the Senate begin "notwithstanding the provisions of 1201(a)(1)," so this is an exception to that language.

Mr. SHAPIRO. Well, you first have to have the tools to be able to do that; 1201 bars you from the tools.

Second, we are not only talking about devices here, we are also talking about components. And as you know, electronic devices have many, many components.

Third, as you stated in your question, it is not just one software company that can do this. You can do this with any product. You could put on a 3M sticky Post-it note and say "this is a technological protection device" because it will not allow you to copy it, and under the language you have to follow that. You cannot record, you cannot get around it. The limits here are very broad.

What Congress does when it gives out copyrights, it gives out a monopoly. There is no question about that. That monopoly has been extended over and over and over again, to now, if the recent House legislation gets to the Senate, it will be over 75 years. So this will further strengthen that monopoly because you will not be able to figure out what it is that is in the copyright on computer software, and that is one of the concerns here.

I think Mr. Sawyer's analogy was perfect before. It did contrast the monopoly power and your total ability to control what you distribute as a copyright opener, versus the other competing interests such as broad access to information, freedom of the press, et cetera. And I think that tension has gotten very, very out of sort because there are very few people on the other side. We are here as manufacturers. Consumers groups have sent a letter. The reality is there is consumer interest and broad public access which are not being very well represented.

Mr. MARKEY. I think my time is up. Mr. Metalitz.

Mr. METALITZ. Mr. Markey, again in response to the sticky that is the technological protection measure, we heard over and over this is not defined. But if you look in 1201(b)(2)(d) it tells you what is an effective technological protection measure. It is one that in the ordinary course of its operation prevents, restricts, or otherwise limits the exercise of a right of a copyright owner. That sticky does not do it. It is not a technological protection measure. It has nothing to do with this bill.

Mr. ROTENBERG. Mr. Markey, if I may, I discuss in some detail in my statement how a cookie that is used on a web site could run afoul of 1201(a)(1), and I do not mean just the hardened cookie or the copywritten cookie. I mean a cookie that controls access to a web site, that is a technological protection measure. And if you delete it, which is circumvention under the current bill, you are violating 1201(a)(1).

Mr. MARKEY. Thank you, Mr. Chairman.

Mr. TAUZIN. I thank the gentleman. The Chair recognizes himself quickly.

I want to hit this I guess in as plain talk as I can. I grew up in a bookmobile, okay? Honestly. Every Tuesday the bookmobile came to Chatville, Louisiana, and my mother and I would go into that bookmobile and we would borrow every single book they would allow us to borrow. My mother does not have a high school education. I think she is probably one of the best read woman I know, because we lived in that bookmobile.

It was literally my entry into the world of education in a real sense, living on a bayou in Louisiana. I do not want to play poor boy to you, but mom and dad lived below the poverty line all their lives. We did not buy a lot of books. We borrowed them from the bookmobile.

So I ask it as cleanly as I can, as plainly as I can, for purposes of kids growing up across America who probably want to know a clean, clear answer to this. Under this new regime, will kids be able to borrow books from libraries without having to pay to read those books? Yes or no?

Mr. METALITZ. Yes.

Mr. TAUZIN. Mr. Metalitz, you say yes. Mr. Oakley, do you say no? That is what I want to know.

Mr. METALITZ. Nothing in this bill would stop that from happening.

Mr. OAKLEY. I think it is very clear that the answer is no, because this establishes the regime which allows the copyright owner to control all those subsequent uses. If somehow they decide that it is okay, then it will be okay. But if they decide it is not okay, then they may have to pay $2.95 to read an article or $3.95 to check out the book.

Mr. TAUZIN. Is that the correct answer, any one of you who are supporters of the language of the current bill?

Ms. ROSEN. I think that the answer that Steve gave is the correct one. Nothing in this bill will change what might happen in the future from happening.

Mr. TAUZIN. What does that mean? Does that mean that what might happen is that I get charged to read a book?

Ms. ROSEN. It means that this bill does not hurt libraries.

Mr. TAUZIN. I want a simple answer to the question I have asked. It may not hurt the library. But will it hurt the user who, in the current world of things, would borrow a book without having to pay for the right to read it? Will it hurt the users of libraries in the exercise of the current right to borrow a work and read it rather than having to buy that work to read it? Yes or no?

Ms. ROSEN. No, and this is why, and I understand that you want it to be simple. But the reason why it will not is because libraries will always have to, just like they do today, lawfully acquire a work. If what libraries want to do in the future is have one copy of a work and have one national library so that the whole world can access that work via the Internet, then they cannot do that. That is unlikely to work because nobody is going to invest the time.

Mr. TAUZIN. I do not want to deal in the hypothetical. I want to deal with the real hypothetical where the library in Thibodaux, under the new digital world, under this bill has a right under the Frank amendment to go and browse and decide they want to buy the book. They buy the book. Now they own it digitally. And I want to borrow it in Chackbay, and I want to contact my library, borrow that book, and read it. Can I do that in this world without someone requiring me to pay for that right?

Ms. ROSEN. Absolutely.

Mr. PHELPS. There is a particular issue in the university and college world that strikes me where the answer is no unequivocally. A lot of these contracts and arrangements for access to encrypted or digital data bases and other such objects have the ability to use within well-defined communities, and we have moved toward those with consortium buying where we reach agreements with the sellers of the copyright-protected objects. There is no problem with that.

The analogy breaks down completely when you go to the issue of interlibrary loan. And in fact, when you come to the point of saying we are going to define the use of this data base or this encrypted version of this device or this copyright object to this set of users, you suddenly block the ability that we now have, very widespread, have interlibrary loans all across the country. I can go to a library from the University of California-Berkley or Harvard or Cornell University in my own State, and borrow a book from them that they have legally acquired; and unless the contract that Cornell or Harvard or whomever acquires with the manufacturer allows that interlibrary loan, then that is going to be blocked.

Mr. TAUZIN. Let me just stop everything for a second. I want to draw an analogy. You see, we do not have this problem as much with movies and recordings. I mean, we do borrow recordings from libraries and movies to some extent. But in the world of recording music, in the world of movies, we generally assume those things are going to be provided for us over commercial airwaves, in which case we can just listen to them and enjoy them, or we are going to have to pay for them to use them and enjoy them.

When it comes to books, we are coming out of a different world into this new world. We are coming out a world where there is extensive borrowing from libraries—library to library, kids from bookmobiles, as I pointed out—and now we are entering a new world. And I am getting two different answers from you as to whether

this new world will allow kids to still borrow books or whether in the future they may have to pay for everything they read. And I think we have got to be entitled to a clear answer on that before we move.

Mr. METALITZ. Chairman, may I try to expand on my monosyllabic answer. Mr. Oakley keeps referring to the new regime and the new regime will do this. And as I think about it, I think we are confusing two things here and that may be why you are getting two different answers. We are confusing technological and legal developments.

The technological developments today make it possible to have a pay-per-view or pay-per-use system for many types of products. That was not true when you were visiting the bookmobile in Louisiana. If I did not know better, because I know Professor Oakley's state-of-the-art——

Mr. TAUZIN. Let me stop you there. That is not so. The bookmobile could have charged me. The owner of the book could have signed a contract with the library that only the book could be used in a library, and if not, if they were going to loan it to me to take it out of the library, I would have to pay for it. But that never happened.

Mr. METALITZ. That never happened. That never happened because the market of selling to libraries, that would not have made any sense.

Mr. TAUZIN. The reason why I see the tension coming in the digital age is that when I borrowed that book from the library, the author of that book had little fear that I was going to copy it and distribute it to a lot of other people. But in the digital age it is entirely possible that one of us might borrow a book from a library and conceivably hurt the author's rights to compensation by distributing it widely to other people in the digital format. There is tension there, and I do not know that this bill resolves it very well except to say we have got to count on the courts and the goodwill of the marketplace to settle it.

Mr. METALITZ. You are absolutely right, Mr. Chairman. The technology does create that tension. It is challenging the role of libraries. Professor Oakley's library looks very different than it did when I went to Georgia Law School. And that is going to continue. But this bill, this legislation does not create that problem.

Mr. SHAPIRO. Mr. Tauzin, I agree with you. We are moving with this legislation and even with the digital age toward a pay-per-use era. Mr. Metalitz said earlier, the marketplace will determine that. There is no question about that. It is not only for the books but also for the video products.

This bill allows a free, over-the-air broadcaster basically to encode a signal and require that we respond to it in a way where you cannot defeat it unless you do certain things. So there are ramifications by forcing the technology to respond that do restrict use, so the digital era may be a pay-per-use era.

Mr. VRADENBURG. Mr. Chairman, if I may comment. If the analogue were today's world and you bought a digital copy, that one digital copy could be loaned to one person at a time; and like the use of a library card, the authorization to get that one copy, then you have a direct analogue.

But what we have in the new world I think is both the great opportunity and the risk, but the great opportunity that when a library buys a digital copy it can make it available to multiple library users without buying multiple copies. And in that context, you have changed the marketplace in a way. You have probably made a much broader dissemination of these works accessible, probably at a very low or zero cost, but you have made it more widely available.

And the great dilemma here I think for copyright owners is that when the University of Shanghai buys its one copy, it can immediately issue virtual library cards to the entire world. And if in fact that happens, then you have destroyed the underlying marketplace in the products.

So we have a situation here where I think it is unclear how this marketplace will develop. But I submit it is going to be one that when the library buys a digital copy, there will be a wider dissemination of that work within the library even if, and I submit the possibility, there may be a small per-use charge, because it will be less than going out and buying that book in the marketplace, buying that digital copy in the marketplace.

Mr. TAUZIN. I will recognize Mr. Oakley. Then I have got to turn to my colleagues.

Mr. OAKLEY. The truth is the people sitting here at the table cannot give you the assurance you want that there will not be the kind of charges that you are asking about. They cannot give that you assurance because whether or not there will be subsequent charges depends on whoever put the wrapper around the work in question, and it is totally up to them. It is not up to us under this new system, and so there is no way you can get the reassurance that you are looking for. It is possible and it is very likely, in fact, that there will be such charges.

Mr. TAUZIN. The gentleman from Virginia is recognized for a round of questions.

Mr. BOUCHER. Thank you very much, Mr. Chairman.

I want to begin this last round of questioning that I have by first of all complimenting the members of this subcommittee and also the members of the panel of witnesses that we have before us today for what has been, I think, a very appropriate and in-depth focus on a very important set of issues. And I will say that this is the first time in the debate on these measures in the House of Representatives that this focus has been brought to these matters, and I am very appreciative of what has happened here this morning and this afternoon.

I want to return briefly to the section 1201(a)(1) prohibition on any act of circumvention of a technological protection measure for whatever purpose, and stress again that no matter what the purpose, even if it is a legitimate purpose, that act of circumvention becomes a criminal offense. Even if that purpose is something that today is fair use under this bill, we would criminalize that conduct and make the mere act of circumvention for any purpose a criminal offense.

I understand that in the Senate bill there was an attempt to address this problem with regard to reverse engineering. And the first question that I have for Mr. Callas or Mr. Byrne or whoever

would like to answer is whether or not the Senate bill effectively dealt with that issue, just for reverse engineering, and then I have some follow-up questions about other uses.

So Mr. Callas, Mr. Byrne, would you care to respond, and Mr. Phelps perhaps?

Mr. CALLAS. I am happy to respond. We are in fact happy with the reverse engineering portions.

Mr. BOUCHER. Okay. Now the Senate bill, as I understand it, did not address the other kind of uses that we have talked about today, including encryption research. Is it fair to say the Senate bill did not address that?

Mr. CALLAS. It does not. The Senate report language does, but the Senate bill does not.

Mr. BOUCHER. Does the Senate bill address the other kinds of uses that circumvention might be put to that we would all deem are legitimate, that we have heard some discussion about today, beyond encryption research and the issue of reverse engineering?

Mr. CALLAS. My understanding is that it only covers reverse engineering and circumvention for the purpose of disabling pornography, and that no other form of circumvention is allowed.

Mr. BOUCHER. So any other form of circumvention would become a criminal offense without regard to intent, without regard to purpose and whether or not it is for infringing a copyright?

Mr. CALLAS. That is correct.

Mr. BOUCHER. Well, the whole goal of this legislation, as I understand it, is to implement the World Intellectual Property Organization's treaty on protecting copyrights. And so why should we not simply tie the act of circumvention to the infringement of a copyright? What on earth could be wrong with that? Who could disagree with that very direct principle?

I would like to ask Mr. Metalitz if he has any conceivable disagreement with linking the act of circumvention to the infringement of a copyright.

Mr. METALITZ. I will disagree with it first, but I think I may not be the only one. I think the short answer to your question, Mr. Boucher, is that that would not be responsive to what the treaty requires. The treaty is called the WIPO Copyright Treaty and the WIPO Performances and Phonograms Treaty. But I think if you look at the text of the treaty language, it requires countries to provide adequate legal protections and effective legal remedies, adequate and effective tests against the circumvention of technological protection measures that are used to control acts with respect to works. It does not say, as for example the provisions on copyright management information say, that those acts of circumvention had to be tied to infringement.

So if the United States were to adopt legislation that only outlaws acts of circumvention that are tied to infringement, it would not be in compliance with the treaty. It would be setting an example for other countries where, as we have said before, they will be looking to us for a model——

Mr. BOUCHER. Mr. Metalitz, I understand your answer, but let me just say to you, the entire purpose of the World Intellectual Property Organization treaty is to protect copyrights. Would you agree with that?

It would seem to me that any act that punishes circumvention when the purpose of the circumvention is to infringe a copyright would be effectively implementing that treatment. It is hard for me to imagine that the treaty goes beyond that to say that circumvention for the purpose of encryption research is required, that we have to punish that in order to effectively implement the treaty. That simply is not within my reading of it. But let me see if there are others on the panel who would like to respond to what you just said.

Mr. METALITZ. Can I first respond in terms of what this subcommittee has done in the past.

Mr. BOUCHER. I think what you said, Mr. Metalitz, was that this was necessary in order to implement the treaty. Is there anyone on the panel who has a different idea?

Ms. ROSEN. Well, I would have a different perspective. It is simply common sense, implicit, Mr. Boucher, that if you are going to have an effective technological protection system for a copyright owner, who is the one who has the authority under this statute to implement such a system, that the circumvention be related to that. I mean, who is the defendant under your hypothetical scenario? Who is the plaintiff and who is the defendant?

Mr. BOUCHER. Under my scenario the plaintiff becomes the owner of the copyright, and I have no problem with retaining the criminal nature of this act assuming that the circumvention is tied to infringement. Then the state could become the plaintiff in a criminal proceeding.

All that I would propose that we change is to say that the only time that circumvention would become a criminal act is when it is for the purpose of infringing a copyright. And then that act could be prosecuted by the public authorities, just as the public authorities are expected to prosecute acts under the current text for any kind of circumvention without regard to its purpose.

I want to ask Mr. Callas and Mr. Byrne for their remarks.

Mr. BYRNE. I think what you are getting to is the issue of the focus on behavior versus technology. And ITI in particular was concerned about focus on technology, and we tried to approach this debate by first trying to figure out essentially what were our principles, if you will, to sort of guide us through this.

One of them was we thought, all things being equal, we would prefer a focus on behavior versus technology. But ultimately we did try to take a practical, wide-angle view of the problem, and we are willing to support some focus on technology provided that we got the sort of safety nets and safety valves in terms of clear definitions with respect to like the no mandate, the technological protection measure and the safety valve for reverse engineering.

As long as we get some balance in this approach, then we are willing to do something that we would otherwise, all things being equal, prefer not to.

Mr. CALLAS. We are very sympathetic with the concerns that the content providers have, if for no other reason than when they buy their locks they probably are going to buy them from us and we want to make effective locks for them, and we do not want to make loopholes that can be used as an excuse for a violator to say, "I was not violating. I was researching." We think there are ways around

that, but we also think that the changes to the circumvention provision need to be narrow, but they need to be there.

Mr. BOUCHER. Thank you, Mr. Chairman.

Mr. TAUZIN. The gentlelady from California is recognized.

Ms. ESHOO. Thank you, Mr. Chairman.

I want to get back to something that I started with earlier with the question that I asked about the libraries. One of the phrases, Mr. Oakley, that you used in response to something else that was asked just a few moments ago was to mention the wrapper around the product.

If libraries are asking to be allowed to essentially pick locks for fair use, how is it going to help you when the locks become unbreakable? I mean what will you do then to provide continual access for library users? Do we need an amendment to the WIPO, or what do we do then?

Mr. OAKLEY. That is why this whole approach is troublesome.

Ms. ESHOO. Yours or someone else's?

Mr. OAKLEY. Certainly not mine.

Ms. ESHOO. The thing I really want to explore is how, again going back to my original question, if you are moving out into an area that is beyond what libraries so magnificently have enjoyed, I mean, who is going to be against libraries and the use of materials, I mean just on the surface of it?

We are moving to a new paradigm now, and what I am trying to determine is, how fair is it in terms of where people want to go, in terms of both the protection of the genius of America, but also how in the new paradigm you will make use of and how users will make use of what you contain in a digital library?

Mr. OAKLEY. The problem with this is if you looked at it from a policy level.

Ms. ESHOO. I am trying to.

Mr. OAKLEY. Okay, exactly. At a policy level, in the past there was a balance of rights. Rights were given to copyright owners and those rights were then limited in certain kinds of ways for the benefit of the public. In a world where the locks are unbreakable, where total control is given to the copyright owners, that balance of rights——

Ms. ESHOO. But let me ask you what you want to do with it. When you pick the lock, when you want to break the lock, as you just characterized it, what are you going to do with it then? Why do you need to do that? Are you going to disperse half a million copies? What are you going to do with it?

Mr. OAKLEY. We want to allow users to be able to use the materials in the same way that they have in the past, students to do research for papers. You are shaking your head like I am not getting to your point.

We really have no different objectives today than what we have always had in the past.

Ms. ESHOO. Does anyone else want to comment?

Ms. ROSEN. Ms. Eshoo, this also goes to the chairman's question. Right now, under current technology, today, any library representative at this table could take a book, put it up on the Internet, put it on a bulletin board and distribute to members all around the

country, in Thibodaux, Louisiana and Santa Clara, California, it doesn't matter. That is what they could do today.

So the difficult question is what does this bill do to change that. Well, the answer is, under copyright law, it doesn't change anything. If the library is liable today for that practice, it would be liable in the future.

Is the answer making the library buy a thousand copies of that work? I don't know the answer to that, or whether the answer is having the library have some rules about multiple distributions of copies and who they go to. That is something the libraries are going to have to figure out because the current copyright law requires that. The future of copyright will require that. The only thing this bill does is simply say that the manufacturers of a device cannot create a system that they can sell to libraries to allow them for the pure purpose of circumventing a copyright owner's protection to do that, to distribute to 100,000 places.

Ms. ESHOO. And I don't know if there is, you know, agreement or consensus here, whether it is a library, whether it is the music industry, whether it is Silicon Graphics or anybody else, my wonderful constituents, I don't think that the law should allow anyone to circumvent, and so I am not just picking on libraries. I mean, you know, you have to live within a framework now relative to copyright. You cannot do anything that you wish to do with whatever you have in the name of access for the users of libraries. There is a protocol or laws that direct that. So, you know, everyone here at the table, I think, is in some way kind of scrambling for a little bit of a leg up, based on what they think someone else may do, but that doesn't give libraries or anyone else, I don't think, the room to move to a new territory to do something that they weren't allowed to do before.

Mr. SHAPIRO. I agree with that, Congresswoman Eshoo, but what this law does is so different. It gives copyright owners unfettered, complete and total control over the distribution of their work and takes away from consumers their rights to go to a library and exercise their fair use rights.

Ms. ESHOO. I don't hear that, though.

Mr. SHAPIRO. Fair use is being taken away because you won't have the technology to access. If you can't access, there is no fair use.

Ms. ESHOO. So you want a technology that will break the lock so that it can be used?

Mr. SHAPIRO. It is not break the lock, it is to maintain the access you have today.

Ms. ESHOO. That is a twist on words. I mean, is it a lock or isn't it?

Mr. SHAPIRO. It is not a lock today in the libraries, is it?

Ms. ESHOO. But there is technology, encryption, that wraps around something to keep it safe, and you are saying you should be able to walk around with a pick.

Mr. SHAPIRO. No, if it is just encryption, that is fine. We will respond to the encryption, we won't sell products that go around the encryption. We are more than willing to do that, but what we are not willing to do is be totally stopped from selling products which

make a product visible or usable or workable. And if libraries can't have their works accessed, what good is buying the product?

Ms. ESHOO. And what company are you with?

Mr. SHAPIRO. I represent the Manufacturers of Electronics Products.

Ms. ESHOO. What exactly do those electronics products do? Describe it, in very pedestrian language.

Mr. SHAPIRO. There is 1.6 billion of them. They do anything consumers want them to do. What we are willing to say——

Ms. ESHOO. That is a little dangerous, when you say it allows consumers to do whatever they want to.

Mr. SHAPIRO. Except what they shouldn't be allowed to do is to steal products of others, and that is fine. And we are willing to respond, that is why we are here today. We have responded to other technologies. Most VCRs respond to Macrovision. We are working with the motion picture industry very closely to totally address their needs in terms of a protection system. But if you say everything must be protected all the time, fair use doesn't exist anymore.

Mr. TAUZIN. Mr. Callas will be allowed to respond and then we will have to move on.

Mr. CALLAS. I just want to shift just a bit. There are copyrighted works that people want to circumvent. The most obvious example is the one I gave before of computer viruses. They are software, they are copyrighted, that you may end up with a copyrighted work on your computer that you would really like to not be there. And if it uses a technological protection mechanism to prevent you from removing it, then you would be committing a felony to remove it or to provide a tool that removed it. That is one piece where there has to be a balance.

Ms. ROSEN. It is just so implausible——

Mr. TAUZIN. Well, hold on. The gentlelady's time has expired. If the gentlelady wishes to address that, maybe she can respond, but Mr. Klink is recognized now for 5 minutes.

Mr. KLINK. Thank you, Mr. Chairman.

This has truly been one of the most informative hearings, I think, that I have attended in my brief time here in Congress, and it is not that we have—I don't think I have come to any final conclusions on a lot of the points we have before us because these matters are very complex. But it takes me back to my own life's experiences. And I remember, first of all, the chairman's point is very well taken. It is not possible or was not possible to walk into a library and check out a book or to grab Mr. Gutenberg's Bible and to then reprint that document and distribute it widely. It was not possible to take a 33 RPM record or the predecessor of the 33 RPM record or the 45 RPM record or the 78 RPM record or any of those and again widely distribute those and sell those.

With the cassette tape recorder invention, you can take your transistor radio or any other receiver and you could take music and you could make dubs and you could give it to your friends and people began to do that. With VCRs, the same sort of thing began to happen again. So we are talking about technology.

Mr. TAUZIN. Will the gentleman yield. It is even worse because when you dubbed the VCR, every copy was of less quality down the line. In the digital age, they are all the same quality.

Mr. KLINK. That is exactly the point I am getting to. The chairman, as usual, is 5 steps ahead of me.

But the point about this is that we now have the ability to do all of those things. So we have talked about the fair use doctrine. My point, and I drive home—fortunately, I live 3½, 4 hours from here, so I am able to drive back to Pennsylvania, and occasionally I get a little heavy on the foot, and I understand that there are people out there who sell and people who buy radar detectors, and I understand they are illegal, but I believe they are still in this country, commerce that exists, between these illegal devices, people who buy them and use them and people who sell them. And furthermore, I am a little suspect in that I have friends who are state policemen, believe it or not, fortunately, some who are district justices, but they tell me that as the companies come up with new kinds of technology, that these radar detectors can no longer detect, and the next thing you know, the same company comes up with a new radar detector that now all of a sudden the police have to come up with another device. I don't necessarily think that is a bad thing, but I just thought I would point that out.

My point, as I get to this, is that I think we must focus on the technology. We clearly have to focus on the technology because that is what has brought us to this point.

My other question, and I don't truly know the answer to this. We have talked about the fair use doctrine. What about the first sale doctrine. What about the fact, I mean, does the purchase of this product become a licensing fee, rather than the pure purchase of that product then for redistribution. I just throw that out and—yes, please, go ahead.

Mr. METALITZ. This is exactly another example of what you were just talking about, how digital is different. What the first sale doctrine provides is that if I sell you a book, you are free to resell it.

Mr. KLINK. Yes, I bought it.

Mr. METALITZ. The problem is in the digital environment, when I am selling you a copy of my work, in order for you to distribute it, you are also copying, so the first sale doctrine has never given the possessor of the physical object the right to copy it.

Mr. KLING. But I can lend it to a friend if I would like to, I can read it to my kids if I would like to.

Mr. METALITZ. It is the exception to the distribution right, but not to the reproduction right, and we think it would open a very huge loophole in the copyright law to say in the digital environment it is okay for you to make a copy and distribute it to somebody else, as long as you destroy the original copy. The problem is enforcing that type of a limitation, and we can't conceive of any way to enforce it, except by extremely intrusive measures of going and checking everybody's computer hard drive to see did they in fact destroy it before they passed a copy along to somebody else.

Mr. KLINK. Mr. Greenstein.

Mr. GREENSTEIN. Mr. Klink, I am glad that you raised the point because this is an area where technology is extremely helpful. Some of the companies in the Digital Media Association are now

building technologies to do digital downloading and some of them, for example, have provisions in it that say, you can use it for 7 days and after the 7 days it expires and it gets erased from your hard drive. Or you can only make one copy to a CD recordable disk and that is the only copy you can make.

Now what these devices are also capable of doing is saying if you want to retransmit this, it gets retransmitted, but it automatically gets erased from your hard drive, and that solves the first sale problem. Digital technology can solve the problem. The problem here is that the law currently would prohibit the solution that my companies want to market to the marketplace. This is a very important issue over electronic commerce. Just the way you buy a book today in a physical retail store, you want to be able to give it away to somebody or resell it, and you have that ability when you download it.

Mr. KLINK. Let me ask another question. What if it is digitally wrapped or encoded, is it possible then that my right to resell it could be compromised?

Mr. GREENSTEIN. If the current for sale law stays the way it is, it would be compromised, but as far as the technology, the technology can facilitate it, and facilitate protection for copyright owners at the same time, if the law allows that to happen.

Mr. KLINK. But then can other technology trump the current technology? Are we in the same battle we were in with the radar and the radar detector on the highways?

Mr. TAUZIN. Please. We have a lady who is trying to record all this. You have to go one at a time and you have to have the mike, please.

Mr. Greenstein has the mike now. Please. Please.

Mr. GREENSTEIN. I think the answer to your question is that the technologies being developed are incredibly sophisticated and robust. If we are talking about professional piracy, there are laws against professional piracy, certainly, and professional piracy is always going to be a problem, no matter what technology you are doing. The question is are you going to take away an existing privilege from consumers because of the inevitable problem of pirates, and I think that that is an important balance for this Commerce Committee to address, particularly in an area you are going to be purchasing online. Consumers want the right to do something with what they purchased, they want it to be as available as the copy they buy in a physical retail store.

Mr. KLINK. Mr. Metalitz.

Mr. METALITZ. Thank you very much, Mr. Klink. The only thing I wanted to add is every technology Mr. Greenstein described is a technological protection measure that Mr. Shapiro thinks it ought to be legal to sell tools in order to break and circumvent. So I think it is very difficult to reconcile.

Mr. KLINK. Mr. Shapiro, you may have an opportunity to respond.

Mr. SHAPIRO. Actually, I don't think that justifies a response based on what I said. But I think the bottom line is, in terms of technological protection measures, if they are really serious about what we are talking about, let's agree on what they are, let's just define them either in the bill or in the private sector and let's agree

on them. Just like the OSP provision, there is a definition there for negotiation and let's agree on it.

Getting to the technology itself, what you have raised, technology is value neutral, in a sense, it is not bad or good, it is how it is used. But technology, under this legislation, would eliminate fair use because, in many of the circumstances we described, there is another one we haven't talked about, and that is when the copyrights expire and that is supposed to be open to the public, yet the same technology and the same rules would bar you from being able to exercise fair use rights and copy the product or see the product or use the product, even though there is no copyright on it. So technology is being manipulated in such a way in this legislation so that it bars consumers from doing what they have been accustomed to doing.

Mr. KLINK. I thank the chairman for his indulgence.

Mr. TAUZIN. The gentleman's time has expired.

I am told by the staff that copies of the transcript of this hearing will be available; however, we may charge you for copies if we so choose.

This has been really intriguing. This could go on, we know, forever. I think we have all the issues before us and you have done a great job of educating us on it. We have a little work in digesting them all now and perhaps understanding them.

We will submit questions to some of you that we would like for you to respond in writing to that have not been asked today. We again apologize for the interruptions today, but deeply appreciate your contributions.

The hearing stands adjourned.

[Whereupon, at 2:02 p.m., the subcommittee was adjourned.]

[Additional material submitted for the record follows:]

PREPARED STATEMENT OF MARK BELINSKY ON BEHALF OF MACROVISION CORPORATION

Mr. Chairman and Members of the Committee, my name is Mark Belinsky and I represent Macrovision Corporation.

Having previously submitted a statement to the House Judiciary Subcommittee on Courts, and Intellectual Property regarding H.R. 2281, Macrovision Corporation would like to supplement that statement to address issues of concern to this Subcommittee. More specifically, the concerns raised by various Subcommittee Members about the definition of a technological protection measure ("TPM") in proposed Section 1201(b)(2)(B) as it relates to copyright infringement.

The Definition of a Technological Protection Measure Should Be Clarified

While Macrovision Corporation supports the basic framework and principles of H.R. 2281 and the version of that legislation as passed by the Senate (S. 2037), we believe the current definition of a TPM is internally inconsistent and therefore ambiguous. We see a real danger that the ambiguity of this definition will greatly frustrate courts in interpreting this legislation and thereby negate its effectiveness.

As presently defined in H.R. 2281 and S. 2037, a "TPM" effectively protects a right of a copyright owner under this tide if the measure, **in the ordinary course of its operation, prevents, restricts or otherwise limits the exercise of a right of a copyright owner under this title.**" Section 1201(b)(2)(B). The language highlighted in bold print suggests that somehow a TPM could be used to prevent, restrict or otherwise limit the exercise of a right of a copyright owner, when in fact the opposite is true.

Macrovision therefore proposes to change the definition of a TPM as follows:

> "A technological protection measure 'effectively protects a right of a copyright owner' under this title if the measure, in the ordinary course of its operation, prevents, restricts or otherwise limits the ability of a person to infringe a right of a copyright owner under this title."

Not only does this new definition more clearly describe a TPM in plain English, it defines a TPM as something which is designed to prevent copyright infringement, which is the basic goal of Section 1201(b).

The Revised Definition of a TPM is More Consistent With The Principal Purpose of H.R. 2281 And Does Not Prohibit Legitimate Consumer Electronics Products

By clearly defining a TPM as a measure which prevents copyright infringement, the prohibited class of technologies, devices, products, etc. (hereinafter generally referred to as "pirate devices and technologies") are better defined as well. That is because the pirate devices and technologies are defined by how they are primarily designed and the purpose for which they are sold i.e., to circumvent or defeat a TPM which, by definition, is used to prevent copyright infringement. When read together with Section 1201(b)(1), the definition of a TPM proposed by Macrovision would also make it clear that Section 1201(b) does not prohibit consumer electronics products with commercially significant non-infringing uses. Thus, this new definition of a TPM better describes the types of prohibited devices and technologies so that only those are primarily designed or sold for the purpose of facilitating copyright infringement are illegal. This would necessarily exclude general purpose VCRs and other legitimate consumer electronics products.

H.R. 2281 Properly Imposes Liability On Manufacturers And Sellers Of Pirate Devices

It is entirely appropriate and necessary to impose liability upon manufacturers, sellers and importers of pirate devices and technologies because they should be held responsible for the copyright infringement resulting from their activities. A requirement that pirate products, services or devices actually be used by purchasers for copyright infringement would impose an impossible burden upon copyright owners and other aggrieved parties. Such a burden is unwarranted given the proliferation of pirate devices and the inability of copyright owners to detect their use once they have been sold.

Macrovision's Patented Copy Protection Technology Is Fully Compatible With All General Purpose VCRs And Computers

Macrovision's patented copy protection technology has, since 1985, been applied to over 2 *billion* videocassettes worldwide (more than 1 billion in the U.S. alone) and to over 7 million digital versatile discs in the past 18 months. The technology is applied to over 450 million videocassettes each year (more than 200 million cassettes in the U.S. alone), and is the technology of choice for major motion picture studios and special interest video producers alike to protect their valuable copyrighted material from unauthorized copying using VCRs.

Over the past 10 years, as the number of videocassettes to which the technology has been applied has grown, Macrovision has continuously increased its level of cooperation with, and support of, the consumer electronics industry. For the past three years, Macrovision has worked hand in hand with all of the major consumer electronics companies (such as Sony, Matsushita, Toshiba, Thomson (RCA), and Philips) and the major personal computer hardware and software companies (such as Intel, Microsoft, Compaq, Hewlett Packard, IBM, Gateway 2000 and NEC Packard Bell) to ensure continued compatibility of Macrovision's copy protection technology with their VCRs, television receivers and personal computers.

The continued usage of Macrovision's copy protection technology in the marketplace is driven primarily by its *compatibility* with all VCRs, PCs and television receivers offered for sale and in use by consumers today and by the value provided to rights holders who wish to protect their valuable copyrighted works. Therefore, it goes without saying that VCR, television, and/or PC manufacturers would not be jeopardized in any way by this legislation nor would these companies be restricted in their product designs so long as their products are not primarily designed to defeat, or sold for the purpose of defeating, Macrovision's copyright protection technology or some other TPM.

New Technological Protection Measures are a Key Element of the United States' Commitment to WIPO

We understand that some constituencies feel that the reference in H.R. 2281 to new TPMs that do not exist creates a potentially dangerous situation for the designers and manufacturers of new consumer electronics and PC devices. At the same time, these same constituencies propose a global industry consensus as the means to implement and require compliance with these new TPMs, a goal that is clearly impossible. We at Macrovision are intensely aware of the complexities related to the implementation of such new technologies, but by the same token, we believe strongly that the protection of U.S. intellectual property demands that the legislation

which implements WIPO provide for the possibility for future TPMs, so that this legislation need not be continuously amended to meet new threats to U.S. intellectual property.

We think everyone is, aware of the importance of intellectual property and TPMs to the American economy. Millions of Americans work in "information related" occupations. According to the International Intellectual Property Alliance, intellectual property is now a significant contributor to the American economy—$250 billion last year alone—and the largest U.S. export "product" category—in 1996, it generated $60 billion in export revenues.

As this legislation is considered and finalized, Macrovision believes (and I believe personally) that we must fully consider the impact our own WIPO-implementing legislation will have on our ability to influence similar legislation in other countries around the world. It is difficult to imagine how we can request other countries to enact legislation to protect American intellectual property interests.

Conclusion

Macrovision respectfully submits this Supplemental Statement in support of H.R. 2281 and urges this Subcommittee to approve the bill, as amended by the Senate in S. 2037, with the revised definition of a technological protection measure proposed by Macrovision.

INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS
June 5, 1998

Honorable TOM BLILEY
Chairman
House Committee on Commerce
2125 Rayburn House Office Building
Washington, D.C. 20515-6115

DEAR CHAIRMAN BLILEY: On behalf of the Institute of Electrical and Electronics Engineers—United States of America (IEEE-USA), and its 220,300 U.S. electrical, electronics and computer engineers we wish to comment on Section 3 Copyright Protections Systems and Copyright Management Information of the *WIPO Treaties Implementation Act (H.R. 2281).*

We believe that we can contribute a unique perspective to the bill since the IEEE-USA Intellectual Property Committee is made up of practicing engineers, entrepreneurs and intellectual property attorneys who are U.S. IEEE members with expertise in the field of information technology.

As one of the world's largest publishers of technical material, we realize that without a copyright protection system in place we could conceivably stand to lose a great deal of IEEE's intellectual property revenue. The technology that is presently available allows users to reproduce material with great speed and accuracy. Without a copyright protection system in place, hundreds even thousands of copies of IEEE's intellectual property could be reproduced and disseminated for free throughout the world.

However, IEEE-USA believes that *Section 1201 Circumvention of Copyright Protection Systems,* of H.R. 2281, will have the following negative impact on our members since it will:

1. prohibit Internet users from protecting themselves against outside viruses, worms, or other breaches of security or privacy. With the development of new Internet technologies, copyrighted works could include executable programs that run on the user's machine when viewing a web page. This internet technology, known as applets, could be used in a way that would be considered a copyright protection device and therefore the removal or modification of such technology would be in violation of Section 1201 of this bill. This same technology could also be used to damage a user's computer data and invade one's privacy.

   Internet users need to be permitted to look at, modify, or disable anything that executes on their own system. Since copyrighted works are starting to include executable code that might not only implant viruses but can gather information from the user's system, the public must have a mechanism to protect themselves without being held liable for a "protection-defeating" device violation.
2. impede "legal" copying or legal forms of reverse engineering of computer programs as defined by the 9th Circuit Court of Appeals in Sega v. Accolade. Copying a computer program at least for the purpose of interoperability was defined as legal fair use the 9th Circuit, as well as two other U.S. circuit courts. Frequently engineers must reverse engineer software so that they can write a dif-

ferent but compatible piece of software that will operate on that particular system. Without copyright fair use, software monopolies will grow in power, and start-up companies will die. EM-USA believes that decryption of encrypted material for purposes of fair use of encrypted copyright material should not be a violation.

3. inhibit research and testing in this area by private entrepreneurs. Encryption has become a big business in the U.S. The U.S. has become a world leader in the sale of this technology. Testing ones decryption resistance becomes very important as the technology improves and the speed of computers increase. This bill would discourage such third party product testing by the market place. We would lose our leadership role in encryption technology if decryption devices are considered punishable under this bill. There are commercial businesses working with quasi-standard encryption methods and new "unbreakable" ones are being developed. The only way to test the strength of encryption technology is to attempt to decrypt the encryption through decryption devices that may be prohibited by this bill. Although we do not believe that the intent of the bill was to prohibit product testing we do believe that it would have that effect.
4. make it possible for an organization to take government data, that was once available to the public, and republish the information. Once it was published, perhaps with minor changes in format, this organization would hold the copyright to this information, under H.R. 2281 as a compilation, and lock up this data using a copyright protection device. If the original data was not easily accessible, the general public would be deprived of this information that was once available to them. Under this bill a copyright protection system could not be circumvented to show a lack of originality, thereby making government data, paid for by the U.S. taxpayer, inaccessible to the public even under the Freedom of Information Act (FOIA).
5. impose criminal sanctions upon innovators who may not be infringing copyright rights. Section 1204 of H.R. 2281 condemns the mere act of circumventing copyright protection systems—whether or not the act is infringing. We believe this will stifle innovation in the United States and therefore do not believe that criminal sanctions are appropriate. IEEE-USA believes that innovators of new technologies should not have to live under the threat of criminal sanctions—civil remedies are sufficient to deter those people who would violate sections 1201 and 1202.

As an alternative, IEEE-USA believes that Section 8 Copyright Protection and Management Systems of the *Digital Era Copyright Enhancement Act* (H.R. 3048) goes a long way to address our concerns listed above. Accordingly, IEEE-USA urges you to substitute Section 3 of H.R. 2281 with Section 8 of the *Digital Era Copyright Enhancement Act (H.R. 3048)*. IEEE-USA believes that Section 8 of H.R. 3048 is the correct approach since it acknowledges the important link between technology and infringement.

We thank you for the opportunity to comment on this important bill, and we would be happy to provide you with addition information. Please contact us if you have any further questions regarding these recommendations.

Sincerely,

JOHN R. REINERT
IEEE-USA President

DANIEL E. FISHER, CHAIR
IEEE-USA Intellectual Property Committee

PREPARED STATEMENT OF BROADCAST MUSIC, INC.

Mr. Chairman, and members of the Subcommittee, Broadcast Music, Inc. ("BMI") licenses the public performing right to approximately 3 million musical works and represents close to 200,000 songwriters, composers and music publishers in all fifty states, the U.S. territories, commonwealths, and possessions, and throughout the world. BMI's fundamental role is to license one of the six exclusive copyright rights, the right to perform publicly musical works. Those public performances occur in a myriad of places, and in many commercial contexts which include transmission on radio, television, cable, satellite, and the Internet. BMI licenses the public performance of musical works on-line. BMI also makes its song title database (featured works) available electronically to be searched on-line.

BMI supports enactment of H.R. 2281 (the WIPO Copyright Treaties Implementation Act), as amended and as reported favorably by the House Committee on the Judiciary. H.R. 2281 amends the Copyright Act to benefit the creators and owners of intellectual property whose rights are affected by the national and global informa-

tion infrastructures, and paves the way for U.S. adherence to two multilateral treaties negotiated by over 100 countries under the auspices of the World Intellectual Property Organization ("WIPO") in December 1996: (1) the WIPO Copyright Treaty; and (2) the WIPO Performances and Phonograms Treaty. Marvin L. Berenson (BMI's General Counsel) served on the U.S. Delegation to the WIPO Diplomatic Conference.

As the world's primary producer of music, movies, books and software, the United States has the most to gain from the expeditious ratification of the two WIPO treaties. From a music perspective, Anglo-American music is the most popular in the world. It generates substantial revenues for the United States through foreign performing rights income and foreign sales of CDs and tapes. Even so, the typical songwriter receives only a modest income for the creative effort of writing music that is publicly performed by others.

H.R. 2281, if enacted without delay, will enable the United States to ratify the new treaties in short order and then to exert forceful leadership worldwide to encourage every country to join the treaties. With quick action, we can move to end piracy in Cyberspace before it takes root, or stop it from expanding any further than it already has, and the United States will be a big winner. H.R. 2281 is a balanced bill that promotes the rights of creators but also safeguards the interests of users and on-line service providers. From the perspective of this subcommittee—telecommunications, trade and consumer protection—H.R. 2281 promotes the interests of the creative industries (not only music but films, computer software, and printed matter) in the fastest growing sector of the U.S. economy. Songwriters, composers and music publishers are key players in the arena of America's top export earners. In order for the Internet to be a vibrant and legitimate source of commerce, there must be national (and ultimately global) rules of the road. Content will drive Internet commerce and BMI looks forward to working with this subcommittee and the full Commerce Committee to answer questions about H.R. 2281, and to join in the common effort to fight piracy and to prevent roadblocks from thwarting electronic commerce.

H.R. 2281 has been almost four years in the making. Frances W. Preston (BMI's President and CEO) was a member of the National Information Infrastructure Advisory Council ("NIIAC") which reported to President Clinton in January 1996. BMI has been an active negotiator in the sessions held during the past two Congresses under the leadership of Representatives Coble, Goodlatte, Hyde, Conyers and Frank in the House Committee on the Judiciary. Frances W. Preston and Allee Willis (a Grammy award winning songwriter who is affiliated with BMI) testified before the Judiciary Committee. BMI also participated in the negotiations led by Senators Hatch, Leahy and Ashcroft in the Senate Committee on the Judiciary. It is noteworthy that the Senate Judiciary Committee incorporated in its legislative history the testimony before its counterpart House Committee. In short, BMI can attest to the fact that H.R. 2281 represents the search for common ground between disparate viewpoints in an era of swift moving technology.

H.R. 2281 contains two freestanding titles that are inextricably linked in terms of the prospects of passage: the first, entitled the "WIPO Copyright Treaties Implementation Act," implements the WIPO treaties; and the second entitled the "On-line Copyright Infringement Liability Limitation Act," concerns the liability that service providers may incur as a result of transmissions and storage activities that occur on systems and networks within their control.

The WIPO treaties do not require any radical surgery to the substance of copyright rights or to any of the exceptions and limitations to those rights. They do require, however, establishment of new technological adjuncts to the copyright law to make it unlawful to defeat technological protections through the manufacture of "anti-circumvention" devices designed primarily to do so. Moreover, the treaties promote the use and integrity of electronic rights management. BMI has been an active participant in the development of a worldwide identification standard for creative works. Led by CISAC (the International Confederation of Authors and Composers), which represents more than 1 million creators who are members of 165 societies in 90 countries, the standard (based on a unique digital identifier, the International Standard Work Code, or ISWC) will provide a tool that will enhance significantly the efficiency of performance measurement and payment systems for copyright holders in the digital environment. Title I of H.R. 2281 is consistent with BMI and CISAC's efforts.

BMI understands that consumer electronic machine manufacturers are arguing that H.R. 2281 will outlaw devices such as VCRs and will also overrule the Supreme Court's opinion in the *Betamax* case. Nothing could be further from the truth. Title I applies only after the copyright owner has decided to use encryption, scrambling, or some other kind of protection technology, only if that technology is effective, and

only if the device is primarily designed to circumvent protection, is marketed for use in circumventing, or has no commercially significant purpose other than circumvention.

Title II of H.R. 2281 provides statutory language to clarify the parameters of Internet copyright infringement liability. The bill does not modify the liability rules of the road for those individuals and entities that initiate the violation of any exclusive right of a copyright owner. Title II takes initial steps that culminated in S. 2037 to preserve strong incentives for service providers and copyright owners to cooperate to detect and deal with copyright infringements that take place in the digital networked environment. At the same time, it provides greater certainty (e.g., safe harbors) for service providers concerning their legal exposure for infringements that may occur in the course of their activities.

CONCLUSION

In conclusion, BMI applauds legislative efforts to implement the WIPO copyright treaties, particularly legislative recognition of copyright management information systems, and to clarify the liability rules of the road for service providers, particularly the accommodation by providers of standard technical measures used to identify or protect copyrighted works.

The United States is part of a global economy. We cannot afford to undervalue communications, including performances and transmissions, over the global information infrastructure. We cannot afford to allow piracy of U.S. creativity to run rampant. We cannot afford to see our creative industries migrate offshore. We cannot afford to lose American jobs. We must be, as we have been in the past, a creative leader in the new world of electronic commerce. To do so, copyright rights should be protected on-line.

Accordingly, Mr. Chairman, BMI recommends that H.R. 2281 be reported favorably by the Committee on Commerce and then that the Committee work cooperatively with the Judiciary Committee to fashion a Manager's Amendment identical to or substantially similar to that adopted by the U.S. Senate when it passed S. 2037 (the Digital Millennium Copyright Act of 1998) by a unanimous roll call vote of 99 to 0 on May 14, 1998.

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