

**PROTECTING CONTENT IN A DIGITAL AGE—
PROMOTING BROADBAND AND THE DIGITAL
TELEVISION TRANSITION**

HEARING

BEFORE THE

**COMMITTEE ON COMMERCE,
SCIENCE, AND TRANSPORTATION
UNITED STATES SENATE**

ONE HUNDRED SEVENTH CONGRESS

SECOND SESSION

—————
FEBRUARY 28, 2002
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SENATE COMMITTEE ON COMMERCE, SCIENCE, AND TRANSPORTATION

ONE HUNDRED SEVENTH CONGRESS

SECOND SESSION

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**PROTECTING CONTENT IN A DIGITAL AGE—
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DIGITAL TELEVISION TRANSITION**

THURSDAY, FEBRUARY 28, 2002

U.S. SENATE,
COMMITTEE ON COMMERCE, SCIENCE, AND TRANSPORTATION,
Washington, DC.

The Committee met, pursuant to notice, at 9:35 a.m. in room SR-253, Russell Senate Office Building, Hon. Ernest F. Hollings, Chairman of the Committee, presiding.

**OPENING STATEMENT OF HON. ERNEST F. HOLLINGS,
U.S. SENATOR FROM SOUTH CAROLINA**

The CHAIRMAN. The Committee will please come to order. Today, we examine the copyright protection problems that have been stalling consumer adoption of broadband and digital television, and what Government should do to solve it. We have been here before, in 1962, under the All-Channel Receiver Act, Congress mandated that all television receivers include the capability to tune all channels, UHF and VHF, allocated to the television broadcast service.

More recently, in 1998 Congress required that all analog VCR's recognize the standard copy control technology known as macrovision. In the former case, the Federal Government and the FCC took the lead. In the latter case, industry first agreed upon the macrovision standard, and Congress validated the agreement in legislation, so whether Congress or industry led the way, the results have benefited consumers and the industry both by providing Americans with wider access to programming and content. Ronald Reagan used to say, here we go again. Industries are at odds as to how to solve the critical content protection problems.

We have got the tools to break the log-jam. First, rural and underserved areas aside, there is not a broadband availability problem, there is a demand problem. 80 percent can get broadband, but only 10 to 12 percent take it. Most Americans do not want to pay \$50 a month for faster access to e-mail, but if more high-quality content were available online, consumers would come. Today, there is very little high-quality content available on the Internet. Why? Because content owners are fearful that premium content will be stolen, and their investment in creative works wasted. The same is true for digital television, where piracy deters programmers from putting high definition digital content over the airways.

America's creative artists deserve protection. Our copyright industries are among our greatest economic and creative assets. The

Framers recognized that innovation and creativity was instrumental to our country's economic health when they empowered Congress in the Constitution to protect copyrighted products. Now, however, in an era when products are delivered digitally, copyright laws mean less and less. Absent strong technological protections layered on top of the copyright laws, it is virtually impossible to enforce the law as it exists.

I might note at this particular point that the copyright laws are there. That is a matter of jurisdiction for our Judiciary Committee, but while they know the law, they do not know the business, and this thing continues on into log-jam. Every week a major magazine or newspaper reports on the thousands of illegal pirated works that are available for copying and redistribution online. Academy Award-winning motion pictures, platinum records, Emmy Award-winning television shows all for free are illegal. I think last night on the Grammy Awards they had three college kids in a contest to see how many movies—I think it was 8,000 movies that they could download, or 6,000 songs I think, that they downloaded in 3 days.

Piracy is growing exponentially on college campuses and among tech-savvy consumers. Over 10 million people use file-sharing sites on the Internet to download movies and TV shows with no penalty. Such lawlessness contributes to the studios' and record labels' reluctance to place their digital content on the Internet or over the airwaves.

When Congress sits idly by in the face of these activities, we sanction the Internet as a haven for thievery. Luckily, a solution is at hand. Leaders in the consumer electronics information technology and content industries are America's best and brightest. They can solve this problem. The consumer electronics and high tech industries claim they are ready to do just that.

Only yesterday, America's top high tech executive sent me a letter to that effect. I want to believe them, but why have they not done it? This has been going on for years, and today the Committee wants results. Industry negotiations have been going on for years with little to show for it. Both sides share some blame in this area, as I see it. Some companies may have divided loyalties. Existing propriety digital rights management technologies licensed to content companies would be eliminated by the adoption of a single standard. Other tech companies profit from the sale of consumer electronics equipment that enables piracy in the first place, so when I listen to high tech's clarion call to the Government, please stay away from our business, I am reminded of the police chief in Casablanca who said, I'm shocked. I'm shocked that gambling's going on here.

Senator Stevens and I are planning legislation that would place a deadline on affected industries to come together to solve these problems in private sector talks. We want industry to solve its own problem, and if they do, we will empower Government enforcement so that all consumer devices comply. If they do not, the Government's technologists and engineers, in consultation with the private sector, will step in.

In addition, I would emphasize that we will work to preserve legitimate expectations of consumers and researchers. We will make sure that you can take the program off and make copies for your

personal use on your VCR or for research. If they engage in lawful behavior at the home or at the university, we will permit them to do the same in the future.

This will not be the first time Congress imposed technological requirements to benefit consumers, and it will not be the last. Other standard-setting issues loom ahead, such as the need to ensure compatibility of devices used by different cable operators, but that is a topic for another hearing. Today, we examine copyright protection issues in a digital age, and we have distinguished panels with us.

Let me yield first to our distinguished former chairman, John McCain.

**STATEMENT OF HON. JOHN MCCAIN,
U.S. SENATOR FROM ARIZONA**

Senator MCCAIN. Thank you, Mr. Chairman. I thank the witnesses for being with us today, and I will be very interested in hearing their insights on one of the most complex issues facing the transition to digital television and the roll-out of broadband services, which is content-protection.

The transition to digital television has been a long and difficult road for consumers. It has been almost 5 years since Congress gave broadcasters an enormous amount of free spectrum so they could make the transition from analog to digital. Unfortunately, very few consumers have yet to experience high definition television. Moreover, industry in-fighting has caused more arguments than actual progress over cable carriage, interoperability, transmission standards, and content protection.

The debate over content protection is a classic chicken-and-egg story. Content providers spend vast amounts of capital each year to produce quality films and programming for consumers but are hesitant to supply it in digital form without protecting their investment from illegal copying and retransmission over the Internet. On the other hand, consumers have little incentive to purchase expensive digital television without compelling digital content. While DTV sales have been slowly increasing each year, an overwhelming majority of Americans are still purchasing analog sets.

I believe the concerns of content providers are justified. They invest creativity, effort, and capital into producing high-quality films and programming, and should be able to adequately protect their investments. However, I believe that such protections must not come at the expense of stifling new and innovative technologies in the marketplace, and should not restrict the rights of consumers to view and record content that is legitimately purchased or obtained. I am apprehensive of proposals that select technological winners and losers and mandate Government intervention in the marketplace. The Federal Government has a poor track record in attempting to dictate how the marketplace should operate.

I thank the Chairman for holding the hearing on this important issue and look forward to hearing from the witnesses, and I think, Mr. Chairman, that this may be the beginning of our examination of this very difficult and complex issue, rather than the end.

I thank you, Mr. Chairman.

The CHAIRMAN. Very good. Let me recognize Senator Stevens, our cosponsor.

**STATEMENT OF HON. TED STEVENS,
U.S. SENATOR FROM ALASKA**

Senator STEVENS. Mr. Chairman, thank you very much. I have a short statement just echoing your comments. I will just not repeat it, and I will ask that you put it in the record, and would yield to Senator Burns, the Chairman of our Subcommittee.

[The prepared statement of Senator Stevens follows:]

PREPARED STATEMENT OF HON. TED STEVENS, U.S. SENATOR FROM ALASKA

I applaud the ongoing efforts of the Copy Protection Technical Working Group—the consumer electronics industry, the content producers, and others—to develop a standard to prevent Internet theft. The private sector, those in the business, are in the best position to develop a standard that works.

I not only hope, but believe, the private sector can and will do the right thing to make it safe for the best producers and directors in the world to make their movies and television shows available through the internet and the digital airwaves.

That, like nothing else, will stimulate the next quantum leap not only in the Internet and the devices used to take advantage of all it offers, but our economic engine as well.

Soon we will be able to watch movies on our cell phones and even on our watches. But we will have no movies to watch if a film producer who has invested hundreds of millions of dollars feels he may be held up if he puts his most recent release on the internet or distributes it over the air for any bandit to steal.

The private market place can forge a solution that would be more eloquent than anything government can do. But like Ronald Reagan, I believe we must trust—but verify. If the private sector cannot or will not develop a uniform, interoperable standard, government must step in to help to provide the proper motivation.

Over the years Congress has done that when market forces have been unable to do what is in the best interest of the country.

We did it in 1997 when we mandated digital television conversion.

We did it when we mandated the V-Chip in televisions and filtering devices in libraries to protect kids from pornography on television and the Internet.

And with a whole range of safety and environmental standards designed to ensure everything from safe booster seats for kids to safer food.

After years of hard work, the industry now tells us it on the verge of a breakthrough. It predicts an interim agreement on a standard to protect broadcast signals by March 31st of this year. I am anxious to hear today how those negotiations are proceeding and promise that those of us on this Committee will follow your efforts with interest.

It is my strong hope and desire that those efforts will bear fruit and that this Committee can simply ratify the private sector agreement. But if that does not happen, I believe Congress will be forced to take further action.

The CHAIRMAN. Senator Burns.

**STATEMENT OF HON. CONRAD BURNS,
U.S. SENATOR FROM MONTANA**

Senator BURNS. Thank you, Mr. Chairman, and I thank my friend from Alaska. I am very pleased to be here today, and I am very pleased with the witnesses we have today because they are at the center of the discussion. We have come together today to discuss the protection of content in the digital age, along with the promotion of broadband technologies, to all Americans. While at first glance it appears to be a difficult and complex exercise, I believe, through, an honest assessment of the problem we can build a framework for the solution to this critical problem.

We need to correctly determine whether or not the marketplace is sufficiently driving content protection standards, or whether we need to weigh in with legislation. While I believe that both the transition to digital television and the roll-out of broadband services are inevitable, the question is, if we do set policy, will it provide enough incentive to propel that process forward significantly.

When all is said and done, we have two major American industries that are talking past each other. The entertainment industry is looking for technological solutions to protect its intellectual property as soon as possible, while the information technology community says that technology exists but does not want to impose a cookie-cutter solution. Meanwhile, the consumer who wants high-quality content over broadband pipes is reduced to waiting for the large players to come up with a solution.

Throughout this debate, it is important to always bear in mind the stakes involved for intellectual property holders. The sheer volume and use of pirated content is astronomical. The Napsterization of our society continues to escalate. In this regard, a story I have been following closely is the free software program called Morpheus.

Morpheus is a program that provides users instant access to media files other users have downloaded, and whether legally or not, have chosen to share. I am told more than a million users, on average, are online and utilizing Morpheus at a time. The download options are not only MP3 files but also television shows and full-length movies. It is obvious to me Morpheus and other programs like it pose a serious threat to content providers and have complicated issues of copyright protection and distribution of compelling content online.

Until compelling digital content is made available to consumers, they will not purchase digital televisions or subscribe to broadband services. Content providers, however, are reluctant to provide quality content unless their material can be properly protected from pirating and retransmission via the Internet. Until the issues affecting broadband roll-out and the transition to digital television are resolved, consumers are left out in the cold.

This problem is not going to go away. I have spoken with several interested parties, and have found that some think there needs to be set a Government-imposed standard to protect content. Some want more time. Some want action now. Some want licensing, and some think Government interaction will only stifle the process. While I do not claim to know which of these scenarios is best, I am hopeful we can find out, or find the outline of a solution anyways.

It is my hope the parties involved can reach agreement on a way to protect the content that works technologically. If that is not possible, Congress may indeed step in and will have to take a more active role, a prospect that I do not look forward to but may be necessary in the end. Usually when we come up with Government-imposed solutions, we also create more problems. I thank the Chairman.

The CHAIRMAN. Thank you. Senator Kerry.

**STATEMENT OF HON. JOHN F. KERRY,
U.S. SENATOR FROM MASSACHUSETTS**

Senator KERRY. Mr. Chairman, thank you very much. This is one of those really interesting cross-sections of interest issues that comes before us with enormous consequences, economic consequences to some very large players, and I think it is fair to say that it is the aspirations for those economic consequences that perhaps are slowing down the process a little bit.

Some people who might have a solution, or who may be able to offer one, obviously have an economic interest in how that solution plays out, and to a large degree the market share desires that go along with those solutions are governing the rapidity with which they are able to reach a closure here.

I think it is important, and I think the comments of each of my colleagues up to this point underscore what is at stake here. Our Founding Fathers were very clear, Article I of the Constitution creates this property right, this right in creative product to be held for a certain period of time, and you would have chaos in the marketplace—to some degree we do now—if there is not a means of enforcing that.

Analog piracy, I gather, in the motion picture industry already is at about the \$3 billion mark. Clearly, when you can make a perfect copy and with the punch of a button distribute a perfect copy to thousands, tens of thousands of people, the undermining of Article I of the Constitution, the undermining of the order in the marketplace is just extreme. It is in all of our interests to address that. We have a balance of payments deficit that is enormous. One of our best industries that addresses that is the surplus in the combined industries represented here, and we have got just a huge economic interest to try to resolve it.

The question for us, obviously, is sort of a series of interlocking and cross-purpose public policy interests. I mean, do we rely on market forces, which is our preference, and many people in the industry have been saying to us, do not tamp down creativity, do not prevent the capacity of creative enterprises to come up with technological solutions. Well, that is true. We would love that to have happened and to happen, but it is the economic interest that to some degree gets in the way of that.

I mean, do you adopt one standard? Will there be several offerings? How do you manage the hardware component of this coupled with the software component? These are all crossing our public policy interest. Or do we mandate that certain technologies be used to prevent the copying of movies, music, and software? If the wireless example of Europe is any example at all, they established a standard. We have seen some differentials in our own deployment of wireless as a consequence of our not having done so as we leave it to the marketplace.

So Mr. Chairman, it is clear our first preference. I think everybody on this Committee would like the solution to come from the industries themselves, and we would like them to be adopted as rapidly as possible. It might be that we need to legislate initially, sort of codify whatever voluntary agreements they arrive at, if that were to make sense, but if the parties cannot, I would suggest that we reencourage them to try to come together in short order to see

if they can do more to find a solution, and I would urge the leaders in the high tech motion picture and consumer electronics industry to hasten that negotiating process, but if not, we may be stuck with the need to legislate somehow some broader way to resolve this in order to protect the marketplace and the interest of our country in the end.

Thank you, Mr. Chairman.

The CHAIRMAN. Senator Allen.

**STATEMENT OF HON. GEORGE ALLEN,
U.S. SENATOR FROM VIRGINIA**

Senator ALLEN. Thank you, Mr. Chairman. I want to thank you for calling today's hearing, and I want to thank all our witnesses for coming, and I look very much forward to listening to your concerns and some of your possible hopeful solutions to this challenge.

As chairman of the Republican High Tech Task Force, we care about this issue and I care about it and have a special interest. As stated by Senator Kerry, I think we all recognize the value of the music industry, the motion picture industry, and television as a tremendous export for business, but it is also an export of our country as well. I will always remember being in Tasmania speaking to fifth graders explaining my House of Delegates District as being the home of Thomas Jefferson, and none of them knew anything about Thomas Jefferson—they are still loyal to the Queen there—and I said, but Nelson County is the home of—I do not know if you have seen it, a show called "The Waltons". They all smiled. They all had heard of the Waltons and it is, again because of exports. Whether it is music or motion pictures, it is very important for our economy as well as hopefully a positive influence on our culture.

And all of us agree that piracy is something that we want to stop. Protection of content is a significant concern not only for the intellectual property owners, but also for the content providers, and also I think for the whole technology industry as a whole. I think we all desire to protect the content, to also provide the consumers with more choices.

What Senator Burns said is exactly right. This whole nexus between broadband, the roll-out of broadband, the desirability of people paying a higher cost for broadband, a lot of that is determined by how compelling the content is to pay that higher price for high-speed Internet access. Senator Burns, I agree with you 100 percent.

Now, this issue has to be addressed. I welcome encouragement of voluntary multi-industry dialogs, but I am leery of any process where the Government, rather than the market, develops and specifically mandates the technology standards.

I do understand in some areas that where the marketplace and all the parties do agree on various standards or criteria, that eventually the Government would have to come in and ratify those standards. For example, the analog hole issue eventually will need that sort of an approach. I think it is in all parties' interests to come up with a solution. I think, though, that if you have a Government-imposed mandate over these technologies, the industry will only be stifled in innovations and investments in technology, and I question whether Government mandates anyway would be adequate over time to protect the content from computer hackers.

The key is for everyone to work together and find credible standards so that the content providers, the folks that invest literally tens of millions of dollars for the production of a movie, or whatever the product may be, feel that it is not going to be easily pirated and unlawfully infringing on their copyrights.

Now, it is my understanding, Mr. Chairman, that there are companies such as Entertainer.com, Cinemanow.com, that currently offer secure digital rights management software for online distribution of music and video content. Business models are only beginning to develop in this industry, and the fact that some major movie studios already feel sufficiently comfortable to provide online movie distribution to these web sites suggests that this debate is a business model dispute rather than a public policy debate of the Government coming up with a standard or passing a law that says in 2 years the Government will come up with a standard however long it takes for that to be done.

Now, there have been, Mr. Chairman, strong partnerships between the diverse high tech industry and the content sectors to develop protection technology such as DVD encryption systems, the DVD CSS encryption standard, and the privacy content protection system. So, Mr. Chairman, I think this is helpful, a good start, as Senator McCain said, and I look forward to trying to prod the private sector toward getting to where we all want to get. We all share the same goal, because it is important for our Nation's economic future, it is important to protect private property rights, because if you do not, you will not invest those millions and millions of dollars and create all those jobs if you are not going to get a return on that investment.

I look forward to hearing from our witnesses as we try to address this challenge. Thank you, Mr. Chairman.

The CHAIRMAN. Senator Nelson.

**STATEMENT OF HON. BILL NELSON,
U.S. SENATOR FROM FLORIDA**

Senator NELSON. Mr. Chairman, I will be very brief so we can get on. I have a daughter who is a budding artist. She writes, she sings, she choreographs, and she dances, and she would not want her work stolen, nor would the people who produce songs want that work stolen, so we have got to find a solution here. I am looking forward to the testimony.

Thank you.

The CHAIRMAN. Very good. Senator Boxer.

**STATEMENT OF HON. BARBARA BOXER,
U.S. SENATOR FROM CALIFORNIA**

Senator BOXER. Thank you, Mr. Chairman. I ask that my statement be put in the record in the interest of time. I just want to point out to first thank you and Senator McCain for your leadership on this very important issue. Out of the seven witnesses today, five are from my State of California. I want to welcome them. I think it is symbolic of what this means to my State. Literally, all the stakeholders really, most of them come from my State. We must resolve this. To me, it is simple. Stealing is stealing, and so we have got an issue here. We have got to address it.

I think we can address it in a way that is fair to consumers, that is fair to the artist, and that is fair to the high tech companies, but I, too, hope it will come from them, but I do stand ready to act if we must act, and I thank you very much.

[The prepared statement of Senator Boxer follows:]

PREPARED STATEMENT OF HON. BARBARA BOXER, U.S. SENATOR FROM CALIFORNIA

Thank you Mr. Chairman for holding this hearing on how to protect digital creative content from theft. You have played a crucial role in bringing this issue to the forefront for discussion and I thank you for doing so because its resolution is of vital importance to the future of the film studios, technology companies, and the Internet.

As you can tell by the impressive representation of California talent on both of the panels of witnesses testifying today, this issue is of extreme importance to my state.

Let me begin by stating what I believe is a fundamental principle: Stealing is stealing. And while new technologies have made stealing creative content easier, it does not make stealing creative content right. We are here today to explore ways to stop people from stealing content.

The good news is that the industries involved in discussions on how to protect digital content are well on their way to a solution on two pieces of the puzzle. There is some agreement on digital copyright protection of over-the-air broadcasts of creative content and some agreement on protecting material that flows through analog devices.

Unfortunately, one issue seems close to an impasse: how do we keep files from being illegally shared and distributed over the Internet? I want to challenge all of you to commit to resolving this issue as soon as possible and in a way that is fair to consumers, the technology industry, and the producers of creative content.

Chairman Hollings has introduced a bill to force that resolution. I look forward to hearing your thoughts on his bill as well as other possible solutions to this problem.

The CHAIRMAN. Thank you. Senator Brownback.

**STATEMENT OF HON. SAM BROWNBACK,
U.S. SENATOR FROM KANSAS**

Senator BROWNBACK. Thank you, Mr. Chairman. Thank you for holding the hearing. Thank you for the witnesses and their attendance and presentations here today. I want to take a little different tack on this and to note something that just happened in the House in providing the pipelines for this sort of material to be able to get out. It is fitting that today's hearing comes less than 24 hours after the House of Representatives overwhelmingly passed the Tauzin-Dingell broadband bill that deregulates in that field. That bill seeks to create robust competition in the broadband marketplace by freeing up local phone companies from certain network-sharing regulations in the broadband market.

The regulation will place phone companies on a level playing field with the cable industry, providing incentives for phone companies to deploy broadband systems that not only provide a fast Internet connection, but have the added benefit of enabling them to compete with cable companies in this multichannel video market by providing consumers with a direct link to content providers. This competition would in turn force the cable industry to release its strangle hold on that market and open the floodgates on its own Internet pipes. One only has to look as far as the always-evolving and highly competitive wireless industry to witness the benefits of such a deregulatory move.

I have introduced my own version of the broadband regulation legislation that shares some of the same goals. There are several Members of this Committee that have differing versions and differing views on this issue. However, we all are seeking and certainly try to provide an across-the-board deregulation of the local telephone last mile facility, and to be able to provide a system where we can get more of that fast Internet service and more competition out there.

The Broadband Deployment and Competition Enhancement Act of 2001 extends deregulation only to those additions to the telephone network that make broadband services possible over existing phone lines, and I note all of this because what we are talking about is trying to get more services out to consumers and to protect those services as they are getting out.

I think we can see what is taking place in the House that is going to be a strong, we hope a strong competition for this high-speed Internet access. We need to be able to protect those intellectual property rights. I hope we can move forward on both fronts in this effort so that we can get the pipes out there, we can protect the material so people can have access to this in a quick, easy, protected fashion.

So I look forward to discussing possibly some of that as well with the witnesses that we have here today.

The CHAIRMAN. Senator Dorgan.

**STATEMENT OF HON. BYRON L. DORGAN,
U.S. SENATOR FROM NORTH DAKOTA**

Senator DORGAN. Mr. Chairman, I want to say, the question is not whether we do something here. The question is how we address this important issue, but I think most of what needs to be said has been said.

The CHAIRMAN. Very good. Senator Breaux.

Senator BREAUX. Thank you, Mr. Chairman. I am here to listen.

The CHAIRMAN. Very good. Senator Smith.

**STATEMENT OF HON. GORDON SMITH,
U.S. SENATOR FROM OREGON**

Senator SMITH. Thank you, Mr. Chairman. Everything that can be said has been said, so I will not repeat it, but I do want to recognize Mr. Vadasz from Intel who is here. He is a citizen of my State, and we are honored to have him here, and I think we all share the feeling that we are caught between two of America's greatest industries, and hope that this hearing will provide a forum so that we encourage resolution of a very serious issue, which is stealing, and also the freedom of the marketplace to develop without undue Government intrusion.

Thank you, Mr. Chairman.

The CHAIRMAN. Very good, and we do have a very distinguished panel here. Mr. Michael D. Eisner, Chairman and CEO of the Walt Disney Company, Mr. Peter Chernin, President and Chief Operating Officer of News Corporation, and Mr. Leslie Vadasz, the Executive Vice President of Intel. The Committee welcomes you, and we would recognize Mr. Eisner.

**STATEMENT OF MICHAEL D. EISNER, CHAIRMAN AND CEO,
THE WALT DISNEY COMPANY**

Mr. EISNER. Thank you, Mr. Chairman. I want to thank you—

The CHAIRMAN. And the full statements will be included and you can, of course, deliver it as you wish, in full, or highlight it, but all three statements will be included in the record.

Mr. EISNER. I also want to thank Senator McCain and all of your colleagues for inviting us to discuss the distribution of creative content over digital broadband and digital broadcast distribution systems. I am here today representing not only the shareholders of the Walt Disney Company, but also the hundreds of thousands of people across the country who participate in the creation of American film entertainment. I am talking about directors, writers, actors, editors, electricians, truck drivers, all sorts of laborers, the list goes on and on. They work on television shows and they work on movies. On many film projects, they work as long as 4 years, until the film is ready to be distributed in a theater. If the result of their efforts can be digitally stolen, copied, and distributed around the world before the first ticket is purchased on opening weekend, then these people will no longer be able to earn their livelihood because there will simply be no longer a need to have a movie business, and that business will not employ them.

Consider the impact on assembly line workers if the latest model Chevrolet were to be mass produced and given away free before the car ever got to the showroom. You may think this is unimaginable, but it is exactly the prospect that is being faced by our industry.

I know this sounds alarming. It is alarming, and it should be alarming. But make no mistake, this is not just about entertainment, this is about the economy. U.S. creative content industries, which, as has been alluded to already this morning, produce such distinctly American products as films and television shows, lead the U.S. economy in contributions to job growth, gross domestic product, and foreign sales and exports. That creative work accounts for a larger percent of U.S. foreign sales and exports than most other sectors of our economy, including automobiles, aircraft, and agriculture.

But all this success is threatened by digital piracy—or what we would commonly call theft. To be sure, piracy has always been with us. But, digital piracy is different. In the analog world, each successive copy degrades in quality and sharing a copy requires one consumer to physically relinquish that copy to another person. In digital, each copy is perfect. The one millionth copy is identical to the original. And, because of the ubiquitous nature of the Internet, perfect, but unauthorized, copies will be able to be transmitted instantaneously all over the world, with no regard whatsoever for the rights of the content owners. For a chillingly real depiction of where we are headed, please take a look at this clip from a year-old “NightLine” program in which 15-year-old Benjamin illustrates his ability to take—for free—any motion picture or television program of his choice.

[A video was shown.]

Mr. EISNER. We know that we can never achieve, nor do we expect, 100 percent content security. But there must be a reasonably secure environment to prevent widespread and crippling theft of

this creative content that drives our economy. As Benjamin clearly demonstrated, today, we are not even close. One research firm, Viant of Boston, estimates that more than 350,000 illegal pirated movies are downloaded from the Internet every day. In fact, today you can go to the Internet and find illegal copies of brand-new films such as “Harry Potter”, “Lord of the Rings”, “Monsters, Inc.”, “Ocean’s Eleven”, and so forth. Just take a look at this excerpt from a recently downloaded pirated copy of “Black Hawk Down”.

[A video was shown.]

Mr. EISNER. There are several key considerations that should be part of the solution to this pressing problem. First, in addition to being in the interests of the creators of content, it is also in the interests of the device manufacturers and consumers that there be common technological standards. Second, technological standards should not be dominated by any single company, and should be open so that consumers have convenient access to all content from all producers.

Third, the private sector should be given every reasonable opportunity to develop appropriate means of protection, and to adopt common, open standards for use in a wide variety of delivery devices, such as televisions, computers, Palm Pilot-like devices, or anything that can receive audiovisual works. Only in the event that computer companies, consumer electronic manufacturers, software manufacturers and the content providers fail to act should the Government set standards. But the pressure of a timeline for eventual Government action is critical to getting the private sector to do what is needed.

And let me add that we are delighted that yesterday eight companies offered to get to work immediately. It is about time, actually. But anyway, they finally did. So, any time period you put into this legislation, whether it be 18 months, 12 months, 6 months, whatever it is, should now begin today, because the letter that was sent is as of today. So, that could be the first day of a new world of working together. It is amazing how that letter came in yesterday.

Anyway, fourth, the standards that we seek must be consistently adaptable, renewable, upgradable, and extendable without the necessity of time-consuming bureaucratic processes in either private sector or in Government standard-setting organizations.

Fifth, once standards are set, they must be mandated for inclusion in all digital media devices that handle creative content.

Finally, it is critical that the Government act now to help achieve appropriate solutions. The digital pirates are not waiting to act, and neither can our Government.

Of course, any legislative solutions must be vetted by all appropriate committees of Congress. And, legislation will enjoy smoother sailing if it proceeds from agreement among the affected industries, consumer groups, and others with a stake in the digital future.

Given the complexity of the situation, we also acknowledge the need to avoid unintended consequences of any legislative intervention. But, the time to solve this problem is running short.

There are those who would argue that it is unprecedented to have Government involvement in the mandating of technological standards. This simply is incorrect. There are numerous precedents

for a Government role here, such as the All-Channel Receiver Act, which mandated VHF and UHF tuning in all televisions, and the Digital Millennium Copyright Act, which mandated Macrovision copy control technology in all VCR's. These are examples of precedents where the Government has said, put this piece of equipment in your television sets and have UHF reception, or change the way you are dealing with VCR's.

Others claim that Disney and other content-owners are seeking to stop home taping or eliminate fair use. Let me state for the record we are not here to hinder libraries and college professors from using portions of creative works for scholarly research. Nor are we here to interfere with consumers who wish to time-shift television programming.

Finally, the most outlandish misstatement I have heard is that content providers want to stifle innovation, experimentation, and research by our Nation's vibrant high technology companies. This is simply ridiculous. At Disney, we embrace technology. Continued innovation in high tech is necessary for our company to evolve and grow.

In short, all we are asking is that the Government facilitate the creation of standards to enforce current intellectual property laws. Providing a more secure environment for content is the single most important step the Government can take to stimulate broadband deployment and the digital television transition. And beyond the specific benefit, the protection of copyrighted works will make it possible for millions of Americans to continue to partake of the extraordinary economic benefits that result from our Nation being the preeminent content producer in the world. And, it will allow the hundreds of thousands of artists and would-be artists in high schools and grade schools to continue to have something to aspire to.

I thank you again for the opportunity to testify here today. I would be happy to answer any questions you might have.

[The prepared statement of Mr. Eisner follows:]

PREPARED STATEMENT OF MICHAEL D. EISNER, CHAIRMAN AND CEO, THE WALT DISNEY COMPANY

Thank you Mr. Chairman. I want to thank you, Ranking Member McCain and all of your colleagues for inviting us here to discuss the distribution of creative content over digital Broadband and digital Broadcast distribution systems. For all the reasons that I will share with you today, The Walt Disney Company urges the United States Congress to act to facilitate the establishment of open and common standards for technological protection of creative content in digital distribution.

U.S. produced movies, TV shows and other audiovisual works are part of the creative content industries that lead the U.S. economy in contributions to job growth, Gross Domestic Product and foreign sales and exports. Creative content represents nearly 5 percent of GDP, generates more than \$450 Billion annually and provides jobs for more than 4 million Americans. In fact, creative works account for a larger percentage of U.S. foreign sales and exports than almost all other sectors of our economy, including automobiles, aircraft and agriculture. By facilitating the establishment of open and common standards for protection of creative content, Congress will be acting to ensure the domestic viability of one of the most important positive contributions to our nation's balance of international trade.

Technological content protection standards also will play an important role in stimulating the deployment of Broadband communications networks, accelerating the digital television transition and re-energizing the sale of many different digital devices, including personal computers. Our nation's build-out of Broadband networks is going too slowly. The sale of computers and other digital media devices has

slowed. And, the pace of the digital television transition is a frustration to many including the local broadcasters who have invested Billions of Dollars in new digital transmission facilities.

The availability of high quality motion pictures and television programs on DTV and on Broadband networks will help drive consumer demand. That consumer demand will hasten the deployment of DTV, stimulate the sales of digital media devices and speed the build out of the vital telecommunications infrastructure that will drive our digital economy.

Digital technology and Broadband communications hold the promise of tremendous economic growth for our Nation. At Disney, we have embraced advanced digital technology. We were one of the first major studios to deliver our product digitally to consumers via direct broadcast satellite. We have one of the largest and most successful digital videodisc businesses. We broadcast digital television every day. We have state-of-the-art digital feature film production studios and were the first to produce and deliver our films completely in the digital realm with major titles such as "Dinosaur," "Toy Story" and "Monsters, Inc." Currently we are pioneering the development of digital cinema screens throughout the world. And, we have entered into a joint venture with News Corporation entitled Movies.Com. This new company will establish a direct broadband connection between U.S.-produced motion pictures and U.S. consumers sitting in their own homes. Using advanced digital technology, Movies.Com will enable exciting new choices and options for consumers wishing to access our movies and other creative content.

These Disney investments demonstrate two things. First, our Company has been enthusiastic in its embrace of new technology. Second, the digital revolution holds the promise of great economic growth for our nation and wondrous new services for our citizens. Unfortunately, these same digital technologies can enable a level of piracy—theft—that would undermine our capacity to produce films and entertainment, undermine the deployment of Broadband networks, undermine the digital television transition and ultimately result in fewer choices and options for American consumers.

To be sure, piracy has always been with us. But, digital piracy is different. In the analog world, each successive copy degrades in quality and sharing a copy requires one consumer to physically transfer that copy to another. In digital, each copy is perfect—a perfectly coded series of ones and zeros. The 1,000th copy is just as perfect as the original. And, because of the ubiquitous nature of the Internet, perfect, but unauthorized, copies can be transmitted virtually instantaneously all over the world with no regard whatsoever for the rights of the content owners. For a chillingly real depiction of where we are headed, please take a look at this short clip from a recent "Night Line" program in which 15-year-old Benjamin illustrates his ability to take—for free—any motion picture or television program of his choice. [Play Night Line clip]

We know that we can never achieve—and do not expect—100 percent content security. But, there must be a reasonably secure environment to prevent widespread and crippling theft of the creative content that drives our economy. As Benjamin clearly demonstrated, today, we are not even close. One research firm, Viant of Boston, estimates that more than 350,000 illegal pirate movies are downloaded from the Internet every day. In fact today, you can go to the Internet and find illegal copies of brand new films like "Harry Potter," "Lord of the Rings," "Monsters, Inc." and "Ocean's Eleven." Just in case you have any doubts about picture quality, just take a look at this excerpt from a downloaded pirate copy of the recent film "Black Hawk Down". [Play clip]

There are several key considerations that should be a part of the solution to this pressing problem. First, the interests of consumers, content owners and device manufacturers ALL require that there be common technological standards. Common standards will prevent consumers from confronting a bewildering array of confusing and incompatible standards. Common standards will help create a technologically predictable market to which content owners can bring their movies and other works. And common standards will make it reasonable to mandate that device manufacturers build the necessary hardware and/or software into their devices.

This does not mean that there will be a single "silver bullet" solution or that all content owners must use the same digital rights management system in the distribution of legitimate content. Rather, what the market needs is some means to ensure interoperability and a common set of "baseline" technologies to help digital media devices identify and reject the illegal, pirated copies.

Second, the technological standards should be open—not limited to the proprietary developments of a single firm. Widely available open standards, licensed at reasonable costs, will prevent the emergence of new "gatekeepers" who could retard the development of new digital services and limit consumer choice in content. A top

public policy goal for Broadband should be open standards so that consumers have convenient access to all content from all producers.

Third, the private sector should be given every reasonable opportunity to develop appropriate means of protection and to adopt common open standards for use in a wide variety of delivery devices. Only in the event of private sector failure should government set the standards. But, the pressure of a timeline for eventual government action is critical to yield the desired standards in a reasonable time frame.

Fourth, the standards that we seek must be renewable, upgradeable and extensible without the necessity of time consuming bureaucratic processes in either private sector, or government, standards setting organizations.

Fifth, once standards are set, they must be mandated for inclusion in all digital media devices that handle creative content. This is necessary to ensure a reasonably secure environment and to prevent unfair competition by non-compliant device manufacturers.

Finally, it is critical that the government act now to help achieve appropriate solutions. Disney is very grateful for the efforts of many in the Congress who have tried over the years to “jawbone” the affected industries to negotiate the required technological standards. For example, we thank Chairman Hollings and Ranking Member McCain for scheduling this hearing, which has acted as a healthy spur to discussions in the private sector. Other leading legislators have been helpful as well. Members of both the House and the Senate, Democrats and Republicans have written to the Motion Picture Association, to the Electronics Industries Association, to prominent high tech companies and to the FCC urging swift private sector agreement on technological standards to protect creative content in the digital world. And, we are grateful to Chairman Hollings and Senator Stevens for the Discussion Draft Legislation that they circulated last year. That Discussion Draft contained many innovative suggestions to break the Gordian knot that has frustrated all prior attempts to solve the digital piracy problem.

Of course, any legislative solutions must be vetted by all the appropriate Committees of the Congress. And, legislation will enjoy smoother sailing if it proceeds from agreement among the affected industries, consumer groups and others with a stake in the digital future. Also, given the complexity of the problem, we need to proceed carefully so as to avoid unintended consequences of any legislative intervention. But, the time to solve this problem is running short and prior attempts at jawboning have not produced a solution.

Some high tech companies, like Cisco Systems, have been helpful in the search for solutions and to them we express our gratitude. Unfortunately, other high tech companies have simply lectured us that they have no obligation to help solve what they describe as “our problem.” In fact, at least one high tech executive has described illegal pirate content as a “killer application” that will drive consumer demand for Broadband. Obviously, the development of Broadband networks is an appropriate National goal only if those networks are conduits for legitimate—not pirate—content.

I would like to respond briefly to some of the arguments that have been raised against efforts to deal with this problem. First, some argue that it is unprecedented to have government involvement in the mandating of technological standards. That argument is incorrect. There are numerous precedents for a government role here. For example, the Audio Home Recording Act of 1992 required that all digital audio recording devices conform to a specific content protection technology, namely, the Serial Copy Management System (SCMS). And, the Digital Millennium Copyright Act of 1998 requires all analog VCRs to include the Macrovision copy control technology. The All-Channel Receiver Act required all television sets sold in this Country to contain both VHF and UHF tuners. Clearly, there is ample precedent for legislation to mandate technical standards.

There is another issue I’d like to clarify. Disney and other content owners are not seeking to stop home taping or eliminate “fair use.” We are not here because we want to hinder libraries and college professors in using portions of creative works for scholarly research. Nor are we here because we want to interfere with consumers who wish to make a home copy of Broadcast and basic cable TV programs for their own personal time-shifted viewing. We are confident that the government can act to facilitate the needed technology standards without endangering home taping or fair use.

Finally, I want to emphasize that Disney has no desire to stifle innovation, development, experimentation and research by our nation’s vibrant high-technology companies. We embrace technology—it is an everyday part of our business. Continued innovation in high tech is necessary for Disney to evolve how we create and distribute our content and to reach consumers in new ways. We are eager to work with the consumer electronics and information technology industries to ensure that the

technological standards we seek are NOT an impediment to continued innovation and experimentation.

I thank you again for the opportunity to testify here today and I would be happy to answer any questions that you might have.

The CHAIRMAN. We thank you, sir. Mr. Chernin.

**STATEMENT OF PETER CHERNIN, PRESIDENT AND CHIEF
OPERATING OFFICER, NEWS CORPORATION**

Mr. CHERNIN. Good morning, Mr. Chairman, Senator McCain, Members of the Committee. My name is Peter Chernin, and I am the President and COO of the News Corporation. Thank you, Mr. Chairman, for inviting me to participate in today's hearing. I would like to take this opportunity to applaud you for your leadership on seeking to ensure copyright protection for content producers in the digital broadband age. News Corporation is one of the world's largest media companies. Our job is to create and select the most valuable information and entertainment and to distribute it as widely and as efficiently as technology will allow.

The entertainment industry is in a very exciting but challenging time. The rise of broadband, Internet, and other digital technologies is providing us with tools of unprecedented flexibility that we are only now beginning to fathom. However, we strongly believe that the great potential and promise of broadband, Internet, and other digital technologies can be fully achieved only if protections are in place to safeguard our investment in the development and distribution of content.

Recently, we have seen more and more programs like DivX, Gnutella, Morpheus, Bear Share, and LimeWire that streamline the downloading of motion pictures and television programming without compensation to the copyright-holder. With the advent of broadband, it is only a matter of time before these file-sharing technologies and other technologies have a serious impact on the economic viability of the motion picture and television broadcast industry.

One solution to this dilemma may be that we only distribute our content through media that are secure, for example, pay cable, direct broadcast satellite, and DVHS on digital distribution channels to the home that provide a basic level of security for digital content. In fact, even the Internet itself is not the culprit. It is the unauthorized redistribution of unencrypted content that we seek to halt.

In each of these distribution methods, we are able to protect our content through either negotiation, licensing, or contractual arrangements. However, there is one major digital distribution method that does not currently offer adequate protection, digital over-the-air broadcast television. Presently, cable and satellite have a competitive advantage of DTV due to the closed nature of cable and satellite systems that allow for encryption and thus the protection of content. DTV is not encrypted for public policy reasons and thus does not enjoy the same protections today.

However, we have identified a technological solution that works without encrypting DTV. It involves insertion of a broadcast flag in DTV's signals that can be detected upon receipt by DTV processing equipment. Once detected, the receiving device would protect the

content from being redistributed illegally on the Internet. Unfortunately, we have not yet reached agreement with the consumer electronics and information technology industries about the use of the broadcast flag.

Mr. Chairman, as you are no doubt aware, there has been an ongoing effort for the last several years to negotiate the protection of all digital audiovisual content delivered to the home network, including but not limited to DTV. These negotiations are often referred to as the 5C negotiations, and have made substantial progress with regard to the protection of pre-recorded and conditional access delivered content. Fox applauds that progress. However, I regret to report to you today that these negotiations are at an impasse over 5C's refusal to include the broadcast flag in its license.

I have always believed that an agreement should first be brokered through voluntary industry-led negotiations and then blessed by Congress to ensure a level playing field against rogue companies who will not sign up for voluntary obligations. But time is growing short for digital TV copyright protection. The parties to the negotiations all know that the broadcast flag provides a workable low cost technological solution to this problem, yet the 5C companies have been unwilling to embrace this license-first then legislation approach.

I would hope that the 5C companies and their CE and IT brethren would rethink their positions. If we cannot arrive at a voluntary industry consensus very soon, broadcasters will be forced to come to Congress to ask for legislation.

Another problem is that we need to be able to protect analog content, given that hundreds of millions of TV sets can only accept analog and not digital content. Unfortunately, analog content can easily be converted into an unprotected digital form that can in turn be copied or redistributed without authorization. We are developing a plan to plug what is known as the analog hole that includes harnessing watermark technology that would prevent such conversion from being used to avoid content protection obligations.

Finally, we are working on a plan to frustrate the unauthorized viewing of content delivered via the Internet. We are mindful of not overcorrecting a problem by burdening Internet appliances any more than necessary, but we are confident that the problem can be solved.

It is reported that every day hundreds of thousands of movies are being downloaded without compensation to the copyright holders. The competition from these illegal copies of our movies and TV shows is the single biggest obstacle to developing a viable business model to offer video content on broadband. Again, we are optimistic we can develop a technological solution to address this phenomenon in a cost-effective way.

At the end of the day, Mr. Chairman and Members of the Committee, if we do not find creative solutions to these real and growing problems, DTV protection, plugging the analog hole, and the wholesale looting of content via the Internet, consumers will be the ultimate losers. While some may see a short-term gain in avoiding copyright protection, the long-term result will be less consumer

choice, and stunted American technological growth and development.

Thank you for providing me this opportunity to present the views of News Corporation. I would be happy to answer any questions, sir.

[The prepared statement of Mr. Chernin follows:]

PREPARED STATEMENT OF PETER CHERNIN, PRESIDENT AND CHIEF OPERATING OFFICER, NEWS CORPORATION

Good morning Mr. Chairman and Members of the Committee. My name is Peter Chernin and I am the President and Chief Operating Officer of the News Corporation. Thank you, Mr. Chairman, for inviting me to participate in today's hearing. I would like to take this opportunity to applaud you for your leadership on seeking to ensure copyright protection for content producers in the digital broadband age.

News Corporation began fifty years ago as the owner and operator of a single newspaper. Today we are one of the world's largest media companies. News Corporation operates newspapers, a publishing house, a film company, a television network, television stations, cable program networks, and the largest TV production studios in the world. Yet in all that time, and in all those businesses, the company's basic function has not changed. Whether we're delivering the New York Post in Harlem, New York, broadcasting our FOX television programs to viewers across South Carolina, or preparing our novels from Harper Collins to be downloaded onto e-books for students in Alaska, News Corporation is essentially a producer and distributor of content. Our job is to create and select the most valuable information and entertainment, to package it as attractively as possible, and to distribute it as widely and as efficiently as technology will allow.

As an industry, we are in a very exciting but challenging time. The rise of broadband Internet and other digital technologies is providing us with tools of unprecedented flexibility that we are only beginning to fathom. We are already harnessing these new technologies and distribution methods in a big way: over fifty percent of the United States television households are able to receive FOX broadcast in DTV (through 27 of our owned and operated and affiliate stations), including the first-ever all-digital, widescreen Super Bowl earlier this month; our BSkyB business is the leading digital satellite broadcaster in Europe; and we have released hundreds of FOX movies in digital form on hundreds of millions of DVDs sold all over the globe. And there is much more to come. We hope soon to be rolling out Movies.com and other interactive products, and be releasing FOX movies in the high-definition digital D-VHS pre-recorded format. However, we strongly believe that the great potential and promise of broadband Internet and other digital technologies can be fully achieved only if protections are in place to safeguard our investment in the development and distribution of that content. Thus, the single most important issue for all entertainment companies, and certainly for every content producer, is that of copyright protection, a constitutional right that has increasingly come under attack in this digital age.

The right to hold a copyright can be traced back to Article One of the United States Constitution. However, the constitutional protections of copyrighted works are being threatened by the ease with which people can copy and distribute materials in cyberspace. There is no better example of the content community's potential, as well as its vulnerability, than the rollout of broadband Internet access. Without the adequate technological and legal protections for intellectual property, content producers and legitimate content distributors will find themselves vulnerable to theft by anyone who owns or has access to a computer with a broadband connection to the Internet.

The Internet is more than an economic medium; it is a supremely democratic one in providing equality of access to information, and this deserves to be celebrated. But its ability to empower the general public must not be taken as a license for consumers to essentially shoplift online. What the general public has to realize is that many businesses that rely on the creation, distribution and sale of content will be put in jeopardy by massive copyright infringement. This, in turn, will impact the quality of content that makes the broadband Internet so exciting for so many people.

Recently, we have seen more and more programs like DivX, Gnutella, Morpheus, Bear Share and Lime Wire that streamline the downloading of motion pictures and television programming without compensation to the copyright holder. With the advent of broadband, it is only a matter of time before these file-sharing technologies and other emerging mechanisms have a serious impact on the economic viability of

the motion picture and television broadcast industry. Films and television shows are like any other products in search of investors. However, if investors believe that the products they are investing in cannot be protected, thus losing their economic value, those investors will look for other products to fund, or at least other distribution means for those products. That alone will have a dramatic impact on the millions of jobs that are created by the entertainment industry. Why would one invest millions of dollars in a motion picture or a TV show only to have it stolen and placed on the Internet where anyone can access it for free?

Lack of protection of intellectual property is not just a threat to the entertainment industry; it is a threat to American business as a whole. Protection of intellectual property has been crucial to this country's prosperity over the past several decades, and is as critical to the success of the Information Revolution as it was to the Industrial Revolution. U.S. media industries dependent on copyright employ nearly four million workers and produce more than \$65 billion in exports. American books, movies, television and music are among our most successful products overseas; but if they cannot be protected from unlawful copying, their export value would shrink to nothing. The potential of the wholesale disregard of copyrights would be devastating to employment and job creation in the U.S., and to any chance of making the Internet a boon to us all.

The threat is real not just for the creators of content, but also for those businesses that make their livelihood on the redistribution and licensing of content. For example, the market for network television shows after the first network run (including the value of rerun and re-purposing rights, and syndication to local broadcast stations) in this country alone is hundreds of millions of dollars. Around the world, American-produced television programming generates additional billions of dollars in revenues. Imagine a world where those revenues vanish because any television episode can be posted to the Internet at the time of its first network run for redistribution around the world. What would happen to the hundreds of TV production companies and distributors that employ thousands if buyers vanish because there were no incentives to purchase the rights of episodes because that are freely accessible on the Web? These are the questions we are asking ourselves.

One solution to this dilemma may be that we only distribute our content through media that are reasonably secure. For example, pay cable, direct broadcast satellite, and D-VHS are digital distribution channels to the home that provide a basic level of security for digital content. Indeed, even the Internet affords us the basis to securely transmit our content. In each of these areas we are able to protect our content, through either a negotiation process regarding protection technology (for example, "D-Theater" encryption for D-VHS), or a licensing process using a commercially available Digital Rights Management (DRM) technology for the Internet, or through contractual arrangements with cable and satellite providers. However, there is one major digital distribution method that does not currently offer adequate protection right now—digital over-the-air broadcast TV ("DTV").

One might ask why broadcast television is worthy of protection in this time of multichannel offerings such as cable and direct broadcast satellite, each offering a vast array and variety of programming. The answer lies in the unique local nature of the service provided by broadcast television. For it is broadcasters who provide viewers with:

- high quality local news that keeps viewers abreast of the happenings in their community;
- community affairs programs that help them keep up with local politics, issues, and events in their area;
- coverage of local sporting events at their local high school or community college;
- the weather reports that help them prepare for the coming day;
- an emergency alert system that helps warn viewers of dangerous weather conditions; and,
- traffic reports that help them manage their local rush hour.

In addition to this local programming, local broadcasters provide viewers with what is still, overall, the most popular and high quality entertainment programming on the air, as well as the big "event" programming that touches us all and brings us together as a nation, such as the Super Bowl, the Olympics, and the State of the Union address. Finally, and perhaps most importantly, broadcast television is universal, which means that for twenty-five percent of the country broadcast television is their only source of programming.

News Corporation has recently spent a tremendous amount of money investing in the future of this medium that, as I stated above, is so vital to this country. I know that that Members of this Committee are strong supporters of this medium and its

rapid transition from analog to digital. Our investment in new broadcast technologies and commitment to the digital transition positions us to be a leader in the rollout of DTV.

Presently, cable and satellite have a competitive advantage over DTV due to the closed nature of cable and satellite systems that allow for encryption, and thus the protection of content. DTV is not encrypted for public policy reasons and thus does not enjoy those same protections today. However, we have identified a technological solution that works *without* encrypting DTV. It involves insertion of a "broadcast flag" in DTV signals that can be detected upon receipt by DTV processing equipment. Once detected, the receiving device would protect the content from being redistributed on the Internet. We are hopeful that through negotiations with the consumer electronics (CE) and information technology (IT) industries this solution will be voluntarily agreed upon and incorporated in relevant copy protection technology licenses; in fact, FOX is leading this charge. However, even if we do reach agreement, targeted legislation will be necessary in order to ensure a level playing field for all entities involved.

Unfortunately, we have not yet reached the agreement with the CE and IT industries. Mr. Chairman, as you are undoubtedly aware, there has been an on-going effort for the last several years to negotiate the protection of all digital audio-visual content delivered to the "home network", including but not limited to DTV. These negotiations are often referred to as the "5C" negotiations. Those negotiations have made substantial progress with regard to the protection of pre-recorded and conditional-access delivered content (e.g., pay-per-view, video-on-demand, pay and basic cable), and FOX applauds that progress. But as a representative of one of the largest broadcasters in the country, I regret to report to you today that, although some hopeful developments have occurred with regard to protection of over-the-air broadcast content, those negotiations are presently at an impasse over 5C's refusal to include the obligation of protecting DTV via the "broadcast flag" in its license. They say there are antitrust problems with extending their license to cover broadcast; they also say that potential licensees will be so turned off by a broadcast protection obligation that they won't sign up for a 5C license at all. We think these objections are unfounded. We don't believe that a serious antitrust objection can be raised to such a narrowly targeted and pro-competitive technology as the broadcast flag; nor do we think it right, or even logical, that non-complying competitors would use the fact that their devices do not contain protection of DTV as a selling point. Regardless, we are currently at an impasse with 5C.

Needless to say, this impasse is much to the broadcast industry's collective frustration. I have always believed that an agreement should first be brokered through voluntary, industry-led negotiations, and then blessed by Congress to ensure a level playing field against "rogue" companies who will not sign up for the voluntary obligations. But time is growing short for digital TV copyright protection. Lengthy negotiations have resulted in some progress in airing the issues but have not produced tangible results. The parties to the negotiations M.L. know that the broadcast flag provides a workable, low-cost technological solution to this problem. Yet, the 5C companies have been unwilling to embrace this "license-first, then legislation" approach. Other voices in the CE and IT industries have likewise refused to support this two-step approach. I would hope that the 5C companies and their CE and IT brethren would rethink the position they are presently taking. If we cannot arrive at a voluntary industry consensus very soon, broadcasters will be forced to come to Congress to ask that a DTV solution be imposed on the CE and IT industries.

Just as we are striving to protect our content when distributed by DTV, we are addressing two other mechanisms that threaten content. Into the foreseeable future we will still need to deliver content to consumers in an analog form; after all, hundreds of millions of TV sets can only accept content in that form. Unfortunately, analog content (including protected digital content converted to analog for viewing purposes) can easily be converted into an unprotected digital form that can in turn be copied or redistributed without authorization. This is called the "analog hole" in digital content protection schemes. We are developing a plan to plug the "analog hole" that includes harnessing watermark technology that would prevent such conversions from being used to avoid content protection obligations. We hope to secure inter-industry consensus on such a proposal, and we welcome your assistance in encouraging all relevant parties to make this happen. Once it does, we would have that solution ratified by Congress.

Finally, we are working furiously on a plan to frustrate the unauthorized viewing of content delivered via the Internet. It is a difficult problem to address because there are so many ways unauthorized content can be distributed on the Internet, mindful of not over-correcting the problem by burdening Internet appliances any more than necessary. But we are confident that the problem can be

solved; we know it must be. It is reported that every day, hundreds of thousands of copies of movies are being downloaded, without compensation to their copyright holders, and this number is growing rapidly, in tandem with the increasing speed and proliferation of Internet-delivered broadband. The competition from free, but illegal copies of our movies and TV shows is the single biggest obstacle to developing a viable business model to offer consumers authorized versions of these same movies and TV shows. Again, we are optimistic that we can develop a technological solution to address this phenomenon in a cost-effective way, just as we have with DTV, and will soon be doing with the “analog hole”.

However, it is critical that Congress plays an active role in ensuring that the parties reach a consensus on how to solve this problem as quickly as it is technologically possible. This is an Internet problem that needs to be solved at Internet speed; we need Congress to help make that happen. As with the broadcast flag and analog hole solutions, we will need Congress to codify the solution to the illegal download problem. We at News Corporation are working to build the necessary support in the private sector, with consumer electronics and computer manufacturers and Internet service providers and others to come up with solutions to this incredibly complex problem so that we can all—but especially consumers—be the beneficiaries. With our combined technological expertise, we have a chance to stop the theft—which everyone agrees must be stopped—of copyrighted works and to provide the business opportunities that will drive the development of new and innovative products and services.

At the end of the day, Mr. Chairman and Members of the Committee, if we do not find creative solutions to this real and growing problem, consumers will be the ultimate losers. While some may see a short-term gain in obtaining free unauthorized material from the Internet, the long-term result will be less consumer choice and stunted American technological growth and development.

Thank you for providing me this opportunity to present the views of News Corporation on this important topic. I will be happy to answer questions.

The CHAIRMAN. Very good. Mr. Vadasz.

**STATEMENT OF LESLIE L. VADASZ, EXECUTIVE VICE
PRESIDENT, INTEL CORPORATION**

Mr. VADASZ. Thank you, Mr. Chairman, for inviting me. My name is Les Vadasz. I am executive vice president of Intel Corporation. I have submitted my testimony in writing, and I am just going to say a few words, just to mention a few points.

20 years ago, Mr. Valenti called the then-nascent VCR industry the Boston Strangler of the film industry. In the year 2000, the media industry revenue from VCR amounted to about \$11 billion, much more than their revenue from box office receipts.

The latest manifestation of the technophobia of the media industry is the campaign to mandate the features of personal computers and information technology product, Government-mandate these features.

Let me talk about the information technology industry. I spent over 40 years of my career either creating technology or creating businesses out of technology. It is a fast-moving, highly innovative industry, and it is very large, over 20 times larger than the media industry we are working to protect.

Let me tell you how Intel works. We spend many hundreds of millions of dollars to develop a single microprocessor. We spend billions of dollars even before we develop that product to equip our manufacturing plants. And, we run as fast as we can. We listen to our customers; we listen to our constituents. But, at the end of the day we can only run fast if the product decision is ours. Success or failure is determined by what features we include in our product, and how fast we get the product on the market. To think that something good could come out of a Government-mandated delib-

erative process interjected in this development cycle is just plain wrong. Innovation would suffer. Innovation would come to a screeching halt. Investment levels would suffer, and you would create an irreparable damage to a vital industry.

Now let me talk about copy protection. I do not think I have to speak much about Intel's stand on intellectual property protection. Our vigorous defense of our intellectual property speaks louder than I could ever do, but it is not just our intellectual property. We have to work in an industry environment where everybody's intellectual property is protected, or there is just chaos. There is no question in my mind about that, and that is why Intel was a very active and very willing participant in the cross-industry effort to attend to the legitimate issues that the movie industry has.

We have been at this now for over 6 years. Lots of good technology was developed. Some of that technology is beginning to be used. Where are we? DVD is protected. Cable transmission is protected. Satellite transmission is protected. Internet transmission, contrary to some beliefs, is and can be protected.

Furthermore, based upon the work of this Committee, who by the way has some of the best engineers that I know, once the protected content is receive in your home, it can be protected as it goes from one device to another device to another device in your home. That technology is available today. It only needs to be used.

Now, the issue of the day is terrestrial broadcast and the analog hole. There are about 130 people working on the issue of the terrestrial broadcast, a cross-industry group, from the content industry, from the consumer electronics industry, from the information technology industry. I expect that by the end of March there will be a specification proposed on how that problem can be addressed, and I think to the satisfaction of virtually everybody.

Now, the analog hole problem will probably need more time. That is a difficult problem. That is a newer problem that that committee is engaged in, but to me, when I look at all these technology developments that we do, that is the easy part. It is really how to use these technologies. We are putting some very powerful technologies in the hands of the media industry, and I have to admit, I worry: "Is that going to be used to the benefit of the consumer, or to the detriment of the consumer?"

Let me tell you what I mean. The personal computer started out as a productivity tool, but today it is much more than that. It is integral to the fiber of our life. It is integral to the fabric of our children's life. The media industry would try to make that personal computer nothing more than a DVD player—an expensive DVD player—or a CD player, and maybe not, at that.

Why am I worried? Well, I have here some of the newer CD's you can buy. It comes with some disclaimer which says—well, if I translate it, this may play on your PC or it may not play on your PC, but certainly I can guarantee you that if you are used to collecting a number of songs on your MP-3 player while you exercise and listen to them, you cannot do that with this.

Worse than that, these CD's do not even play on your CD, so I would like to leave you with two thoughts. First, please do not tamper with the dynamics of the information technology industry. You will create irreparable damage to a vital industry.

Second, listen to the consumer. Be the voice of the consumer. I think it is time we refocused this activity from content protection to consumer protection.

Thank you very much for listening to me.
[The prepared statement of Mr. Vadasz follows:]

PREPARED STATEMENT OF LESLIE L. VADASZ, EXECUTIVE VICE PRESIDENT, INTEL CORPORATION

I appreciate the opportunity to appear before the Committee to discuss the information technology (IT) industry's work on creating a more secure environment for the dissemination of digital content. Intel—and the rest of our industry—has as great, if not a greater, interest as the studios in the growth of a robust market for new digital content offerings to the consumer. And, we have an equally strong interest in the protection of intellectual property.

But we come at these challenges from very different perspectives. The IT industry is all about innovation; we embrace and champion technological progress. The content community, by contrast, has historically feared technology—from the advent of sound recording, to the development of the VCR, the DVD, the PC and other digital devices. Yet every advancement in technology has proven to be a major growth catalyst for the studios. Videocassette rental and sales totaled about 11 billion dollars last year, exceeding box office receipts by some 2+ billion dollars. This is the device once referred to by Jack Valenti as the “Boston Strangler” of the film industry. Other “attackers” of the film industry include the DVD, which added another 5.9 billion to studio receipts in the last year.¹ It is important to keep these facts in perspective when reviewing claims of imminent threats to the health of the film industry.

Nevertheless, we agree that content protection is important and we are working together on that challenge. But at the outset, I want to emphasize the following points:

- Any attempt to inject a regulatory process into the design of our products will irreparably damage the high-tech industry: it will substantially retard innovation, investment in new technologies, and will reduce the usefulness of our products to consumers.
- Consumer rights to enjoy powerful technology products, with the robustness they have come to expect, *and* their right to fully enjoy content in accordance with what the law permits, would both be greatly diminished if the studios' “wish list” of content protection objectives were fully implemented. PC's would become a “dumb device” when it comes to copyrighted content, and consumers would lose important fair use rights now protected in the law.

IT Industries: the power behind our economy

The information technology sector is enormously important to the overall health of the US economy. The Department of Commerce just released a new report entitled *Digital Economy 2002*. According to this report, in 2000, the IT-producing industries employed some 5.6 million workers, with average wages per worker more than twice the national average. During the period from 1996–2000, IT “was responsible for 28 percent of overall real economic growth”. Most importantly, the study states that the evidence “suggests that massive IT investments by U.S. industries are producing positive and enduring changes in the nation's economic potential.”²

Information from the Bureau of Economic Analysis provides useful insight into the relative positions—and importance to the economy—of the IT industry and the studios. According to *Digital Economy 2002*, business, personal, and government spending on IT goods and services (not including communications services) totaled \$600 billion in 2000. Meanwhile, the gross domestic product of the motion picture industry was approximately \$35 billion in 2000.³

¹ Scott Hettrick, “2001: Higher Ground, Tight at the Top,” *Video Business*, 21 January 21 2002, 32.

² United States, Department of Commerce, Economics and Statistics Administration, *Digital Economy 2002* (Washington: February 2002, accessed 25 February 2002); available from <http://www.esa.doc.gov/508/esa/DIGITALECONOMY2002.htm>.

³ United States, Department of Commerce, Bureau of Economic Analysis, *Gross Domestic Product by Industry in Current Dollars, 1994–2000*, (Washington: undated, accessed 25 February 2002); available from <http://www.bea.doc.gov/bea/dn2/gpoc.htm>.

Innovations in our industry have come at a staggering pace. Consumers have come to expect from us a continuous flow of ever more powerful devices, at lower cost, each year. These innovations require large amounts of investment and tremendous amounts of research and development. Last year, Intel spent \$3.8 billion on R&D alone, about half of all that Hollywood earned in box office receipts in the past year.⁴

This dynamic of innovation would be choked by any attempt to regulate the design of products solely for the benefit of one industry. Designing products through a regulatory process, as some studios have advocated, would inject political influences into technology development in very destructive ways. Investment and innovation will both suffer, as a fear of entanglement with government processes will have a chilling effect on investors and subject new ideas to “reg review”.

Overview of content protection: the work that has been done by the IT industry

The primary challenge in content protection, we have found, comes down not to technology but answering the question: how is the consumer best served?

The first time the issue of digital video content protection arose was in 1995, when Digital Versatile Discs—DVD’s—were preparing to come on the market. Concerned about mass copying of DVD’s, Hollywood attempted to persuade Congress to legislatively mandate technological “fixes” to address the prospect of widespread consumer copying of DVD discs. Not surprisingly, the studios opted for an over-reaching approach that would have all but eliminated the value of the PC experience.

Responding to the threat of legislation freezing in place inadequate, clumsy solutions to copy protection issues, Intel and the PC industry mobilized the consumer electronics industry and the studios to form a working group known as the Copy Protection Technical Working Group (CPTWG). This body reviewed and enhanced cryptographic tools that could be applied to DVD content—which still today protect DVD’s from being hacked by all but a tiny percentage of users of these products. Through the work of CPTWG (subgroups 4C and 5C), we have also tackled the issues of content distribution between devices and the protection of information in recordable media.

While this consensual process yielded specifications that sped DVD to market, I have serious concerns that consumers were not fully served.

The over-the-air broadcast protection question

One immediate concern of the studios, today, is over-the-air broadcast of digital content. The CPTWG is nearing completion of technical specifications to address this issue. There is general agreement that it may be necessary for the FCC to assist in the implementation of the digital broadcast protection solution by enacting a very narrow regulation respecting requirements for digital television receiver products to ensure that they pass on the content in a protected form. However, I have great concerns that we are, again, rushing this technology to market without pausing to ensure that customers’ reasonable expectations for use of the products are weighed in the balance.

The “analog hole” issue

Another issue, much more complex and difficult to solve, is the so-called “analog hole”. This is the situation presented by millions of legacy devices—such as the commonly owned VCR of today—that have digital inputs and analog outputs. Such devices can be used to reconvert a digital signal to analog, from which it can then be reconverted to digital through available PC equipment or other devices.

Work toward solving this issue has started—“watermarking” solutions have been proposed and are being evaluated—but there is no clear path to a solution at the present time. Again, we are working on this issue aggressively, but some studio demands—we believe—would infringe on consumer fair use rights.

It has been suggested by the studios that the placement on chips of electronic circuitry that would recognize and respond to watermarks be mandated by regulation. For the government to mandate how the IT industry designs and develops chips—or to try and force agreement for design features—would be ludicrous. As I said before, irreparable economic damage would result.

Our view of the studio perspective

For some studios, the objective is total control. In the early 70’s, when RCA was experimenting with the new technology of videotape, researchers were eager to find

⁴Box Office receipts totaled \$8.35 billion in 2001. See Sharon Waxman, “Hollywood’s Great Escapism: 2001 Box Office Receipts Set a Record” *The Washington Post* 4 January 2002, p A01.

a means to control consumers' use of the product in order to maximize studio revenues. The means eventually chosen was simple: a video would play once, and when finished, the cassette would lock into place. The customer would have to return the video to the store, and pay again, to have it unlocked. In spite of the restrictive nature of this technology, the Disney executives were horrified because they could not control how many people could watch the videotape.⁵

In 1981, Mr. Valenti bemoaned the prospect that the industry would be overwhelmed by "millions of little tapeworms" eating at the very heart and essence of copyright(s).⁶ Today there are 88 million VCR's in use in the US alone, yet the studios are making more money than ever before. Since the VCR has been introduced, the number of new films released per year has more than doubled, while annual sales of videotapes have grown from approximately 3 million units to over 700 million units.⁷ Four and a half million VHS tapes of *Shrek* were sold in just two days. As I noted before, consumers spent \$11 billion on the rental and purchase of VHS tapes in 2001.⁸

Substitute "digital" for "tape" in Mr. Valenti's comments in 1981 and the arguments are the same. Congress should not engage in futile attempts to design products by regulation. Instead, Congress should focus attention on the degree to which the consumer interest is being undermined by a slavish adherence to demands for "total" content protection.

Where is the voice of the consumer?

There is a fundamental difference between the perspectives of the high-tech industry and the content community. High-tech does not have one narrow market objective—that of maximizing revenue from content distribution. We have a broader marketplace composed of hundreds of millions of consumers who want ubiquitous, powerful digital tools that can manage a wide variety of information, content, and applications *and who want to use them for all lawful purposes*.

Consumers expect, when they buy a PC, that it will have the power, versatility, and robustness that they know our industry can provide. They also have expectations to be able to make full use of the PC's ability to store, retrieve, create, and manage digital content. We intend to provide that utility, while providing technologies to protect against wholesale copyright infringement.

I have stated that I have concerns whether all of the compromises that have been reached to date are in the best interests of the consumer. We have rejected some of the more onerous controls that have been advanced by the content community, such as:

- "Forensics" tracking—which would identify parties from whom unauthorized copies of content products were obtained—with very substantial impacts on consumer privacy;
- "Selectable output" controls that would allow the content owner to arbitrarily meddle with the consumer's electronics;
- Playback controls, which could require devices to inspect all digital content and prevent playback of any content which is not approved by Hollywood.

Voluntary, consensual standards—the best means to the right balance

In the end, the only way to effectively balance the interests of content owners, manufacturers of consumer electronics devices, and the information technology industry with the rights of consumers is through the voluntary, consensus-based process. It can be difficult, does not lend itself to "one size fits all" solutions, and may be viewed as cumbersome by some who would rather see the process driven by top-down control mechanisms. But it is the only path which will allow technology to advance efficiently while reconciling all of these competing interests.

There are new "intelligent" consumer products, exemplified by the PC, that are dramatically improving the consumer experience. The real question for the content community is not whether we will provide effective content protection tools, but rather whether they are prepared to enter the digital age. They must finally accept that consumers want affordable, usable digital products and they must develop new business models that give consumers what they want—without obsessing about controlling all of the consumers' choices. The video rental market has contributed very

⁵ Lawrence Lessig, "May The Source Be With You," *Wired* (December 2001, accessed 25 February 2002); available from <http://www.wired.com/wired/archive/9.12/lessig.html>.

⁶ Ellen Goodman, "The Right To Zap," *Washington Post*, 24 January 1984, p A13.

⁷ MPAA Research Department, *2000 US Economic Review* (accessed 25 February 2002): available from <http://www.mpa.org/useconomicreview/2000Economic/index.htm>.

⁸ Hettrick, 32.

substantially to studio profits—but that market developed over their early objections to the idea of allowing consumers to view a film as many times as desired without paying for each viewing. The same will be true of digital products, once the studios move forward and take advantage of the content protection tools that we are now offering.

I would like to leave this Committee with the following thoughts:

- First, listen to the consumer—he is paying the bill for all of our products. Consumers want flexibility and power in digital products and robust applications.
- Second, do not tinker with the IT industry by trying to regulate the development of our technologies. Irreparable damage will result—the pace of innovation, productivity growth, and our industry’s contribution to economic growth will all decline.
- Third, do not buy into a view of content protection that will deprive consumers of the ability to get the full benefit of the capabilities of the PC by neutering it—when it comes to content management—to be nothing more than a more expensive version of a “dumb” DVD player.

Thank you for your time. I would be happy to answer any questions.

The CHAIRMAN. Very good. Mr. Vadasz, your plea that we do not tamper with the industry, you are the gentleman that is the vice president of Intel, the executive vice president of Intel. I think back on this Committee when we hampered and we saved you. You would not be up here testifying. I will never forget it. Everybody thinks of Ronald Reagan. I do, too, and one of the best parts of his administration was, he was a protectionist. He saved the automobile industry with a voluntary restraint agreement on motor vehicles, the same with the hand tools, the same with Sematech, the semiconductor industry. I will never forget—and you go double-check it—a gentleman by the name of Frank McCabe, and he was in charge of your industry there in Dublin, Ireland. It is the most modern microprocessing plant in the world. Intel—you know about it, do you not?

Mr. VADASZ. Yes.

The CHAIRMAN. Well, you go ask him, because as he showed me, and he said, Senator, if it had not been for Sematech—\$900 million tampering by this Government over a 10-year period. He said, if it had not been for your Sematech, we would not have it here. What is your response? Now, where do you get all this nonsense about how we are going to have irreparable damage?

We would not know, we are not technologists. We do not know how to irreparably damage you, other than trying to bring in line what you say you can do. We now have the letters here by Intel and everybody else that technology is available and we can do it. Until we had this hearing, they said it could not be done, but now we know the best of the best can do it, and they are ready to do it, and that is all we are asking.

We do not want to legislate. We want to give you time. What would be a reasonable time? Since you know all the technology, what would you think is a reasonable time to develop the technology that you right now—and I will make this letter a part of the record.

The CHAIRMAN. What would be a reasonable time, since you know the technology and I do not?

Mr. VADASZ. First of all, Senator, I appreciate very much what the Government has done in the time since Sematech was formed.

What was done was the right thing. It was creating the necessary infusion of capital to have our industry continue with innovation.

I am not talking about that. What I am talking about is that when you put a regulatory process in a very rapid design cycle of products you, perhaps inadvertently, will slow down the process of innovation, and you put these kind of regulatory uncertainties into new developments that the industry will have irreparable damage. That is a totally different issue in my mind, than providing the means for a capable industry like our industry to continue with innovation, like what Sematech has done.

The CHAIRMAN. Well, how did the All-Channel Receiver Act, or how did macrovision put in uncertainties? It worked extremely well, as far as we know here at the Committee level. What kind of uncertainty? We are trying to fix certainty, but let you do it. That is what we are trying to do is to give certainty. That uncertainty allows for piracy.

And that is all the testimony I have got, and I will make a copy in the record also of the Time Magazine, the Pirates of Prime Time We will make that and put that in the record also.

[The information referred to follows:]

The Pirates of Prime Time

Anyone want to trade some episodes of The Simpsons online? TV Land is getting Napsterized (By Anita Hamilton)

Saturday, Feb. 16, 2002

Michelle Chaplin can't get enough Sex and the City. She has seen virtually all 66 episodes of the series—some of them, like the one in which Samantha tries to seduce a priest, repeatedly. But unlike most people, who pay an extra \$13 a month on their cable bills to get HBO, which carries the show (and is owned by TIME's parent company AOL Time Warner), Chaplin gets her Sex and the City free. Using a program called Morpheus, she goes online and downloads any episode she wants in as little as 10 minutes. Then she watches her haul on the computer. "I know it's not legal," the college sophomore says, "but it's easier for me to download than it is to get HBO or cable."

People like Chaplin pose an increasingly worrisome problem for the \$80 billion television industry. Just ask anyone who works in the music business, which in 1999 was upended by a free music service called Napster that made music swapping easy online. While Napster was subsequently hobbled by lawsuits, it pried open a Pandora's jewel box: Last year CD sales declined for the first time in a decade. Now, with the proliferation of a new generation of "file sharing" programs such as Morpheus, people are swapping TV shows and movies along with their music—more than 11 million Americans do it. And since the current programs, unlike Napster, are decentralized, it's much harder to shut them down.

In TV Land, the swapping comes on top of another, potentially bigger threat. While college kids and geeks are swapping comedies and cartoons online via PCs, a controversial new device called ReplayTV 4000—think of a supersmart VCR—lets regular nontechie folks save television shows in pristine digital format directly from their TV, then watch them commercial free and send them over the Net to other Replay users. Hackers have even figured out ways to copy Replay files to their personal computers, where the files can be uploaded by users of Morpheus and similar programs for wider dissemination.

Hollywood is not amused, and has filed two lawsuits: one against the makers of Replay, the other against the creators of Morpheus and two similar file-sharing services called Grokster and Kazaa. While it may be O.K. to copy a show for yourself on the VCR, "it's not O.K. to start sending it around and file sharing," warns Jack Valenti, CEO of the Motion Picture Association of America. The first legal face-off begins March 4 with a hearing on the Morpheus case in federal district court in Los Angeles. The Replay trial is scheduled for August.

While the legal battles drag out in court, pirates are enjoying a virtual free-for-all. Necratog (who asked to be identified by his screen name only) is the first link in a chain that supplies digitized copies of Buffy the Vampire Slayer to an online chat room and a website that get as many as 1,500 downloads a week. Not to be

confused with the many “leechers” (people who only download shows), he’s a “caper” (someone who captures a TV show, digitizes it and sends it out to others).

His PC is connected to a TV cable; an inexpensive video card allows him to watch TV on his monitor. Using a free application called VirtualDub, he digitizes any show he wants and saves it to his hard drive. He then spends about five minutes editing out the commercials and an hour compressing the file until it is small enough to swap online. Then he uploads it to a friend who makes it available for others to download.

Like many other TV freaks, Necratog, 21, also downloads favorite programs and burns them onto CDs. His archives include 400 CDs that hold more than a thousand Buffy, Babylon 5, South Park and Star Trek shows. But Buffy is his favorite. “I’ll watch the same episode three or four times in a row,” he says. “I’ve watched some over 20 times altogether.”

In Napster’s heyday, pirated TV shows were a rarity on the Net. But that changed with the advent of broadband home connections, \$40 TV tuner cards that snap into your PC and cheap ways to store data. Looking for episodes of Friends? The MPAA counted more than 5,000 locations on the Internet last year where people could download episodes for free. Using custom software to track copyright violations, it also found 4,000 sites for The Simpsons and 2,000 for The Sopranos. Big Pussy is not going to like that!

The biggest threat to Hollywood may not come from the geeks but from so-called personal video recorders. Like its competitor TiVo, which has sold some 400,000 units to date, the newer Replay which has sold only 5,000, gives owners an easy, menu-driven way to search for shows to record onto its hard drive. The reason Sonicblue got sued is that the new Replay 4000, which hit the market in late November and sold out before Christmas, automatically fast-forwards shows past commercials and lets broadband users send them to friends over the Internet. (TiVos do not offer these features.) An independent site called Planet Replay even helps match up people who want to trade shows.

For now, though, Replay-to-Replay show swapping is painfully slow. Software engineer Thomas Wagner, 32, who has three Replay boxes at home, says it took him eight hours to get a half-hour episode of the now defunct show The Tick from another user, even though he has a high-speed cable modem. But he figures all that will change as the technology improves.

To goose the process along, Wagner decided to write a program called Replayer that lets people hack into their Replay 4000 and transfer files to their PC. Once the shows are in the computer, users are free to squeeze them down further, burn them onto a CD or dvd or trade them online. It took Wagner less than a week to crack the box’s coding.

“These boxes have the potential to kill prime time,” says industry analyst P.J. McNealy of GartnerG2, a market-research firm. McNealy notes the obvious: TV networks make their money from commercials and syndication rights. “We’re not the police,” counters Sonicblue CEO Steve Griffin. “We can’t tell people who it’s O.K. to send shows to and who it isn’t O.K. to send them to.”

A number of court decisions support Griffin’s argument. In the famous Sony Betamax case in 1984, the Supreme Court refused to block the sale of vcrs even though they might be used in some instances to make illegal copies of shows. And in the 1999 Rio lawsuit, Diamond Multimedia (whose corporate name, perhaps not coincidentally, happens to be Sonicblue) won the right to continue marketing the first portable MP3 music player, the Rio, even though many people used it to play pirated copies of copyrighted music. As long as Sonicblue and Morpheus can demonstrate just two legitimate uses of their products—such as the trading of TV shows that are not copyrighted or simply saving a show onto the device for personal use—they could win their lawsuits, says Stanford law professor and cyberlaw expert Lawrence Lessig. “In order to innovate, you shouldn’t have to fund a new lawsuit,” he says.

In the case of Napster, while a circuit judge found that the service did have legitimate uses, she nonetheless forced the service to block the trading of copyrighted songs on the grounds that Napster had the ability to police the activities of its users and profited by failing to do so. The owners of Morpheus, Grokster and Kazaa, on the other hand, are expected to argue that since they don’t use a Napster-like central server—even the indexing software is distributed among users—it is impossible for them to monitor the activities of the millions of people who use their programs.

And if the industry tries to go after individuals like Chaplin, it will probably be an uphill battle. According to Forrester Research, personal video recorders will be in 40 percent of all U.S. households by 2006. Until better encryption or industry-ordained alternatives give consumers legitimate ways to watch any show, anytime—without bothering to set the VCR—pirating and trading are bound to flourish. Even

then, concedes TiVo president Morgan Gunther, “nothing is unhackable.” While soap operas and sitcoms may not be getting any smarter, our ways of watching them almost certainly will.

The CHAIRMAN. Everybody knows about it. It is the uncertainty that allows that piracy to embellish and continue and enlarge, but what is the uncertainty that you are talking about?

Mr. VADASZ. Senator, the computer is a general purpose device. We deal with video cassette recorders. The video player is a very narrow function device. We have developed protection technologies today that, if it is adapted by the studios, can utilize—well, both the computing device and the content. All it needs is a rapid adaptation of some of the technologies that the cross-industry group has developed. That is all I am saying, is that we do not need to neuter the personal computer to be nothing more than a video cassette recorder. All we need to do is adapt the technologies that our industry, our cross-industry activities put on the table.

The CHAIRMAN. We are neutering piracy. We are not neutering the technology.

Mr. Eisner, what is your comment?

Mr. EISNER. I think you are getting an example of the kind of rhetoric we have been hearing for years. I have been asking consistently, OK, you say we are impeding innovation—explain to me exactly how we are impeding innovation by asking you to help us create a technology that helps us end theft. And I get exactly the kind of answer we just got. I did not understand it before; I do not understand it now.

Intel is a great company, and has had fantastic effect, positive effect, on our industry and our country. But, for some reason, and I cannot get to the bottom of the reason—therefore it must be economic, either the technology companies want to become the gatekeeper and, by creating the lock on the door, charge you for every person that wants to come in and use your lock, and we have a lot of examples of that, or they are afraid, honestly afraid that the legislation will be so draconian that they will not be able to create technology around it. I cannot fathom how an 80-cent chip to stop unauthorized pirates would impede innovation. Once a copyrighted work is on the Internet, in the clear, it is totally available to be stolen. And, we must find a solution to this problem.

We get to the Moon, we get to Mars, we create these great companies. I cannot understand how difficult this is, and I believe the difficulty of getting a letter from them was overcome in 1 day by you having this hearing. I am absolutely 100 percent convinced that if you say to these people, who are very talented, you give us a system by December 31 or we will do it for you, you will be surprised how innovative they will become, and how it will no longer hurt their product.

And by the way, Intel, again a great company, has so many quotes about the sanctity of intellectual product, I have quotes from this year—the last quote is, if you cannot beat them, sue them. That is their strategy on intellectual product, that we have an obligation to our shareholders to ensure their investment in their intellectual property is protected. That was Chuck Malloy, October 25, 2001. I have got all these quotes. They really work hard to protect their intellectual product. I would just like them to

work modestly to protect the intellectual product of another industry which needs their expertise.

The CHAIRMAN. I have got a lot more, but let me yield to Senator Burns.

Senator BURNS. I would yield to Senator Stevens.

Senator STEVENS. I do have to leave, so I would like to ask a question. Do you believe there is such a thing as Internet theft?

Mr. VADASZ. Absolutely.

Senator STEVENS. Do you believe anyone should try to prevent it?

Mr. VADASZ. Absolutely.

Senator STEVENS. Now, we have a bill that is trying to say to the copyright protection working group to get busy and get a standard, and get a mechanism for protection in the private industry, without Government intervention. Do you disagree with that?

Mr. VADASZ. Well, sir, what I would like to see is that we balance technology solutions with legal solutions.

Senator STEVENS. Can that be done without Government intervention?

Mr. VADASZ. I hope it can be. I believe that we have gone a long distance to meet most of the needs of the content industry with the technologies that we developed today, but there has to be a balance between what kind of protection do we use and not trample on the fair use expectation of the consumer, and what kind of actions do we forbid people to do, and use the rule of law to stop it. We cannot just solve all the problems with technology, because I can guarantee you, Senator, we will trample on fair use expectation of the consumers who pay for the product.

Senator STEVENS. All our bill says, if the private sector does not develop a standard to prevent Internet theft, that the people involved in Federal control, the FCC, must do it. Now, what would be a reasonable time for the private sector to develop such a standard on a balanced basis?

Mr. VADASZ. Well, the private sector, none of the elements of the private sector is a monolith. For example, already today some part of the media industry has started deploying the technologies that the cross-industry working group has developed. Some of the consumer electronics companies have started to deploy it. The companies represented by the gentlemen at the table have not started to deploy those technologies. Maybe you should ask them why.

Senator STEVENS. Well, I think what we are telling them as well as you is that we feel like we did when the V chip issue came before us. Remember, we had the V chip issue. The whole industry opposed that, and Congress said, look, either develop a V chip, or we will mandate it, and when the industry did not, we did mandate it, and guess what, it is out there, it is available to everybody.

All we are saying to you is, we want the industry to do this, and if you do not do it, we are going to turn it over to the Government experts to bring it out.

Mr. VADASZ. All I am saying, Senator, is that we have been doing it, and the technology is on the table to be used.

Senator STEVENS. There doesn't seem to be an agreement that it is effective, Mr. Vadasz.

Mr. VADASZ. The latest issue of the day is terrestrial broadcast and the analog hole. The previous issues have all been handled and

dealt with, and the technology solutions are on the table. Some members of the media industry are adopting it; others are not. As I said, in the case of the terrestrial broadcast issue, by the end of March there will be a proposal on the table.

Now, I expect that when that proposal comes, there may be a need for a narrow Government action to change the current rules, how broadcast is done in order to allow adequate protection, and I think that at that point there is a very important role that the Government can play.

Senator STEVENS. I am very glad to hear that. All we are asking is that the private sector do it. Theft is theft, and I understood what Senator Nelson said. The concept of theft is something that our society is dedicated to oppose. Why should we allow it to continue on the Internet because there is a failure to come to total agreement in the private sector?

Now, if the private sector does not come to an agreement soon, I think we will pass our bill.

Mr. EISNER. Senator, the problem we have is that many people in the technology realm have been quoted as saying that the killer app for technology is pirated content. So, we are dealing with an industry, some of whom feel that the actual availability of illegal material to the consumer like this kid sells computers.

He is buying a computer because he can get all of "Seinfeld". And, we have suspected that this is a strategy—an unspoken strategy. We have heard it spoken, and we can verify it and give you specific information on where this has been said. But, it is very hard to negotiate with an industry that thinks its short-term growth is dependent on pirated content.

In the end, I believe the really smart people in the technology world, understand that if they kill the content companies, that will impede their long-term growth. However, their quarter-to-quarter growth is definitely pushed forward by people wanting to be able to get everything for free on their television or their computer or their hand-held device.

Senator STEVENS. Mr. Chairman, I still would express my strong hope that we will find an industry agreement, and we will not have to act.

Mr. CHERNIN. Senator Stevens, if I might, I think Mr. Vadasz is guilty of some obfuscation on this issue. We are looking for varying controlled solutions to issues, and it is true we have made a lot of progress on a lot of issues. No one is denying that, but we do need protection on DTV, we do need protection on the analog hole, and for Mr. Vadasz to say that there are no viable technological solutions to solving piracy on platforms like Morpheus or peer-to-peer file-sharing, which was demonstrated by Mr. Eisner's tape, is not accurate.

Senator STEVENS. I have to leave, Mr. Chairman, but let me just say, as a consumer, I would like to sit in front of my big TV watching my videos. I do not really enjoy watching television programs on a computer set. I see that all day, and I hope that somehow or another we can preserve the whole industry that delivers to all of us the way we want to enjoy this media.

I have got a daughter that loves to pull down movies. She is going to scream at me tonight on the phone, I am sure, but I think

you missed my point, Mr. Vadasz. You are talking about the consumer. The consumer is a vast collection of people, some of which do not even use computers. A lot in my generation do not even know what they are, and so unless we protect this industry against theft, they are not going to continue to enjoy the movies, and I do believe we have to solve the theft problem, and I hope you will come to an agreement. If you do not, I am ready to go out on the floor with you, Mr. Chairman.

The CHAIRMAN. Very good. Senator Burns.

Senator BURNS. I think the Senator from Alaska has pretty much covered the ground. Looking at this whole thing from 30,000 feet, both are dependent on each other. Both of you need each other, and I guess where I am coming from in this whole debate is that, as dependent as you are on each other, why has there not been a solution up until now?

Now, I have just got a question here for Mr. Chernin. We have heard the concerns about selectable output controls. Can you tell me what that phrase means, and is injected into the public debate on this, and I get the feeling that—the other day we had a new term injected into another piece of legislation. We know what an endangered species is, we know what a threatened species is, but a new term comes along and says, sensitive species. I do not want to spend the next 20 years trying to find the definition to a term, so would you enlighten me on selectable output controls?

Mr. CHERNIN. Yes. First of all, Senator, I am hardly a technologist, but I believe selectable output control was a very early stage proposal to try to solve the problem of piracy. I know Fox and I believe all the other content companies have explicitly abandoned this proposal several years ago. It is a nonissue for us, and I think it has been largely superseded by the 5C negotiations.

Senator BURNS. OK, that is fine. Do you have any problem with consumers copying television programs on a digital VCR and then routing the copy to any other device in the home, as long as it does not get uploaded to the Internet?

Mr. CHERNIN. No. I think in effect Mr. Vadasz sort of waved the flag of fair use, and I think it is very clear that I know myself and Mr. Eisner believe that home copying is a legitimate use issue, and we do not seek to hinder home usage. It is the transmission of perfect digital copies to millions of people on the Internet illegally that we seek to halt.

Senator BURNS. In other words, therein lies the problem. We can narrow everything down to that problem, then.

Mr. CHERNIN. Yes, absolutely. We have no problems with people using our content in multiple ways inside their own home. It is the illegal use and transmission of that content to millions of other people potentially which causes us grave concern.

Senator BURNS. I will ask this of both Mr. Eisner and Mr. Chernin and Mr. Vadasz. The 5C negotiations, give me your honest assessment of where they are. Are we making progress, or have we almost come to the end of that process?

Mr. EISNER. Again—well, you go ahead.

Mr. CHERNIN. I will start. I think we have made substantial progress, Senator, and we applaud our colleagues in both industries for the progress we have made. However, I also think 7 years

is enough time to come to a solution, and we have to solve these three remaining points, and we have to solve them with some alacrity. To be direct, this is an Internet problem. It needs to be solved at Internet speed, and 7 years I believe is too long.

Mr. EISNER. And the 5C does not really address the real problem which we saw in the video. The big problem is the pirated, decrypted copy that goes up on the Internet. And that can be from a print stolen out of a projection booth when 3,000 prints go out, or it could be stolen from the lab, or it could be stolen from the FedEx car somewhere along the way, or it could be some disgruntled employee that could send it to somebody. There are many ways. We know that. And, whether it is an analog or digital copy, it could be made into a digital copy. It goes up illegally, in the clear, on the Internet.

I do not believe the most significant problem is a 5C problem. Rather, it is the problem I was referring to—which is the need for a different kind of technology. If “Black Hawk Down,” the day it comes out, is in the clear up on the Internet, it totally undermines the \$100 million—not our \$100 million, but the other company’s, Sony’s, \$100 million—investment in it.

Senator BURNS. Mr. Vadasz.

Mr. VADASZ. First of all, I would like to take exception to what Mr. Eisner said about our industry trying to build a business on illicit trafficking of content. You cannot build the kind of industry of the size that we are, or that we expect to be, by illegitimate means. There has to be a rule of law. There has to be a proper protection of all participants’ interest in order to build an industry, so I really take exception to that.

Second, there are technologies today available as a result of the 5C and 4C work to create a protected environment for the content. Protected content; Napster or Morpheus does not work with protected content, with the technology we have today. And as I said before, terrestrial broadcasts, the analog hole is an issue we are working on. That is not a 7-year-old issue that we started to work on. That is about a 10-year-old issue, and progress has been made, as I said before. The proposal will be on the table by the end of March this year to solve one of those.

Mr. CHERNIN. But if I may, Mr. Chairman, I would like to dispute this notion of protected content. It may be true that protected content cannot be used on Morpheus. But as Mr. Eisner said, that content does not get there in legitimate ways. It is stolen from theaters. Someone sits there with a digital video camera and tapes it off the screen, so our problem is not that we do not have ways of protecting content. I think there are numerous ways, satellite, cable, et cetera, that we can transmit protected content. It is that content that is obtained illegally and is allowed to pass freely on the Internet without any protection whatsoever that is the problem.

But if I may, Senator, there are no technological problems. They are all problems of the world, I am sorry to say. You can cut bread with your kitchen knife, or you can kill somebody with it. There is no way to protect every element of our society by technology. That is where the rule of law comes.

Mr. EISNER. If we do not protect content on the Internet, you will end the entertainment business. Therefore, I would say of all the things you are working on, this would be one to try to work quickly on. If you are saying that you cannot do it, it absolutely cannot be protected, like cutting bread, or whatever that was, then we will not be able to distribute our movies to consumers in the ways in which we have been doing it, and then the consumer will really be deprived.

If that is what you are saying—you are telling us it cannot be done, then fine. That is the first time I have heard that. Then I know where I am.

Mr. VADASZ. That is not what I said, sir.

Mr. EISNER. OK. Can it be done?

Mr. VADASZ. The technology is on the table for you to distribute protected content, and that protected content to be distributed in our home.

Mr. EISNER. Can we stop what that kid was doing in the video?

Mr. VADASZ. That is not protected content.

Mr. EISNER. Can you protect open content on the Internet that has been stolen, sitting up on files? Is there a technological way in the future to be able to protect that kind of content?

Mr. VADASZ. Provided that you maintain fair use rights of consumers. I doubt that some of the old content can be protected.

Mr. EISNER. I am not talking about the emotional or moral right. I just want to know if technically you could protect content that is in the ether. Can you protect it from being copied and transmitted? Forget for now about fair use, and the emotional, the moral issues—just, can it be done?

Mr. VADASZ. I am sorry, sir, there is nothing emotional about fair rights.

Mr. EISNER. Can it be done, yes or no?

Mr. VADASZ. No.

Mr. EISNER. Therefore, we have a big problem.

The CHAIRMAN. Very good.

Senator BURNS. I am going to yield my time. I started this problem. Now I will yield. I will let somebody else referee from here on in.

The CHAIRMAN. I think it was a very meaningful exchange.

Senator Allen.

Senator ALLEN. Thank you, Mr. Chairman, and I do think it was a very meaningful exchange. Listening to all the gentlemen's comments, I do not think there is any doubt that there is support for fair use. The compelling testimony of all of them, and obviously Mr. Eisner's showing of these pirated, stolen videos that are on the Internet, but the question is, whether it is fair use or whether it is a broadcast flag issue. These both make some sense. That is a roundabout way, or watermarks is what you are all talking about.

And Mr. Vadasz is talking about the voice of the consumer. It is good to be a voice of the consumer, but we must be a voice for protecting private property rights. That is the rule of law. It is so important in our country for those who invest, take risks—they may invest \$100 million in a movie. One out of whatever number of them may actually recoup that investment.

Now, I think in that discussion, Mr. Chairman, it gets to two points. One, this legislation and this hearing has been a good prod, and certain things happen, and certain things happen because of fear.

Senator Burns and I were talking about fear being a great motivating factor. Whether it is the fear of draconian Government regulations, or inept Government regulations, regardless of what they may be, that may get folks moving. I think it is very important that all parties recognize from my point of view that I would like the private sector, clearly, and the marketplace to derive and devise innovations that will have the content producers feeling comfortable putting their content over the Internet. The consumer electronics folks should want that interest.

Now, in the midst of all this discussion here, that what Mr. Eisner showed was not obtained by legitimate means, because whether it is Disney, whether it is Fox, whether it was Warner Brothers, or Sony, or whomever, they did not put that out over the Internet, and somebody pirated it. It was somebody getting it off of a projector in the movie theater, and so we have two questions here. One is prospectively, what flags or watermarks can be put on so it cannot be distributed? I am not talking about fair use. I am talking about unfair, illegal utilization that can be solved, right? Right.

Now, putting the cockroaches into a bottle in a dark basement is a hard thing to do, and I think the testimony, Mr. Chairman, from Mr. Vadasz was to try to get all those, the ones who are pirating these, from filming it at a movie theater, or however else they are purloining this property. There is not a solution for that, is that what you are saying?

Mr. VADASZ. That is what I am saying, sir. You can take a home movie and put it on the Internet. Once that home movie is on the Internet, it is out there.

Senator ALLEN. And so therefore it would be available to anyone, obviously.

Mr. VADASZ. I think that is correct, sir.

Mr. EISNER. You then have another issue, which is privacy. I would think that technology should try to work on a way for the home movies to be able to be sent from a mother to a son and not be kidnapped by all of her son's school mates. I think that is also a problem. So, I believe this is an escalating problem on the Internet. I do not accept that you cannot protect your content on the Internet—I just do not accept it. But, I am Panglossian, so maybe I am wrong.

Senator ALLEN. If this is a situation, and you are saying that the solution is suing those who are obviously not paying what they should be paying to watch it, that just as a practical matter is impossible. You all cannot be tracking scanning, cruising the Internet, tracking all the Benjamins and everyone that Benjamin linked into.

Mr. EISNER. Maybe the miscommunication here is, we do not expect, because we know that is impractical, 100 percent protection. We do not have it now. We probably only have 90 percent protection now. We can work in a world with 90 percent protection. In

some countries, it is 60 percent. In some, it is 95. In some, it is zero.

We can live with that world, and if the reason that the answer is no is that we are asking for 100 percent protection, and no genius from MIT can hack it, OK. But I am really asking, can we get to 90-percent protection, so the general population will not be able to download illegal material from the Internet?

If you are basing it on 100 percent protection, and that is why you are saying no, then I just want to back off a little bit, because we are not asking for 100 percent.

Senator ALLEN. Mr. Vadasz.

Mr. VADASZ. I think we keep mixing the past and the future. I have tried to state that through the working of the cross-industry group, content can be protected as we go forward.

Not all the problems of the past can be solved. There are 1/2 billion PC's out there today. There are, I am told, amount of content on the net, there are 150-plus million more PC's are sold every year. The number of users on the Internet is growing at a very fast rate. Not all of the past issues can be handled.

Mr. EISNER. I am not worried about the past.

Senator ALLEN. There is two different things, Mr. Chairman, we are trying to get at. Most of this I look at as being in the future, as opposed to what is existing.

Mr. VADASZ. And what I am saying is that what the cross-industry working group has done provides protection, the kind of protection that Mr. Eisner would like to have, with the exception of the work that I described that is still in progress.

Senator ALLEN. I do not think Mr. Eisner is yet satisfied with that, but hopefully he will be.

Mr. VADASZ. If the answer is: "My way or the highway," gentlemen, I do not know what to do about that.

Mr. CHERNIN. I do not think it is fair to say it is my way or the highway. I think clearly both of us would say, as unhappy as we are with what has happened in the past, we would be thrilled if we could protect the future.

Second, I do think it is important to say that what we are talking about, though, is the illegal sharing of unencrypted files, regardless of how they get there. I do agree that it is possible for us to encrypt and safely deliver certain kinds of files. We are not concerned about that, and in fact we do applaud the progress that has been made, but there still are illegal movie, television, music files on the Internet that get traded, and this can be solved in the future.

This is an industry that I know both of us have the highest respect for. The people are geniuses with what they can achieve, and I just find it hard to believe that with prodding from this organization, and with the full intelligence and resources and creativity that they have, that we cannot solve the illegal transmission of encrypted files on the Internet going forward.

Mr. EISNER. I was in New York in the Village last weekend, and bought on the street several video cassettes of films that opened that Friday of the Disney Company and other companies. Now, the quality was pretty pathetic, but they could be digitized and put up on the Internet. I do not know where they came from. I do not know whether it was a screening in Indonesia that came back. Who

knows? But every single film and every single television program is pirated. The problem that is a killer is when it becomes digitized and put up in the ether.

The CHAIRMAN. Very good. Senator Nelson?

Senator NELSON. Thank you, Mr. Chairman. This hearing is taking a turn that I didn't expect, because I thought this was just going to be intellectual property rights versus equipment manufacturers that didn't want to do what needed to be done about that.

Now, if the question is, can you protect intellectual property rights once they're in the ether, as Mr. Eisner says, is the technology there? I just don't believe that the technology's not there or that the technology can't be developed, Mr. Vadasz.

Mr. VADASZ. Let me just say as clearly as I can, the technology is there today. If you use it, you can protect your intellectual property rights in the ether, over cable, over satellite, over the Internet, and in your home, going from one device to another device to another device. That technology is there.

Mr. EISNER. But the hardware manufacturers have to put into—tell me if I'm wrong—have to put into a computer a chip to make that technology workable. And right now, we have not gotten the agreement from the hardware makers—computer makers, etc.—to spend the 80 cents a chip, or whatever it is, to make it prevent piracy.

Yes, I think the answer is, it is available or could be available. There's a long way between that and putting it in the device.

Senator NELSON. Is that what you referred to as the watermark?

Mr. EISNER. That is one way of doing it. As a matter of fact, there are computer companies, that their ads, full-page ads, billboards up and down San Francisco and L.A., that say—what do they say?—"rip, mix, burn" to kids to buy the computer. They are selling the computer with the encouragement of the advertising that they can rip, mix, and burn. In other words, they can create a theft and distribute it to all their friends if they buy this particular computer. Definitely, content moves distribution and hardware.

Senator NELSON. Mr. Vadasz?

Mr. VADASZ. Sir, I would just like to clarify the discussion here. My statement, what I said, referred to no chip—no new chip in the personal computer. My statement referred to the work of the committee that has been done in the 5C and the 4C with the adaption by the consumer equipment companies for the specification. That is absolutely capable today. It has nothing to do with the micro-processor design.

Mr. CHERNIN. But I think that—let's be very clear what we're talking about here. Again, we have made substantial progress, and no one is denying that. And we do have the ability to protect numerous legitimate downloaded content on satellite, on digital television, on digital cable, et cetera.

What we complained about is three very specific issues—digital broadcast television, the analog hole, and the use of un-encrypted illegal files and sharing them back and forth. And for Mr. Vadasz to say that it is impossible to stop that—it's the equivalent of saying, yes, we can stop the people who don't steal from stealing. But we have to stop the people who are stealing. In addition, we have

to stop the people who are sharing illegal un-encrypted files, who are stealing, and that is not something that they have attempted to solve.

There are, indeed, legitimate uses and legitimate solutions that have been created. It is these three areas that we're focused on.

Senator NELSON. Well, Mr. Chairman, I want to ask a technical question. But before I do, this is the kind of situation. These folks had better work it out, or we're going to work it out for them.

The CHAIRMAN. Yes, sir. No question.

Senator NELSON. Let me ask you a more technical question. Watermarks, as I understand them, are fairly permanent. And yet intellectual property, the Constitution says, has a limited lifetime. So if, in fact, there's a present case in front of the Supreme Court, if the Supreme Court accepts that premise, what can we do to make sure that while we're developing the watermarks, or whatever the technology is that's developed, that we're also protecting the consumers and the collectors of the future? Would, Mr. Chernin and Mr. Eisner address that?

Mr. CHERNIN. I actually think that's quite simple, Senator, which is a watermark, or a broadcast flag are all fancy technology terms which I certainly don't understand, but they are—quite simply, they are labels and instructions. So a piece of content can be labeled “watermark” to say, “Protect this as long as its copyright is in effect.” A piece of content can contain instructions that say, “Stop it from doing this for the period of time that the copyright is in effect,” and stop protecting it the moment that copyright expires.

So, yes, there are permanent—but all it is a label. And, in fact, it's a very efficacious way of labeling this is when the copyright expires, among other things, so I don't think that that's a potential issue at all.

Senator NELSON. Thank you, Mr. Chairman.

The CHAIRMAN. Thank you. Senator Boxer?

Senator BOXER. Thanks, Mr. Chairman. Believe me, no one on this panel wants this issue to go away more than I do.

(Laughter.)

Senator BOXER. I mean, this is one of those moments where you say, “Oh, God.” We've got Silicon Valley. We've got entertainment. Got it all.

So the way I've been trying to approach it is right and wrong, which is always a good thing to do on most issues, if not all. So I see it this way, and I think you all three agree with this. There's no question that it is wrong to steal intellectual property. Everyone agrees. You all said that. OK. So that's right and wrong. And, in fact, we know that property is protected in the Constitution. So set aside all the interests of the groups. I do believe we would all, I think, agree on that.

So then you come to the issue of what's right and wrong for each industry, 'cause, you know, we're not—we know that the bottom line is the bottom line for all of you, and you wouldn't deny that. So what's in, you know, the short-term economic interests of each of you, and what's in the long-term? And I think that was what—Mr. Eisner said that, and I just want to pick up on that, 'cause Mr.—Mr. Vadasz, is that—am I saying it right?

Mr. VADASZ. That's close enough.

Senator BOXER. Good enough? OK. You know, I truly do believe, in the long-term—and I know it's hard sometimes for a business to think long-term. I think the really good ones do. If there is a situation where there's no longer capital flowing into creativity here to create these incredible exports, OK, in the end, no one's going to want to really look at this content. This kid's excited—this kid, who doesn't think he's a thief. He's really excited, because he's gotten some fabulous products for free.

But if there's nothing out there but junk, in the long-term—my point is, I think everyone suffers, including the group you talk about, the consumers. And I do serve on the Consumer Protection Subcommittee here. So I would hope, therefore, that my high-tech people are as interested in solving this problem as my entertainment people, because in the long run, it's in your self interest.

What I would like to get to is, how are these meetings going? I mean, I was hopeful—I learned about this issue quite a while ago, and I was extremely hopeful that things would be resolved by now. I'm a little concerned, frankly, given some of the comments here, which, by the way, I think are very helpful to you, Mr. Chairman, because you've got the bill that basically says, "Please figure it out. Please figure it out. And if not, we're going to have to figure it out." So I get the sense that the meetings haven't been as productive as I thought and hoped.

Is there any truth to Mr. Eisner's point that it's more than a coincidence that these letters arrived today from the high-tech people?

Mr. VADASZ. Frankly, I think it is a coincidence. However, let me just—

Senator BOXER. But that's good.

Mr. VADASZ.—say it's because—

Senator BOXER. But this was really what was coming, and if a breakthrough was coming without this hearing, that's good.

Mr. VADASZ. I hope, Senator, that you include us, Intel, as one of the companies who looks at the long-term. And for everything that we have done, we—

Senator BOXER. Yes.

Mr. VADASZ.—have demonstrated that. That's why we always believe that there has to be a rule of law governing the whole structure here, so that we don't try to build business on the illicit use of anybody's intellectual property. And that's why we are an active participant in that.

Senator BOXER. I know. I'm very glad. But you seemed to be, at one point in your testimony, extremely disturbed at the thought that this Committee might get involved if nothing happens. You know, it confuses me, because you sure want us to get involved if there's a problem of counterfeiting your chips, right?

Mr. VADASZ. Absolutely.

Senator BOXER. OK. I mean, I think the Chairman made this point in the beginning. I mean, I would just roll up my sleeves, and I have done so, to protect my high-tech people, because it's a nightmare. It's happening to you in many cases. So I think we need to not have a double standard here. We need to work this out. In many ways, it is our economy. You know? In many ways, are we

going to continue to be the economic leader of the world? So I know that businesses do get very—you know, do have disagreements, and I understand it. But in the end, I think it's in all of our interests to protect this property and do it in the right way.

So let me just close, because my time is up, but ask each of you, you know, your perspective on how the negotiations are going—have gone so far. Now, Mr. Vadasz says that, in fact, you do have at your disposal, is what I understand—he says you have at your disposal the way to fix this problem. I believe he said that. Would you comment on whether you—that's your feeling? And how do you think these negotiations have gone?

Mr. EISNER. Well, first of all, I don't want to single out Intel, because Intel is one of the most respected companies, if not the most respected company, in the Silicon Valley, so they are not—you just happen to have a spokesman—

Senator BOXER. I know. They're here, so I—

Mr. EISNER.—here. But I can tell you, that until the Senator said he was going to consider legislation, you couldn't even have a conversation about the big issue. I can tell you—and I tried to have a conversation personally; this is not hearsay—I can tell you, until the hearing was set, that I could not get people from the high-tech world to discuss this issue. I can tell you, before this hearing was set, I had never had a conversation with the largest company in the world about this particular issue. I can tell you, until yesterday, we were told that if you had this hearing, that the high-tech industry would then get more entrenched, rather than less entrenched.

And in comes a letter, by coincidence, yesterday, the day before the hearing. I think that coincidence is highly unlikely. So the conversations are just now beginning, because I think everybody recognizes that the legislators have a right to regulate street lights and interstate commerce and a lot of things that they've regulated for two or three hundred years. This is not unusual.

And, frankly, this is the court of last resort for us. This is the place that we learned in civics you go to to get action. And that's why we're here. And we are hopeful that in the next 60 days, if our associates in California believe this is real, they'll come in, and we'll get this done. But they have to believe it's real.

Senator BOXER. OK. Mr. Chernin, when you—would you address the fact that you do have these technologies at your disposal now? Because that was stated, and I'm—

Mr. CHERNIN. Yes, I think—again, let me be as clear as I possibly can. We think substantial progress has been made in numerous technologies, which is what I assume Mr. Vadasz is referring to. We are safely encrypting content for satellite and digital cable and DVHS, et cetera. And we applaud and appreciate the cooperation in those areas.

I think it does come down to this—there are three areas in which we are frustrated and stymied—protection of digital broadcast signals, the analog hole, and the protection of un-encrypted illegal files that are passing back and forth on the Internet. So I do think we want to make it very clear, we're not saying everything's wrong, and these guys are horrible guys. In fact, we are saying we've made some progress in some areas. But we have reached what feels pret-

ty close to a brick wall on these final issues. And I do share Mr. Eisner's suspicion about the coincidence of the letter arriving yesterday. And I applaud this Committee for at least goading all of us into what hopefully is the final action to get this done.

Mr. VADASZ. May I?

Senator BOXER. Please.

Mr. VADASZ. First of all, this is not just an activity that started when the threat of legislative mandate on PC designs have come about. We have been at it for 6 years—over 6 years. As you know, our industry does not have an excess of good engineers. We have spent our resources for 6 years working on this problem. It's not ignoring it. It's not "not listening." It's working, and it's hard work.

And as far as the industry listening to the studio's better, I'd just like to remind Mr. Eisner that our CEO, Mr. Barrett, tried to have a session with you last October, which you canceled. So that's unfortunate, but we go on.

What I would like to suggest is that we also recognize that this is a very talented industry. I'm not talking about ours. I'm talking about the media industry. And then the issue of the VCR came, and they dealt with it. And they dealt with every other technology generation, although somewhat reluctantly at first, but they dealt with it. And they did brilliantly.

Maybe it's time that we tell them—there's a lot of technology out there, time that we deal with the new digital world. But when we do that, I think you have to also see how they deal with it that the consumer also gets a fair shake.

Mr. CHERNIN. Senator, if I may, I think this issue of bringing up the Betamax case from more than 20 years ago is a little bit of a shibboleth, and that, you know, there's a huge difference between analog, in-home taping, which, as both of us have said repeatedly, is something we support and are willing to support in both analog and digital form. There's a huge difference between that and the ability to make one million, ten million, a hundred million perfect digital copies and press a send button and send them. And to bring up the Betamax case, which, indeed, executives long before either of our tenure opposed 20-something years ago, I do think is an attempt to take our eye off what's the real issue.

Mr. EISNER. And the other attempt, and I'll just say no more—I'm accused of being a meddler and being into everything. And I assure you, if somebody wants to see me, they can see me. My only recollection is being on a bike trip with Andy Grove, who never mentioned it to me over 5 days. But if somebody at Intel wanted to see me, they certainly know my telephone number.

I want to point out one company up there, Cisco, who has done an enormous introspective look at this problem and has decided that it is in the best interest of Cisco to be cooperative in this whole area. Whereas, four or 5 years ago, they questioned whether they should even participate. So there are companies that are definitely addressing this issue.

The CHAIRMAN. We have been a little liberal up here, but we have got Mr. Cisco, and we have got to move. Senator Breaux?

**STATEMENT OF HON. JOHN B. BREAUX,
U.S. SENATOR FROM LOUISIANA**

Senator BREAUX. Thank you, Mr. Chairman. As the saying goes, everything that needs to be said has probably been said, but not everybody has said it.

(Laughter.)

Senator BREAUX. So let me see if I can say it also. Let me ask Mr. Vadasz. Is there equipment that is now available that could be put into personal computers to prevent Benjamin from doing what Benjamin did so well?

Mr. VADASZ. That could be put in the personal computer?

Senator BREAUX. Yeah, somehow preventing Benjamin from copying the things he did.

Mr. VADASZ. The protection has to start at the source. So if the source material is protected, then you can protect it in the chain. And what I'm saying is that that technology is available today.

Senator BREAUX. OK. If Congress said that that technology should be made available by December the 31st of this year, could the industry comply with that?

Mr. VADASZ. I believe they could.

Senator BREAUX. I was impressed with the letter that you sent to Eisner and all of his colleagues—not you, personally, but from all of the industry. And I'll bet some people spent a lot of time writing this letter, because it was very carefully worded. And that read, "It's critically important to development anti-piracy tools. We're working diligently to develop systems. The meetings have been highly productive. Optimally effective solutions are in reach. Informed consensus on key technologies. Working diligently. We're committed. Working with you. Consensus. Cooperation." I mean, all these words—I mean, the bottom line is that we're going to work with you. And does the letter say anything more than that?

Mr. VADASZ. Well, just a confirmation that we will work—

Senator BREAUX. It's a well-written letter saying, we're going to continue to work with you.

Mr. VADASZ. That's right.

Senator BREAUX. The question we have before us how long is it going to take?

Mr. VADASZ. Well, the real problem of the day, as I mentioned to you before, is the over-the-air transmission, and the analog hole. And I also said that proposals will come to the cable this year, this quarter, on the over-the-air broadcast. And there is more work to do on the analog hole. And I do not have a timescale. I just don't know.

Senator BREAUX. Well, the interesting thing, I think, is that there is, Mr. Chairman, equipment available that can, I think, get this done. It's a question of whether we're going to mandate it or whether the industries will get together and do it themselves. I'd prefer the latter, but it may be necessary for this Committee to take action, which I would support, if need be. Thank you very much.

The CHAIRMAN. Senator Smith?

Senator SMITH. Thank you, Mr. Chairman. Mr. Vadasz, I want to give you a chance to correct what I think you said. And you

quoted Jack Valenti as saying that—in the former period, that you're industry was the Boston Strangler.

Mr. VADASZ. No, Senator. I said the VCR industry.

Senator SMITH. The VCR industry. Were you implying at all that they're making a lot of money, so a certain amount of theft is OK?

Mr. VADASZ. Absolutely not, Senator. What I'm implying is that this is a very talented industry. And when they had to deal with the changing technology, they dealt with it in a very successful commercial manner.

Senator SMITH. I am wondering what this chip costs that has been spoken of here. What does it cost? What does it mean to the consumer, in terms of the cost? And what does it do to the efficiency of the computer—its speed and the consumer friendliness—if this were required to be included?

Mr. VADASZ. I don't think it's really a cost issue. I mean, whether it's five cents or five dollars, that's really not the issue. The issue is abdicating the design decision of our microprocessor and potentially creating technology cul-de-sac for our product. So I would like to see that the solutions that come do not have the chance of limiting technology's ability to move forward.

It's not that I want to see piracy happen. It's not that I want to see an unsafe environment. But I do not want to see our industry simply abdicate some key design decisions to the studios.

Senator SMITH. Some in the entertainment industry would charge that your industry doesn't want to fix this, because you make money selling equipment that boots up their material and sells it for free. Is that the case?

Mr. VADASZ. It seems like that's "guilt by association." As I said before, I don't think that we can build a significant big business on illicit use of intellectual property. So this problem needs to be solved. There is no question in my mind.

Now, there is no question in my mind, either, that rich content—use of rich content in very different ways is beneficial to our industry, is beneficial to the networking industry, is beneficial to the telecommunications industry. And I think, at the end of the day, it's beneficial to the media industry, as well.

Senator SMITH. I guess my questions now turn to the entertainment industry. If you're pointing the finger at the IT industry, saying they need to fix it; and they're saying there's some watermark or some technology available to you, that if you use it, then this boy couldn't steal your product. What is that technology?

Mr. EISNER. There has to be—at the end of the game, there has to be something at the hardware end. So if he doesn't want to put in that chip at the last—at the end of the game, for a reason that I just don't understand, whether it's five cents or five dollars, it's just not going to work. So you have to—it's the whole chain. You put it in—and I'm not a technician either; you probably can do better than I can on this—but you put it in in the creation of the product. You put it in in all the legal transportation of the product, and you put it in in the end-usage of the product, as long as there's some sort of flag or some watermark on the illegal use, so when it comes to the computer, it won't play.

Now, if that's a cul-de-sac, and we're asking for something that is—it's going to make the computer blow up—they've taken—they

used to say it would slow down. They're off slowing it down. There was always a reason it couldn't be done. The reason now is a cul-de-sac. I don't know why they just don't do it and get over with it, because they admit that it is this high-quality video—movies, television, and other things, sports and so forth—that will drive broadband and drive their business. So let's get it done and move on and not fight about it.

We don't want to make any money from it. We'll pay for what we have to pay to encrypt our product. We're not asking anybody else to pay for it. We just don't want to pay a continuing fee for that.

Senator SMITH. So at the end of the day, there's nothing you can really do to fix this from getting onto digital and having it multiplied perfectly every time.

Mr. EISNER. We don't make the television sets or the computers where this is distributed. We can do it up to that point.

Senator SMITH. Up to that point. Is that right?

Mr. EISNER. Yes.

Senator SMITH. The cul-de-sac that we're talking about—my concern for the IT industry is that when we establish it, that just begs the stealers to get around it.

Mr. EISNER. Well, we're asking for renewable, changeable, expendable, all those words that mean it has to be developed and legislated to be able to adapt to new technology. Yes, if you make one system, and you tell them they have to do one thing, that will be antiquated probably the day it opens. So it has to be—like everything else—renewable. And it doesn't have to be a hundred percent. I mean, if some people get into it for awhile, then they get into it. DVD has been hacked. Normal people just say, "I'll pay the money."

Senator SMITH. Thank you. Mr. Chairman, I just want to say I thought that the video of this young boy—and I don't want to moralize here, but I thought it was a tragic thing that we saw. I mean, we're all worried about the Ten Commandments being hung in a courthouse. Heavens, we took them down at home a long time ago, apparently.

The CHAIRMAN. Right.

Senator SMITH. Because the commandment "Thou shalt not steal" is clearly not taught in somebody's home, and apparently a whole lot of homes. And that's a real tragedy for our country.

The CHAIRMAN. Senator Snowe? And they don't feel like they're stealing. They just see it out there, and they just take it. That's the truth. Go ahead.

**STATEMENT OF HON. OLYMPIA J. SNOWE,
U.S. SENATOR FROM MAINE**

Senator SNOWE. Thank you, Mr. Chairman. And I want to thank the panel here this morning. I obviously have heard the preference that—from the Committee, I think, essentially that if we could work this out through the private-sector industry, that certainly would be most desirable.

I think that—one of the areas I want to probe is to why the industry has reached an impasse. Has it reached an impasse? Is it unresolvable at this point with the association, or is it still pos-

sible? And what's the timeframe here? At what point would it be, you know, an absolute necessity that Congress take action to mandate a solution, if that becomes the only option remaining?

Mr. CHERNIN. Well, I'll speak, for at least ourselves. We think we have reached an impasse, but we certainly do not think it's unresolvable. We're certainly willing to do it, but I think that, as I said earlier, 7 years is too long a timetable. If the timetable is 12 months or 18 months or 2 years, I'm not the one to say.

As I said, I applaud these hearings, because I think just that letter showing up is an indication of some movement. These issues are resolvable. But for some reason we haven't been able to get there yet. And we think that the threat of these hearings has been a big help. And if this isn't enough and we can't resolve it, then I think we are going to come and ask for legislative help to solve it.

Senator SNOWE. Yes, Mr. Vadasz?

Mr. VADASZ. It's very interesting, because I thought that we didn't reach an impasse. I thought that we were working diligently on the issues that you brought up. I thought the issue of her terrestrial broadcast and the analog hole came up as an issue that you wanted to be solved in a relatively recent time, like a year ago or so. And we have been working on it. But if you think that we have reached an impasse, I'm really sorry to hear that. I thought that our—jointly our people have been working diligently on this issue—your people and ours.

Mr. CHERNIN. I guess maybe what makes us more pained, Mr. Vadasz, is when you see several hundred thousand of our movies and our television shows downloaded every day. Perhaps we're a little bit more sensitive, and perhaps we're even a little hypersensitive about this. But given the millions of dollars and thousands of jobs that contribute to the economy, this is an extraordinarily important issue for those of us in the content business.

Mr. EISNER. I'm not super sensitive about this. I know when I'm being finessed. You know, finesse is finesse. And until this process that we're going through now started, you couldn't discuss this. At least at my level, you couldn't discuss this. And when you discussed it with your friends, who I have in high places in Silicon Valley, you would get a lot of negative body-language. You know when you're making a deal and it's not going to happen and you're being treated very respectfully.

I would say there was a total impasse, and I think—good-natured impasse, by the way—friendly impasse, not hostile, and a lot of good work being done around the impasse, a lot of other things being done between us and Intel and Microsoft and Cisco and all the rest. But on this particular issue of that kid downloading our movies, putting our industry in real jeopardy, I would say there's been an impasse.

Senator SNOWE. So are the negotiations still ongoing? The discussions ongoing? Or is anything happening?

Mr. EISNER. We are assuming that Congress is going to come up with some period of time that we have to do something. And we are going to subtract every day starting today from that period of time, because now we have a letter from a high-tech company say-

ing they're going to be cooperative, they're going to sit down. So we're going to call them tomorrow morning and say, "OK, when do we meet?" I'm returning the call from last August that I don't remember getting.

Mr. VADASZ. October.

Mr. EISNER. Excuse me, October—that I don't remember getting. I'm pretty good at returning my calls, but I'll return it now: Let's meet.

Senator SNOWE. Well, Mr. Vadasz, you had mentioned in your testimony on—that your concern is it would infringe on consumer rights and it would do irreparable economic damage. On the other hand, you also can recognize—the concerns of the entertainment industry. Whether you regard it as, you know, real or not, or it should be done by government or not, the fact of the matter is it remains a real concern. And our economic system operates on incentives and disincentives. And if the industry refuses to make the investments to take the risk, obviously that affects not only the industry, but it affects the American economy, as well.

So I think you can understand why there would be a true interest on our part to try to resolve this issue. We would prefer it to be done within the industry. But clearly, if all else fails, then we're not going to have any choice in the matter, because they do have a legitimate concern. I mean, would you take those—would you make those investments, would you take those risks, if you were in their shoes?

Mr. VADASZ. Senator, first of all, I do agree with you that this issue needs to be resolved, and that's exactly why we have committed the kind of resources we have in all of our other industry partners in the past. So there is no disagreement on solving legitimate issues.

But when it comes to taking risks with investment, nobody can manage the kind of risks we take with the investment on our future products.

Mr. EISNER. Can I ask one question? Is it your customers? Because they sell their chips to the computer manufacturers. Is it that your customers don't want this chip? Because you would do the chip if your customers wanted it. There's no reason for you not to do the chip. So is it COMPAQ or Dell that says, "You know what? Don't send me that chip. I don't want that chip"?

Mr. VADASZ. That's not the issue. The issue is how does the industry moves forward. What are the dynamics of the industry? Who makes the design decisions?

Mr. EISNER. If Michael Dell said, "I want the chip," would you give them the chip?

Mr. VADASZ. If Michael Dell wants to put that capability into his machine, he's perfectly capable of doing that.

Mr. EISNER. I think that may be the issue. I don't know. I've been trying to figure out for 2 years why we can't get this done.

Senator SNOWE. Well, maybe as a result of this hearing today, maybe we have now sort of figured out what the issues are, and maybe we can get it resolved, Mr. Chairman. Thank you.

The CHAIRMAN. "On behalf of the Committee, and this letter here from the Business Software Alliance, I read, "The software and hardware industries are committed at the highest level to a solu-

tion that protects content," signed by Michael Dell of Dell, Mr. Capellis of COMPAQ, Mr. Gerstner of IBM, Mr. Bennett of Intuit, Balmar of Microsoft, Galvin of Motorola, Chen of Sybase, Weinback of Unisys, and none other than Mr. Craig Barrett, the chief executive officer of Intel.

And now we know the time, because I can go back to the taken record, and Mr. Vadasz has testified that the technology is on the table and ready to be used. I remember asking—and I have toyed with my friend, Mr. Valenti, for two or 3 years over this same problem—and the testimony has shown we have been at it for 7 years of listening and waiting and listening and waiting. But now we know that the technology is on the table and ready to be used.

I asked—I said our bill has got 18 months. And the answer from one of the real good experts says you can do it in 18 days. And Mr. Vadasz says you can do it now. So that question is answered.

That won't be a technological cul de sac—we don't have a genius for that in Congress.

(Laughter.)

The CHAIRMAN. But we can create an economic cul de sac for the standard technology. And that's what we're about to do if you don't.

And otherwise, Mr. Vadasz, in thanking you and thanking the entire panel, it's been the most outstanding panel we've had in a long time. You say looking at Intel for the long-term. That's all I got to know about the Dublin, Ireland, plant. That's a billion-dollar plant, and I tried my best to get it from Andy Grove to go into South Carolina.

(Laughter.)

The CHAIRMAN. And I'm still trying. And incidentally, we've got the technology ready for it, because the vice president of Intel in Dublin took me down the road, and he said, "Senator, I've got a surprise for you." And he showed me a technology training institute very, very similar to the one I had broken ground for myself in Columbus, South Carolina, 40 years ago. He said, "I sent two teams on two occasions to Midland Tech in Columbia, South Carolina, and we duplicated your facility," and that's how they got it up and got it operating and in the black.

And this has been a wonderful success. So I thank you, Mr. Vadasz. I thank you, Mr. Chernin, and thank you, Mr. Eisner. We've got a very important panel of five others here this morning. And we want to excuse you folks and get them forward here.

Mr. Jack Valenti, the president and CEO of the Motion Picture Association of America—let's do it as quietly as we can—Mr. James E. Meyer, the special advisor to the Chairman and former Senior Vice president and Chief Operating Officer of Thomson, Mr. Andreas Bechtolsheim, the General Manager and Vice President of Cisco, and Robert Perry, the Vice President, Marketing, of Mitsubishi.

Mr. Valenti, while they're moving out, I'm reminded of the time after the hurricane, Camille, hit the Gulf and Senator Houston took Senator Stennis down to President Nixon in the Oval Office to have a disaster declared. And they sat in the Oval Office, and President Nixon came in, and the president had already been briefed, obviously, and he said, "This has been a very terrible thing

down there, and I'm ready"—he was ready to declare it an emergency, a Federal emergency.

But Senator Stennis interrupted and said, "Now, Mr. President, you don't understand." He said, "It just took all the boats, the docks and washed them away." President Nixon said, "Yes, but, Senator, I know, and I'm ready." "Oh, no," Senator Stennis interrupted again. He says, "It washed ashore and took all the houses." And the president started one more time. He said, "I understand there's been quite a loss down there, and I'm ready to—" "But you don't know," Senator Stennis said.

(Laughter.)

The CHAIRMAN. "And it washed away all the palms." Finally, Senator Eastland reached out and touched Senator Stennis on the knee. He said, "John. John, hush. Let the boy talk."

(Laughter.)

The CHAIRMAN. We have let the boys talk already this morning, and I apologize to this important panel. But the truth sort of comes out, and we're better informed. That's one of the best panels we've had. But without further ado, obviously, Mr. Valenti, Mr. Meyer, Mr. Bechtolsheim, Mr. Perry, we welcome you. Your statements in their entirety are included in the record, and we can highlight them or deliver them as you wish. I can start with Mr. Bechtolsheim.

[The prepared statements of Mr. Bechtolsheim, Mr. Perry and Mr. Meyer follow:]

PREPARED STATEMENT OF ANDY BECHTOLSCHEIM, VICE PRESIDENT/GENERAL
MANAGER, GIGABIT SYSTEMS BUSINESS UNIT, CISCO SYSTEMS, INC.

Good morning and thank you, Mr. Chairman, for convening these hearings on protecting digital content and promoting broadband deployment. At Cisco, we believe that growing the Internet from the current narrowband generation of email and web browsing to one that is capable of delivering movies and multimedia applications is crucial to the economic future of our country. Although many forces will drive broadband deployment, one key factor will be the availability of audiovisual content on the Internet. The more and better content that is available on the Internet, the more consumers will choose broadband connections to access that content and also gain access to the benefits of broadband in other areas, such as education, medicine, and government services.

But why should government care about the deployment of broadband Internet networks? The answer is simple, yet compelling. Broadband enables new applications and services that will continue the radical transformation of our economy that the Internet has begun. It is not just about watching movies online or playing interactive games, however interesting those activities may be. It is about improving the productivity of our workforce and increasing long term economic growth. If we look at the recent past, we can see the enormous impact of first generation Internet services on the economy. In industries where information technology and Internet services were integrated into their operations, productivity increased four times faster than in industries that did not integrate information technology. Higher productivity growth creates more jobs, strengthens existing industries, and provides higher wages for workers.

But as I said before, movies will help draw consumers to broadband services. But first, the movies must be drawn to the Internet. The motion picture industry is certainly interested in using the Internet as a new distribution platform for its movies. But the movie industry is not interested in doing so without proper protection against unauthorized copying of copyrighted material. We would not expect anyone to put their money in a bank that does not have a safe and secure vault to store the money. Likewise, it is not reasonable to expect movie studios to release content on the Internet without strong copy protection systems in place. The technology industry, including Cisco, has worked hard to create copy protection technology and

continues to work with the content industry to improve and implement such technologies.

Copy protection technology, however, must be about more than just preventing authorized copying of content. The technology must support multiple encoding technologies, multiple platforms, and multiple categories of devices. Most importantly, the technology must be consumer friendly. If consumers find the copy protection technology to be confusing, difficult and burdensome, they will not move to the new services. For consumers to embrace broadband distribution of movies, copy protection must be transparent to the user, available for multiple platforms and formats, and support multiple usage models such as purchase, rental, subscription and broadcast.

The best example of this type of security is already in widespread use on the Internet today. Millions of consumers make secure transactions on the Internet using the Secure Socket Layer encryption technology, commonly referred to as SSL. The open and interoperable SSL technology allows for the transmission of sensitive data, such as credit card numbers, securely across the Internet in a manner that is virtually transparent to the user. In fact, most Internet users do not even know that they are using SSL protection in making these transactions. The creation of SSL was critical to developing commerce on the Internet largely because it is an open and interoperable system that supports almost all technologies and is easy for consumers to use.

It became clear that a similar system for protecting content on the Internet would be the best and most consumer friendly way to bring high value content to the Internet. So Cisco took up this task and has created a system called Open Conditional Content Access Management, or OCCAM. OCCAM is an end-to-end protocol for protecting content from unauthorized copying, distribution and playback and can be used to protect content during transmission and storage in any public, private or home network.

OCCAM utilizes 128-bit AES or Advanced Encryption Standard for encrypting content. This is one of the best encryption technologies known today which was created by industry working with the National Institute of Standards at the Department of Commerce. In addition, OCCAM uses PKE or Public Key Encryption which allows for the secure transmission of a content key from a content provider to the consumer playback device. Both of these technologies have been extensively researched, are in wide use on the Internet today, and are considered open standards.

I would like to state for the record that government, in particular the Department of Commerce has already greatly contributed to enabling content protection technology, by defining the standards for security technologies that are used as the basis for e-commerce.

In order to maintain the open nature of this system, Cisco has created a non-profit licensing organization to administer the OCCAM technology. The licensing organization can also be used to enforce the robust implementation of the copy protection technology by manufacturers of compliant equipment. Cisco believes that the open licensing of open and interoperable technology will be the best means of creating strong and consumer friendly content protection to encourage the distribution of content on the Internet.

The availability of open systems of content protection like OCCAM, which can be enforced through licensing regimes leads to the conclusion that legislation prescribing specific content protection technology, is not necessary. In fact, it would be quite undesirable. If the decision on selecting and implementing technologies were left to government bureaucrats, we run the risk of selecting inferior, market-unfriendly, and limited technologies. We would also limit future innovation in security technology by freezing in place current technology and only making changes at the speed of government, not the speed of the Internet.

Looking at history only confirms this conclusion. For example, the Audio Home Recording Act attempted to legislatively protect digital audio content through a government-mandated copy control technology. Initially, the AHRA largely succeeded only in destroying the market for digital audio devices. Then, as technology developed, it became clear that the copy protection system of the AHRA was extremely ineffective. Despite provisions in the AHRA that would allow the mandated technology to be "updated," no serious attempt has been made to do so. Instead, the recording industry is working through private sector technologies to solve its problems, rather than seeking another government mandate.

The best way to protect content is through technology, not government. Proven content protection technology exists today that does not require new legislation for efficacy. Alternative technologies that would require new legislation to be effective in our opinion are not technically sound because the protection offered by the law

can never be as strong as protection offered by the strength of encryption and mathematics.

A standard for copy protection is required to assure a viable market for content creators and consumer electronics companies, while making the widest range of content available to the public. Such a standard should be technically sound, be open to all qualified participants, and not be controlled by a for-profit entity. Cisco remains committed to work with the industry to implement an open and interoperable system of this nature.

Mr. Chairman, thank you for the opportunity to present Cisco's views today.

PREPARED STATEMENT OF ROBERT A. PERRY, VICE PRESIDENT, MARKETING,
MITSUBISHI

Chairman Hollings, Ranking Member McCain, and Members of the Committee—I am pleased to appear today on behalf of the Home Recording Rights Coalition (“HRRRC”). I serve on the Board of the HRRRC, and currently chair the Video Board of the Consumer Electronics Association (“CEA”). I also serve as Vice President of Marketing of Mitsubishi Digital Electronics America, Inc., a corporate leader in the transition to DTV and other digital products for the home network. In my role at Mitsubishi, I am the executive directly responsible for the product strategy of the company.

The HRRRC was founded more than 20 years ago, after a U.S. Court of Appeals ruled that Sony could not legally sell the first “Betamax” home VCR to consumers. Fortunately for all involved—including the motion picture industry—that decision was reversed by the U.S. Supreme Court. Not many years after having failed to keep the Betamax and successive generations of VCRs off the market, the motion picture industry began receiving greater revenue from the home video market than it does from the theatrical box office, a trend that continues in the digital DVD era.

This morning it should be apparent why, after twenty years and a Supreme Court victory for consumers, the HRRRC finds it necessary to remain active. Despite the tremendous benefits conferred on the entertainment industry by consumer electronics products, some in the content creation and distribution industries continue with their efforts to limit, curtail, restrict and confine the design of these products, and their use by consumers. Many or most of the areas in which restrictions are now sought are targeted at the home, and the home network, rather than at abuses related to the Internet, which is their purported justification.

Proposals to restrict the development of new technology, and consumers' use of it, represent an alarming trend which in our view should be a main subject, if not the subject, of the hearing today. We are at the forefront of a digital revolution that, if allowed to proceed, can offer consumers greater value at lower prices. But history teaches that if the Congress allows content industries to dictate the designs and uses of new products, the digital revolution will never reach its full potential.

All who seek regulation or legislation today cite to actual and potential redistribution of commercial programming over the Internet. But the legislative agenda of some is not confined to addressing this problem. It extends to dictation of the design of products by technology companies, and the dictation of their use by consumers. We hope this Committee, in its fact finding, will sort the wheat from the chaff.

The HRRRC Has Worked With Content Industries On Approaches That Are Balanced And Fair To Consumers

In the analog domain, HRRRC cooperated with the entertainment industry in drafting section 1201(k) of the Digital Millennium Copyright Act of 1998 (DMCA). Prior to that, we worked with the recording industry on the Audio Home Recording Act, and we took the initiative in negotiating with the motion picture industry, to address their concerns over emerging digital video formats, starting in 1992. It was, literally, we who invited them to the table. We were also among the founders, along with information technology and content participants, of the Copy Protection Technical Working Group (“CPTWG”), which has met approximately every month on the West Coast for the last six years. Its most recent meeting was yesterday.

For several years, both HRRRC and consumer electronics companies have offered to work, via legislation if necessary, with those who legitimately want to address large scale, anonymous redistribution of content over the Internet. I am a co-chair of a CPTWG work group on this particular subject. Consumer electronics companies have already committed publicly to support measures, regulatory if necessary, addressing such redistribution.

Some Content Industry Agendas Extend Into Deep Control Over Consumer Practices In The Home, Not On The Internet

The movie industry agendas from which consumers need protection go well beyond dealing with external connections to the Internet. Rather, they extend internally, inside the home, into heart of the consumer home network. We are concerned about efforts to control or eliminate reasonable, healthy, and constructive practices of consumers, and to chill the design of innovative products.

Congress Should Not Allow Control Over Consumer Home Recording Of Free Over The Air Broadcasts

At least one motion picture and television network company has sought, through regulation or legislation, the ability to control consumers' enjoyment of free, over the air broadcast programming within the home—not just on the Internet. The argument has been that private sector content distribution licenses provide for “generational” control of home recording in some instances. So, it is reasoned, free, over the air digital broadcasts should be similarly controlled, and consumers may be limited to making a single, personal copy.

They shouldn't be. Consumer expectations about free, over the air broadcasting are different from those as to cable and satellite delivery. Those who receive programming over cable or satellite have contractual relationships with their content distributors; the devices they use are specifically licensed to receive content. Approximately 15 percent of the public, however, chooses to forego such contractual or license relationships, preferring to watch whatever they choose, plus the advertising, delivered via rooftop antennas or rabbit ears. Imposing a technical regime on free broadcasts would forever change this paradigm and experience. If those who want to equate free programming with paid programming had their way, these consumers would become involuntary licensees, subject to technological controls negotiated elsewhere.

Advocates of such a regime say they would still allow consumers to make a single copy of a program. Beware. As Herbert T. Gillis famously advised, “The first step down is a long way.” Any imposition on consumer home recording of free, over the air broadcasts would have significant, harmful consequences for consumers.

For example, many consumers now have set-top boxes with built-in “personal video recorders,” or PVRs, as well as plain-old VCRs. Some studios insist that consumers should only be able to make one copy of a broadcast, claiming that they never have a need for more than one. If a PVR copy counts as the consumer's one copy, however, he or she can never record it on a VCR, or play it back on another TV in the house. A program recorded for viewing by the children could only be viewed on the same TV on which a parent would otherwise watch Sunday sports. A program of local interest could not be shared with parents or grown children living in another community.

Licenses governing programs distributed over cable and satellite systems have complex and expensive ways to deal with such issues—for example, allowing transfer of a copy from a PVR to a VCR, if the PVR copy is erased at the same time. Nor have such licenses imposed restraints on programs originating as free, over the air broadcasts, even when delivered to the home over cable or satellite. Imposing such complexities as to free, over the air programming would bring the government into a complex, changing, and expensive technical area, with consumers suffering the consequences.

HRRC is strongly opposed to any legislative (or regulatory) interference with consumers' rights to engage in inhome, private, non-commercial recording of programming originating as free over the air broadcasts. We urge the proponents of legislation to publicly disclaim any such objective today, on the record, and without condition.

Congress And The FCC Should Not Allow Content Owners And Distributors To Exert Remote Control Over Consumers' Selection Of Home Network Interfaces And Viewing Products

Another agenda of some studios, that we already see in proposed licenses to be administered by the Federal Communications Commission, is the exertion of remote control over the daily operation of consumer devices. The technical phrase, “selectable output control,” sounds inviting—until one realizes that the “selection” would be done by the movie studio or cable company, not by the consumer. The technology as to which some studios seek mandated adherence would allow them, or cable or satellite operators, to exercise direct, remote control over all product-to-product connections in the home. Once given this power, a movie studio, or cable or satellite operator, could simply turn off any interface at will, effectively making the consumer home network a part of its own distribution system.

Please remember that digital technology, which causes content owners to feel threatened as to its distribution potential, offers a much more frightening potential for control—if the FCC and the Congress allow such control to be exercised. And here is why it is being sought. Today, there are two standard all-digital interfaces being readied for widespread use in the home. One, known as IEEE 1394, iLink, or “firewire,” provides a bi-directional means of connecting TVs, VCRs, and other standard consumer products within a home network. This connection allows home recording to be either supported or disabled. The other digital interface, called “DVI,” is a one-way, broader digital connection originally designed to hook personal computers to digital monitors. The DVI signal used in this interface is simply not recordable by any known consumer technology.

Over several years of negotiations, license agreements governing the “1394” interface have spelled out when this technology may be used to block home recording of certain content, based on “encoding rules” that protect current consumer practices. (Congress in fact endorsed these rules in principle as part of section 1201(k) of the DMCA.) Such an approach is not possible utilizing DVI alone.

Each of these interfaces offers different advantages. Many people in my industry envision home networks in which each interface connection would be available to consumers—some TV receivers might be designed to rely on the “1394” inputs, some on DVI, some on both. Connections to digital VCRs, for example, would be made through the 1394 interface, meaning that copying would be controlled, but subject to balanced “encoding rules.”

However, if those studios seeking to impose “selectable output control” gain this power, they could remotely control, on a program by program basis, which one of these interfaces would be active in a home, and which would be switched off for all purposes. A studio, cable MSO, or satellite provider that did not want to permit any home recording on VCRs would simply turn off the “1394” interface, and the “encoding rule” protections for consumers, painfully negotiated over several years, would become irrelevant. But the damage would not stop there. A consumer who had bought a state of the art HDTV receiver, with a copy-protected digital 1394 interface, would lose the signal from this interface for all purposes, including viewing the program. So even consumer high resolution viewing, on the newest frontline, digital products of the DTV transition, could be cut off at the discretion of the studio, cable, or satellite company.

Unfortunately, the damage to consumer living rooms from “selectable output control” would not stop even at the choice of digital interfaces. Neither of these digital interfaces is yet in general use. Most HDTV displays in the market today, and sold over the last three years, rely on the same sort of broadband interface that is used to deliver signals from PCs to computer monitors. (In computer terminology it is called “RGB.” Its consumer electronics cousin is component video, also known as “Y, Pb, Pr”.) If Congress were to give this enormous “selectable output control” power to content owners, they could simply cut off broadband signals to the pioneering Americans who have purchased these 2.5 million displays.

To simplify this issue—if studios and content distributors were given this power over consumer viewing, some consumers might conclude that they had overpaid for their brand new HDTV. Even more disastrously for our country’s digital television transition, they might conclude, and tell their friends, that it was a mistake to buy any new digital television at all—because all the high resolution inputs on the TVs manufactured to date could become useless as to content delivered over cable, satellite, or broadcast. We suggest that any studio proponents of such control be asked to explain to the Committee how such an outcome could possibly serve the public interest.

Spokesmen for the entertainment industry have never publicly disclaimed any intention of proceeding with such an agenda, through licenses as enforced by the FCC or through the Congress. We call upon them to do so today.

A Cable Industry Proposed License And Specification Threatens Consumer Enjoyment Of Innocent Home Products

Ironically, the Federal Communications Commission today is in a position to enforce anti-consumer license provisions because of a provision passed by the Congress, in the 1996 Telecommunications Act, that was meant to be explicitly pro-consumer. Section 304 of the 1996 Telecommunications Act requires the FCC to assure in its regulations the competitive commercial availability of devices that attach directly to cable systems—breaking the 50-year monopoly, based on their concerns over theft of service, that cable multi-system operators have enjoyed.

To achieve competitive entry with a range of new devices, as occurred in telephone deregulation, the FCC oversaw a standards development process that would also protect the security of cable signals from unauthorized use. CableLabs, the re-

search consortium of the cable industry, volunteered, and was chosen by the FCC, to set such standards. But as presently drafted these standards, and the license agreement that would extend from the cable industry to device manufacturers, pose another threat to consumer enjoyment of home devices, and represent yet another part of a motion picture industry agenda represented before you today. We believe that in combination, their specifications and their license would:

- impose “selectable output control,” as I have described, on all downstream devices
- reduce viewing resolution by three-fourths, at the option of the content owner (out of concern for potential copying)
- restrict the other functions and the flexibility of devices hooked up to cable, making sure that the competitive flowering and diversity that followed telephone deregulation does not happen with respect to cable

HRRC and others have repeatedly requested, in writing, that the FCC publish the pending drafts of this license, for public comment. We urge this Committee to exercise its jurisdiction to see that this occurs.

Several of these impositions are said to be at the behest of content owners. We call upon those who seek legislation that would grant them power over consumer devices to state clearly whether and how they intend to preserve consumer enjoyment of home devices attached to cable and satellite systems.

Congress Should Look Skeptically At Vague Proposals For A “Single, Standard Secure Domain” Controlling All Consumer Use Of Consumer Electronics And Information Technology Products

The Consumer Electronics Association (“CEA”) has provided financial support for its members’ attendance at CPTWG, and has also supported research and testing products of its work groups. I am thoroughly familiar with the technical proposals pending as to Internet redistribution. This project does not and should not require the sort of control over the home network that apparently has been sought as a part of a separate legislative agenda of the sort I have described today.

In addition to going well beyond the redistribution issue, these agendas also get well ahead of private sector processes. We have heard speeches about “single, standard security domains,” but have yet to see particular proposals, in the CPTWG or elsewhere, specifically related to such speeches, defining what is sought, and what it would mean for products that are in consumers’ hands today. This imprecision will not be improved by tossing everything into the hands of a government agency to figure out. In my view, the output of industry-led groups such as the CPTWG should be an essential input for the consideration of any proposed legislative or regulatory agenda. We do not have an admirable history in doing the opposite—legislating the “solution,” and expecting the private sector to figure out what the Congress meant.

Any Further Regulation Or Legislation Would Be Appropriate Only As A Narrow, Necessary, And Targeted Supplement To A Private Sector Consensus That Protects Consumers

As I noted near the outset, the HRRC has worked cooperatively on legislative and regulatory proposals over the last two decades, so long as they gave fair consideration and protection to consumer interests and practices. In the analog domain, HRRC cooperated with the entertainment industry in drafting section 1201(k) of the Digital Millennium Copyright Act of 1998 (DMCA). This section—the only part of the DMCA that provides for any mandate on product design—takes a balanced approach. It recognizes the prevailing technology that may be used to limit analog home recording, but subjects any use of such technology by content owners to clear “encoding rules” that protect reasonable and customary consumer practices.

A similar approach could be identified to address widescale redistribution of content over the Internet, and, on an appropriate time scale, to provide necessary tools for the enforcement of reasonably balanced license agreements that address copy protection issues, as well. Such an approach has been suggested by Rep. Boucher in House hearings over the last several years. In fact, representatives of the content industry at times have appeared publicly committed to work towards enactment of a digital video version of section 1201(k), but little has been proposed as to such a project.

HRRC has been engaged in the debates over actual and potential copyright legislation for the digital era since that era began, for consumer recording devices, in the mid-1980’s. We have developed a set of principles, as to potential legislative or regulatory mandates, which we commend to the Congress in the interest of protecting consumers and not interfering with either technical progress or commerce:

HRRC will consider supporting a regulatory or legislative mandate only if—

- (1) the issue cannot be addressed effectively by private sector standards or licensing activity alone,
- (2) the result promotes rather than hinders technical progress and legal certainty,
- (3) the mandate is of a known technology and as narrow as possible, and
- (4) the outcome protects consumers' reasonable and customary expectations.

Narrow And Targeted Provisions May Be Appropriate To Secure Full Consumer Use And Reliance On Component Analog Interfaces

I have already identified the pending consensus, private sector approach to redistribution of broadcast content over the Internet as one candidate for government support of an existing private sector consensus. There is one other issue that we see, a bit further on the horizon, which might be addressed according to the principles that I have suggested.

The preferred methods for dealing with reasonable content industry concerns are private sector development of technologies, and private sector licensing as the prevailing means to apply such technologies. These should be subject to fair “encoding rules,” protecting consumers from arbitrary impositions that interfere with their reasonable and customary expectations. Through licensing alone, however, it may not ultimately be possible to reach all the relevant devices in the market, or to protect consumers through adequate encoding rules.

For example, HRRC is committed to maintaining the full consumer enjoyment of DTV displays, owned by millions of consumers, that rely on the “component analog” video interface. We have asked the FCC, and we are asking the Congress, not to do or allow anything that would interfere with the right of consumers—the pioneers in the DTV transition—to use and enjoy these display devices. Those who seek the discretion to turn off or degrade the quality of this interface in set-top boxes (that would feed signals to these displays), however, cite their inability, using present technical and licensing tools, to provide any protection for high definition signals once they are allowed to pass over these interfaces. They argue that without such tools, there will be no means to prevent the future re-digitization of these signals for passage over the Internet. They would also need a means to enforce whatever copy control they may apply to licensed programs provided by cable or satellite conditional access—e.g., pay per view, video on demand—as allowed by reasonable “encoding rules.”

We hope that everyone in the Congress, the FCC, the movie industry, and the cable and satellite industries will agree with us that it is essential that consumers who buy DTV and HDTV receivers not lose most, or even any, of the benefits of their bargain. Therefore, in HRRC's view, a balanced regime as to “component analog outputs,” that is fair to consumers, is far preferable to the imposition of broader measures such as “selectable output control” or “downresolution.” One such approach—which at this stage would still need much private sector investigation and discussion—would be an obligation only on narrowly and specifically defined, future analog-todigital converters, to read and respond to so-called “watermark” technology that may emerge from a private sector consensus. Since private licenses cannot and should not reach every product, to enforce that obligation equitably some regulatory or legislative action may be necessary. We emphasize, however, that much needs to be done in the private sector first, before we can know whether the necessary preconditions as to fairness to consumers, and not hindering technology or commerce, can be met. We know there is particular concern on these points in the information technology industry, and we share it.

A Published Draft Of Legislation Is Unfocused And Dangerously Overbroad

I have attached the HRRC critique of the first published version of a draft bill entitled the “SSCA.” I understand that it is being reconsidered. The fundamental problem with its approach—aside from its potential support for goals that we consider to be anti-consumer—is the lack of any apparent nexus between content that would be protected, devices that would be subject to mandate, and the results that would be achieved.

One could go on and on about the sorts of devices that would be covered, intentionally or inadvertently—from wristwatches to PDAs to ordinary TV receivers to supercomputers. This is not a drafting issue. This is a fundamental policy issue. The main question is whether the Congress is going to hand unfettered control of the future design of devices by consumer electronics and computer makers over to a few studios to who wish to exert absolute authority over what consumers can do with lawfully acquired programming in the privacy of their homes.

If Congress is not about to hand over such power, we respectfully suggest that it needs to back up and focus on particular issues and problems, find out exactly what the private sector is capable of doing, find out where the private sector would need help as to enforcement of reasonable measures, and, most importantly, assure that the outcome is fair to the consumers who are critical to the success of the digital television revolution.

On behalf of the HRRC and the other organizations with which I am affiliated, I greatly appreciate the opportunity to have appeared today.

HOME RECORDING RIGHTS COALITION ANALYSIS AND CONCERNS, DRAFT "SSSCA"
TECHNOLOGY MANDATE LEGISLATION

I. Objections In Principle

The approach taken in the published staff working draft of "SSSCA" technology mandate legislation would deal far too harshly with consumers, and put an end to their reasonable and customary home recording practices which, to date, have contributed to entertainment industry prosperity. The draft—

- Does not distinguish between ordinary consumer retransmission or copying of a work in a home network; and the redistribution of programs, outside the home, in competition with the original public distribution. It would prevent both.
- The single exception, for making a "personal" time-shift copy of only certain video programming, would not acknowledge the common practice of sharing of lawfully acquired material among family and close friends, nor would it recognize customary consumer "place shifting" of audio recordings. It would, therefore, in the guise of "security" legislation, virtually wipe out most private, non-commercial audiovisual, and audio, home recording.
- For the first time, this legislation would constrain consumer use, within the home, of free, over the air TV and radio broadcasts. After passage of this bill, requiring device compliance with an encryption regime as "security" for receipt of free as well as paid services, no consumer could hoist a pair of rabbit ears, or turn on a car radio, without having to agree to become a "licensee."
- The draft bill makes no reference to the Digital Millennium Copyright Act of 1998 (DMCA), and thus may make illegal devices built in conformance with that statute, in particular analog recording devices (containing digital circuitry) that implement a well-known anti-copying technology as required under section 1201(k).
- The bill contains no exemption for products that comply with the Audio Home Recording Act of 1992 (AHRA), under which consumers pay levies on products and media used primarily for digital audio recording. Nor does the bill repeal the AHRA.

II. Objections As To Overbreadth And Ambiguity

The draft legislation is so broad in its application that, technically and legislatively, it entirely lacks focus. Selecting actual products to which to apply its provisions, from the literally millions that would be covered, would be pure guesswork. Hence, its application would be arbitrary, its direction uncertain, and its effect on the marketplace potentially catastrophic. The draft—

- Does not require that "digital" products be in any sense electronic.
- Does not require that an "interactive digital device" be in any sense interactive. It covers all devices primarily used for "storing, retrieving, processing, performing, transmitting, receiving, or copying information in digital form." Even if limited to electronic devices, this would include most wristwatches, microwave ovens, TV sets, radios—anything with an IC chip in it. Obviously, all PCs, PDAs, and consumer electronics products would be covered.
- Does not indicate or even imply what relationship is desired between the device, the "certified security technology," and the content that is sought to be "protected." Thus it entirely lacks focus or direction. Having identified a device that falls within the definition of "interactive digital device," how is the private party or government body to decide what is to be "certified," and thus mandated for application and conformance? Must a device (like a PDA) that stores, processes, performs, transmits, receives, and copies information be subject to a separate "certified security technology" for each of these functions? If not, why not?

III. Objections To Nature And Sweep Of Government Mandate

Consumers, consumer organizations, retailers, and others would be shut out of the preliminary round of “negotiations” as to imposition of any “certified security technology”—only “device manufacturers” and “copyright owners” would participate. Even the device manufacturers would lack negotiating leverage, as the bill puts no constraint whatsoever on the objectives and means of enforcement that can be demanded by the copyright owners. The draft—

- Provides no guidance to the Administration as to which products and technology must be subject to a Federal mandate after private sector negotiations fail. Is a Federal mandate triggered after any and every failed discussion between any device manufacturer and any copyright owner? If not, which private sector discussions would be chosen as triggering a mandate, and which would not?
- Would provide a sweeping antitrust exemption for private party cooperation in imposing constraints, without providing for any input from the Department of Justice, its Antitrust Division, or the FTC.

PREPARED STATEMENT OF JAMES E. MEYER, SPECIAL ADVISOR TO THE CHAIRMAN AND FORMER SENIOR VICE PRESIDENT/CHIEF OPERATING OFFICER, THOMSON MULTIMEDIA

Thank you, Chairman Hollings, Senator McCain, and Members of the Committee for the opportunity to bring the views of my company to this hearing.

My name is Jim Meyer, most recently Senior Executive Vice President and Chief Operating Officer and currently special adviser to the Chairman of Thomson multimedia. I have over 25 years of experience in the consumer electronics industry, and I'm here today to share the views of one of America's largest entertainment industry employers. I believe that I also can speak fairly for the millions of consumers who purchase RCA brand home entertainment products each year and call us if there is a problem.

I commend you, Mr. Chairman, for holding this hearing and for the continued leadership that you, Senator McCain and other Members of the Committee have demonstrated over the past decade in attempting to guide and accelerate our nation's transition to digital television. The subject of today's hearing, the protection of copyrighted video programming formatted digitally and electronically transmitted by broadcast, satellite, cable or over the Internet, involves numerous difficult technical and business issues. I would suggest, however, that the public policy issues are relatively few and straightforward.

First, there needs to be agreement on digital copy protection standards if the conversion to digital television is to move forward more rapidly.

Second, any such agreement must embody one fundamental principle: it must protect both the interests of digital content owners and providers *and* consumers. Copy protection must be effective, particularly in addressing the core problem of unlawful internet retransmission, but it must permit consumers to continue to make recordings for their personal use within their homes just as they have come to expect in the analog world since the advent of the VCR. Consumers making investments in advanced digital products will not and should not accept reduced functionality in their digital viewing experience.

Third, ideally, agreement should be reached voluntarily among the affected parties through private negotiations using established standard setting processes. However, if that effort does not succeed within a reasonable period of time, the government must facilitate and, if necessary, mandate the adoption of standards.

1. Unresolved Issues Slow The Digital TV Transition

While digital technology is transforming our industry, the switch to digital transmission and reception of TV signals has been a bumpy ride so far. Fewer than one out of six broadcasters is now sending a digital TV signal. We are hopeful that by May 1, 2002, an additional 400 to 500 broadcasters will be transmitting digitally. While consumers have purchased more than two million HDTV monitors and sets, the reality is that this transition has only just begun.

Content owners have yet to release truly compelling digital high-definition movies, sports, and shows. Their reasoning is simple—they want more protection from illicit Internet redistribution of digital content.

Obviously, if we're going to have an orderly transition, there needs to be agreement about what we're trying to protect and how. Thomson prefers private agreements that insure full functionality in a Personal Home Network, and protection of digital content from widespread piracy.

To that end, Thomson is developing a new technology called SmartRight. Designed to work with a simple “smart card,” the SmartRight system would permit a consumer to view, record, and store digital content for his own use within what is called a personal private network. The system would work for broadcasters, for cable and satellite operators, and could even be extended to computing platforms. SmartRight is a good example of a technology that is reliable, renewable, modular, and easily applied to a variety of situations.

Beginning this year, Thomson is also building copy protected interfaces for cable and satellite programming into its new line of RCA Scenium integrated digital television receivers and in RCA HDTV monitors that will be available to consumers in time for this year’s Christmas shopping season.

Another roadblock in the digital TV transition is incompatibility between various cable systems throughout the country. Current cable TV systems are proprietary and closed, making it impossible to develop new digital TV products that could easily be sold anywhere in the U.S. and plug directly into a cable outlet. This is an unfortunate fact that will certainly hinder a speedy digital TV transition.

2. Background on Thomson multimedia

Thomson multimedia is the company behind RCA home entertainment products and the owner of Technicolor, a service provider to the film industry. As the leading manufacturer and marketer of consumer entertainment products, and as a trusted supplier of DVD and tape replication services to Hollywood, Thomson is well positioned to comment on how best to expand broadband entertainment while preserving both home recording rights and the rights of copyright holders.

One out of five TV sets sold in America comes from Thomson’s RCA brand, our professional broadcast division is one of the world’s largest, and we are the worldwide leader in DVD and CD-ROM replication serving such diverse customers as RadioShack, Circuit City, Best Buy, Wal-Mart, Fox, Disney, Warner Bros., and hundreds of others. Of course, millions of consumers are also our customers, and we field more than 10,000 calls, e-mails, and letters each day with consumers who need help, need service, or just need some advice.

As one of the largest employers in the entertainment industry, our reach spans these United States, with more than 10,000 employees in 30 different communities. Our biggest concentration of employees live and work near Indianapolis, Indiana and in Senator Boxer’s home state of California (near Hollywood) at Technicolor.

So, we have a unique position in both of the content and electronics industries—by helping the creative community reach the public through Technicolor’s trusted film and video services, and by designing and selling new RCA home entertainment products that entertain and inform millions of people.

3. Consumers Expect Features Like Home Recording

With my 25 years of experience in the consumer electronics industry, I’ve lived through several revolutionary changes in our business. I was there when RCA sold the very first VCR that could record four hours on one tape. That business is now very mature, with VCRs themselves selling for under \$75 and both content owners and consumers migrating to the popular DVD platform.

Home recording has become a popular past-time, as people use their VCRs to watch their favorite programs at different times and keep “bookshelf” copies in a collection. Thomson, alone, sold more than 55 million blank VHS tapes last year. While not formally enshrined as a U.S. law, home recording has become a feature that consumers expect to enjoy. They like the convenience. Some record to catch up on favorite programs, others to skip the commercials. But most people aren’t using a home VCR to become pirates.

Pre-recorded movies and TV shows on tape and disc are coded to prevent copies from being made. Both the VCR and the DVD player recognize standardized copy protection methods for pre-recorded content, restricting the average person from making and selling pirated copies.

With today’s products, a good balance has been struck between the consumer convenience and popularity of home recording and protecting copyrights. Tomorrow’s products are another story. Digital recording makes perfect digital copies. The situation is compounded by the convergence of the computer with many popular consumer electronics products. Typically, computing devices are not subject to the same restrictions as consumer electronics products. This disparity is the cause of much debate and concern.

Today, Thomson is working on new technologies that will link together digital entertainment products in a Personal Home Network. This is the VCR of the future—the ability to easily record shows and watch them anywhere in your home, at any time. Our customers have been struggling to identify how the “rules of the game”

should change as products go digital and perfect copies are possible. Thomson draws the line at the Personal Home Network, allowing consumers to time shift, keep archival copies, move content to various devices, and preserve favorite content as long the consumer wants to. But there are legitimate fears about sending that content outside the home network. These issues are now heating up because of America's transition to digital television.

4. Thomson Leads the Digital TV Transition

With the transition to digital TV just a few years old, Thomson has already developed a broad array of RCA-brand digital television equipment that spans a wide range of price points—including digital satellite receivers, DVD players, HDTV monitors and HDTV receivers.

Consumers can make the digital transition in a manner that serves their own needs and personal budgets. For most people, it means the addition of a digital satellite receiver or digital video disc player—and maybe an upgrade to an HDTV monitor. Slowly, as the amount of good HDTV programming is increasing, we're also seeing growth in the market for fully-integrated high-definition televisions.

As I mentioned earlier, Thomson supplies digital broadcast equipment to broadcasters, cable networks, satellite broadcasters, local stations, and production companies. And all of them worry about security.

5. More Digital Content and More Digital Products Will Drive the Transition

It is indisputable that high-value, high-quality content will drive deeper consumer acceptance of digital television. For example, the availability of thousands of movies on DVD has sparked strong sales of high definition TV monitors and sets—as well as discs and players.

Thomson views the digital TV transition holistically—that is, the pieces are interconnected: viewers want content; broadcasters want viewers; and content companies want to sell their content, with assurances that their digital material is secure. For more consumers to embrace digital TV, we believe that two things must happen.

First, high quality and innovative digital content must be created by the content community and distributed in its fullest quality and integrity. This happens with over-the-air terrestrial broadcasts, through the cable and satellite facilities, with pre-recorded media, and someday even over the Internet.

Secondly, for more consumer acceptance of digital TV, companies like Thomson must offer innovative products that let consumers exploit the full benefits of going digital. As your constituents buy new digital gear, they will still want to record favorite shows, pause to take a call during a broadcast, and save episodes or sports events for posterity.

Achieving these two mutually reinforcing—not mutually exclusive—goals of *more HDTV content* and *more digital products* requires certainty for content providers, for consumers, and for manufacturers.

6. Copy Protection Standards Provide Assurances for Studios, Network Operators, Manufacturers, and Consumers

What's missing from the transition is certainty—for everyone. There are holes in the system that could be used to steal content. That worries the Studios. Broadcasters fear they'll be passed over for more secure networks like satellite and cable. Manufacturers move cautiously, because of the huge engineering investments required to make new products. And Consumers may not buy anything, fearing obsolescence.

In more detail:

Studios need assurance that their content (their intellectual property) is protected before they make investments in the production and distribution of high quality digital content. They will not have that certainty unless there is genuine and effective protection against commercial piracy and against unauthorized retransmission of digital content—especially over the Internet. Once the necessary copyright protections are in place, we believe that consumers will enjoy a dramatic increase, not decrease, in the availability of compelling, creative works online. This will be good for consumers, and very good for the companies that provide the content.

Network Operators like cable, satellite, and terrestrial broadcasters want to offer their services in a secure environment so that they get the best content and interested subscribers.

Manufacturers like Thomson need to know that consumers won't be stranded by obscure licensing agreements or heavy-handed control exercised by content owners under the terms of licensing agreements between Cable Labs and consumer electronics manufacturers. Some proposals would allow the owner of the content to pre-

vent recording, or worse, automatically erase programs that consumers have recorded at home. Just because we move to digital delivery doesn't mean that we should run roughshod over law-abiding consumers.

Consumers expect full functionality in new products. They want home entertainment systems to work as advertised, and consumers want to know that common home recording practices enjoyed today will continue. Believe me, nothing will kill the transition to digital television faster than trying to sell digital products that are actually *less* functional than today's common VCR.

It's clear that some form of copy protection standard setting is necessary. (Some of this work has already been done for cable networks, although HOW that technology is used remains an open question.) Preferably, these standards should be adopted expeditiously by private negotiations among affected industries. If that effort fails, the government must facilitate and, if necessary, mandate their adoption. These standards must, however, focus on the *real* concerns—such as commercial piracy and illicit retransmission of content over the Internet, and not just new ways for the copyright holders or network operators to charge for consumer convenience.

During the last few months, progress has been made within the Copy Protection Technical Working Group and related groups, bringing together representatives of all industry stakeholders, toward agreement on a number of outstanding copy protection issues, most notably a broadcast flag which could be embedded in the digital bitstream and recognized by a digital television receiver, cable set top box or computer. The heightened Congressional interest in these activities reflected in discussion draft legislation circulated by Chairman Hollings' Commerce Committee staff and the roundtable discussions led by Chairman Tauzin and Upton in the House have clearly accelerated the pace of these discussions. Hopefully, they will conclude swiftly and successfully.

Thomson multimedia remains squarely focused on the needs and desires of our customers. If we can work this out, then everyone will benefit. Studios will sell more content. Network Operators will have more viewers. Manufacturers will sell more products, and Consumers will enjoy a better entertainment experience.

Ultimately, our own government will be able to reclaim the valuable broadcast spectrum now used for analog TV—and reassign it for future communications needs.

Thank you for your interest in these complex but critical issues. I look forward to your questions.

The CHAIRMAN. Thank you. Mr. Valenti.

STATEMENT OF JACK VALENTI, PRESIDENT AND CHIEF EXECUTIVE OFFICER, MOTION PICTURE ASSOCIATION OF AMERICA

Mr. VALENTI. Thank you, Mr. Chairman, for you and Senator McCain calling this hearing. I really think in my frail judgment that the progress that is being made now would have been in exile had you and Senator McCain and your Committee not given some, quote, incentive, unquote, for these talks to begin.

And I want to thank Senator Smith and Senator Boxer for their patience in being here. The greatest gift one can give another human being is the gift of one's presence, particularly in Congressional hearings. So I am grateful to you for that.

The CHAIRMAN. I am grateful to them, too.

[Laughter.]

Mr. VALENTI. One of the down sides of being chairman of a committee is that you are forced to stay at a hearing, and so I have compassion for you, Mr. Chairman.

I must say that I thought that Mr. Eisner and Mr. Chernin laid this out compellingly, and persuasively, and accurately. My only regret is that they said it so well that all these picturesque phrases that I had in mind I am going to have to discard now, and take some of Senator Eastland's advice and let the boy talk.

I do believe that there is a truth that underlies everything that we are doing. Let me get that out of the way. Mr. Churchill once

said, "The truth is incontrovertible." He said, "Ignorance may deride it, panic may distort it, and malice may ignore it, but there it is."

One of America's greatest assets is in danger of being slowly squandered and shrunk as a result of virulent piracy that in ever multiplying avalanches is on the Internet, and that is a truth that we have to deal with.

Now why is that important to the American people? Why? Well, what is the economic worth of these copyright industries: movies, television, home video, books, music, and computer software, the intellectual property community copyright industry. What is at stake here, not just for us at this table and the previous panel, but for the citizens of this country?

The copyright industries are America's greatest trade export prize. We comprise about almost 5 percent of the GDP of this nation. We bring in more revenues, as Mr. Eisner pointed out, than aircraft, than agriculture, than automobiles, and auto parts. We accrue new jobs at three times the rate of the rest of the national economy.

And the movie industry alone has a surplus balance of trade with every single country in the world. No other American enterprise can make that statement at a time when you all know we are bleeding from over \$400 billion in deficit. That is why it is important to the American people, not to let this enormous awesome engine of economic growth go into decline, and it very well may be.

For as Senator Boxer pointed out, who on earth in their right mind is going to continue to invest large sums of private risk capital in a movie that is going to be ambushed in the first day it is in the theater before it makes its journey through all the other sequences that it has to go through in order to retrieve its investment, much less make a profit?

That is what is at issue here, and that is why it is important. And I am grateful for—Andy, it is good to see you here, and Mr. Meyer, and Mr. Perry. I want to deal with Mr. Perry in just a minute.

Because we are here in order to find solutions. Now, there are three goals that I put in the paper that I have submitted to you that we have to solve. The other panel made it very clear, and truthfully, as Mr. Eisner and Mr. Chernin, and the gentleman from Intel, by the way, I wish I was as sure of one thing as he is of everything. I mean that would be something.

But I think that we know we can protect our property. There are a number of wonderful content encryption systems out there to bring them down from a satellite to a home. But we have other issues, and I set forth three goals, Mr. Chairman, in my document.

Goal No. 1 is the broadcast flag which will keep television programs from being redistributed on the Internet which is a form of thievery. Now, I want to pay compliments to the great majority of the information technology community. I laud them, and the consumer electronics industry, and the movie industry for getting together and dealing with this broadcast flag. I cannot say enough wonderful things about all three of these groups where they are really trying strenuously to find an answer to the broadcast flag.

And I think maybe by the end of March I have been told there is a possibility of this coming to pass. And it may be that they need

to come to Congress or the regulatory agencies for implementation and enforcement of the broadcast flag. And I thank you all. I think you had a lot to do with making us go forward.

Goal No. 2 is plugging the analog hole. Now that is technical jargon, and I want to put it in plain English, because I have a technique for dealing with abstruse issues, Mr. Chairman. If I can understand it, your granddaughter, your grandchildren can understand it. So I use myself as a template here.

What it means is that when a digital signal comes down and goes into a set top box or whatever, a digital signal, and it goes into the television set. Ninety-nine percent of television sets in this country are not digital. I do not even own a digital set. I am going to buy one, but I do not have one.

So it is an analog set. That digital signal then comes out of the set top box, and it is transformed immediately into analog. Why? So it can be watched on the television screen.

But once that happens that can be sent off to a computer. It can be sent to the Internet in unprotected form. That is what is called the "analog hole." That is kind of an awkward phrase, but I guess it is the best way to describe it. And conversations are going on now with your community, all these three gentlemen's community, the consumer electronics' industry, information technology, and the movie industry to try to find some way to plug that analog hole.

But the third goal, and the one that was talked out at great length, and wherein there was an astonishing revelation from the gentleman from Intel. He threw up his hands and said, "We cannot do anything about it." Well, I do not believe that for one minute.

The point is that unless we can deal with peer-to-peer or so called "file sharing sites," the Gnutellas, the Groksters, the Morpheus that you heard about. You saw it brought down. My colleagues bring stuff down all the time, and I am appalled at how watchable it is. But that is going on.

Viant, a consulting firm in Boston, estimates 350,000 movies a day, a day are being brought down. And all of the university systems here in this country, all the California systems, and Oregon, and South Carolina, and my home state of Texas, all of those university, state-of-the-art, large pipe, high-speed Ethernet systems, the best there is, are being overburdened, an avalanche with students using that to bring down stuff in 20 minutes.

I am not going to give you the name of this university, but I found out by reading one of their campus newspapers, somebody sent it to me, they were so appalled and so angst-ridden by the fact that their system is being crushed by all these students using it to do what? To bring down movies. It is easy, it is fast, it is free, and it is also illegal.

And for this, parents are spending a couple hundred thousand dollars a year to send their son to the university that says it is OK to steal. This university, in order to relieve the burden on their Internet system, set up a separate server of what? For Gnutella. Gnutella is one of these fragmented, anonymous systems up there where everybody shares their files. As I said, file stealing sites is what they are.

And I sent a letter—I would like to believe it was a rational letter, but I guess I was a little angry, I sent to the president of the

university. I said, "Your disreputable plausibility about this collides with the concept of a free society, its ethics, and its morality. How can you do this?" I am pleased to say that instantly they responded, and they took down the server.

But that is what is going on. We have got to find a way to deal with this. Now, right now these discussions are going on in the first two goals. That is, the broadcast flag and plugging the analog hole.

We need to begin continuous negotiations with the information technology people, with the consumer electronics people to find a solution. I cannot believe that there is not some two young nerds somewhere in a garage in San Diego who do not have the solution right now, just as Mr. Hewlett and Mr. Packard did, just as Mr. Jobs and Mr. Wasnowski did some years ago. It is out there somewhere, and we have got to find it.

Finally, what I want Mr. Perry to do, and I will join him in this, let's don't go back and dredge up the past. None of us is flawless. I am willing to talk to you about that, because the facts are all wrong. I think I will do it right now.

We were never against the VCR. We were trying to establish copyright infringement. So then we could get a copyright royalty fee on blank cassettes. By the way, Mr. Chairman, copyright royalty fees are resident in just about every country in Europe and in Asia today in which they take a little fee on every blank tape you buy, and they give that money back to the creators to compensate them in part for their losses in piracy.

And at that time I predicted—I said, "This will create piracy." And guess what? We are suffering from \$3.5 billion a year right now in analog piracy on the VCR. But never did we want to get rid of the VCR. I mean they accuse us of a lot of things, but there are some smart people in the motion picture industry, and they are not fiscal lunatics. They understood what this issue was all about.

So let us get rid of that. I want to put that on the record so next time somebody says, "Well, Valenti said it was the Boston Strangler." By the way, I did say it. It was a picturesque phrase. I really liked it at the time. And if I had the opportunity I would say it again.

Having said all of this, I think what we need to do, and a lot of people at this table and others are already doing it. Let's get rid of all these hostilities. Let's get rid of all of our rigid conceptions that might be wrong, and let's do what they do in the Congress, and that is when there are opposing views in the Congress, you sit down and you try to work it out. You try to make compromises. You try to find some place to bring the extremes into the center.

That is what we have to do, and we have to do it without antagonism. We have got to do it in good faith. We have really got to do our dead level best to do this. And I have nothing but praise for the information technology group and the consumer electronics. I believe that they are really moving with us in trying to find an answer to this.

Thank you, Mr. Chairman.

[The prepared statement of Mr. Valenti follows:]

PREPARED STATEMENT OF JACK VALENTI, PRESIDENT AND CHIEF EXECUTIVE OFFICER,
MOTION PICTURE ASSOCIATION OF AMERICA

If You Cannot Protect What You Own, You Don't Own Anything!

A brief report concerning the dark underside of Internet piracy as well as the possibility of a cleansing redemption to benefit the American consumer

On behalf of the member companies of The Motion Picture Association of America

This document sets forth the goals that the American movie industry urges the Congress to seriously examine. The future of these unique creative story-telling works is in danger of being shrunk and squandered by an increasing thievery on the Internet. We cannot stand mute and observe the slow undoing of a formidable American economic and creative asset.

The Economic Worth of the Copyright Industries

What kind of asset is at stake here and what does it mean to this country? The facts are these: The Copyright Industries (movies, TV programs, home video music, books and computer software) are America's greatest trade export prize. They are responsible for some five percent of the GDP of the nation. They gather in more international revenues than automobiles and auto parts, more than aircraft, more than agriculture. They are creating NEW jobs at three times the rate of the rest of the national economy. The movie industry alone has a SURPLUS balance of trade with *every single country in the world. No other American enterprise can make that statement.* And all this at a time when the country is bleeding from a \$400 Billion trade DEFICIT.

Which is why we come to you with a clear statement of what is needed to preserve this extraordinary economic/creative engine of growth in a broadband world.

Broadband (high speed, large pipe entry to the Internet) is an OPPORTUNITY to make available to consumers another delivery system for transporting visual entertainment to their homes. This means more freedom of choices for consumers.

As you may surmise, producers of visual entertainment are enthusiastic, ready and eager to offer their creative works on the Net. And to dispatch those works LEGALLY, at a fair and reasonable price to those American homes who choose to view them. It should be noted that 'fair and reasonable' will be defined by the consumer and no one else.

But there is an obstacle. Consider this: The cost of making and marketing movies, for example, has risen to nerve-shattering heights. In 2000, the total cost to the major studios for making and marketing their films was, on the average, an astounding \$82 Million! Only two in ten films ever retrieve their total investment from U.S. theatrical exhibition. Those films must journey through various marketplace sequences: airlines, home video, satellite delivery, premium and basic cable, over the air TV stations and internationally. They must make that journey to try to break-even or ever make a profit.

Today as that movie travels its distribution compass course, it is exposed to great peril, especially in the digital environment. If that movie is ambushed early on in its travels, and then with a click of a mouse, and without authorization, sent hurtling at the speed of light to every nook and cranny of this planet, its value will be seriously demeaned. Who on earth would continue to invest huge sums of private risk capital when the chances of redeeming that investment become remote, if not impossible?

Broadband entices and allows piracy of films and TV programs on a massive, unprecedented scale. And at this precise moment, movies and other visual entertainment works are in ever-multiplying numbers swarming illegally throughout so-called file-sharing sites (a more accurate description would be "file-stealing" sites). And this is in an environment where most people's broadband connections are not fast enough to enable speedy downloads of these illegally copied files (funny how people will wait a long time for something when it is free!).

Thus, the problem will only get worse as the speed of broadband increases. University-based piracy provides especially troubling evidence of this phenomenon, because university ethernet systems are state-of-the-art, large pipe, highest speed broadband connections. These university systems are over-run and heavily burdened by student downloading of pirated movies and TV shows. It's easy. It's fast, and it's free. It is also illegal.

Gresham's Law works its will in such a landscape. Just as cheap money drives out good money, so we are afraid that pirated movies will spoil the market for broadband delivery of high-quality films with superior fidelity to sight, sound and color once these high-speed connections proliferate. A consulting firm has estimated that more than 350,000 movies are being illegitimately brought down EVERY DAY.

Who would choose to pay for movies when you can have them delivered to you FREE? It is this infection which corrodes the future of creative works.

But if through technological measures, producers of visual entertainment could defeat the spread of pirated movies populating 'outlaw' Net sites, the Net would be cleared of illegal debris and able to hospitably welcome legitimate, superior quality entertainment in a user-friendly format. The Consumer Electronics and Information Technology industries have been working cooperatively with us to find methods to deliver our legitimate content in a more secure digital environment. The largest beneficiary of such an environment would be American consumers.

The THREE GOALS I outline below are designed to protect valuable creative works in visual entertainment, and at the same time expand the reach and attraction of broadband in the consumer society.

How to achieve these GOALS? First and foremost both the Senate Commerce Committee and the Senate Judiciary Committee must be involved because these goals are umbilically connected to the oversight jurisdiction of both Committees.

Our Three Goals, whose Objective it is to Protect movies, TV programs and other visual entertainment on the Net.

Goal One: to create a "broadcast flag" which would prevent broadcast programs exhibited on over the air TV stations from being re-distributed on the Net, which is a form of thievery.

Because just about all such TV creative material is in "deficit," (that is, its production costs are higher than the license fees it receives from the network) TV series and other high value broadcast material must go to 'syndication' when they leave the network. Syndication means those programs must be licensed to local and international TV stations in order to recoup their total investments, and hopefully make a profit. If such programs are re-distributed on the Net while they are still on the network, it shrinks and decays the earning power of that program in the syndication market. Discussions are now going on which could result in a mutually-agreed upon accord to construct a 'broadcast flag.' Praise is due all those Information Technology, Consumer Electronics, and Movie industry companies for these good faith discussions which I pray will end in a unanimous accord.

Action: To achieve this important goal will require congressional or agency action to implement the accord. In the absence of such an agreement, a narrow mandate may be necessary.

Goal Two: To "plug" the "analog hole."

This is technical jargon. Let me sort this out in plain English. All digital protection designs can only work in a digital environment, which is the environment of the Internet. When a digital signal comes down to a TV set in the consumer home, that TV set in 95 percent or more of American homes is an "analog" set. This means the digital signal is immediately transformed into an analog signal in order for the consumer to watch it. If the analog signal is then converted back to digital, it cannot be protected by any known protection device. This is called "the analog hole." One way to 'plug the hole' could be through a 'watermark detector.' The 'watermark' is an ingenious design, which commands the signal converter in the TV set to respond to the instructions on the movie. This can be accomplished through a concord agreed to by the Information Technology, Consumer Electronics and Movie industries.

Action: To reach this goal, Congressional assistance will be necessary.

Goal Three: To stop the avalanche of movie theft on so-called 'file-sharing' Web sites, such as Morpheus, Gnutella, etc. (the more accurate name would be 'file-stealing' sites).

Unhappily, neither the 'broadcast flag' nor 'plugging the analog' hole will stop this relentless thievery that is endemic.

We have not hesitated to spend considerable resources to fight these sites and services in the courts. But litigation alone cannot possibly provide an adequate solution, particularly as these services become increasingly decentralized, fragmented and anonymous. Constructive discussions need to take place with the Information Technology and Consumer Electronics industries to determine how best to develop effective technical solutions to crush online theft of our valuable creative works.

Action: Continuous negotiations must take place to develop technical solutions, which may require legislative enforcement.

There is one truth that sums up the urgency of this request to the Congress to enlist in the battle to preserve and protect an American economic and artistic asset which attracts the enjoyment, the patronage and a most hospitable reception by every creed, culture and country throughout the world.

That truth is: *If you cannot protect what you own, you don't own anything.*

The CHAIRMAN. Thank you, and I will join in with your observation with Mr. Perry, because Mr. Perry, you are right as rain, we are going to protect the VCR. You are going to be able to record that particular program for home use on your VCR. I do not believe you could get one vote out of 535 otherwise. So our bill, proposed bill, protects the recording of the program for home use all within the university for research or educational purposes.

Mr. Bechtolsheim should have been included with all of those research individuals, Mr. Valenti, because he developed I think Sun Microsystems. Do you think Sun Microsystems could have been created without the Stanford Research Institute financed by this government that you want to get the government out of the business?

**STATEMENT OF ANDREAS BECHTOLSHEIM, GENERAL
MANAGER AND VICE PRESIDENT OF CISCO**

Mr. BECHTOLSHEIM. No, I should have mean meant to point out that the government played a very important role in the creation of Internet standards. The original TCPIP transmission standard was in fact funded by the Defense Department Advanced Research Project Agency, and became the basis for the Internet as we know it today.

So I think the government through this type of funding played a hugely important role in the creation of essential standards for the—open standards for the business today.

The CHAIRMAN. Thank you, Senator Boxer.

Senator BOXER. Well, this has been really one of the best hearings, and that is really why I stayed here. Because if they are not getting anywhere, I'm not learning anything, I go to another hearing. So this has been really excellent.

And let me say again, as all of the pressures come down to bear at this hearing. It is pretty clear to me where we are going. I think Mr. Valenti puts his finger right on the button when he says, "Look, we have got to get past it, and we have got to just get together."

And I look at it this way, because in many ways it is about America in the world, our economic leadership in the world. We need to come together. Sometimes we compete, and sometimes we have to overlook these differences, and the short-term interests and come together. This is one of those moments.

And I really thank my Chair. I just wanted to say to Mr. Perry who I think I was watching during the first panel was getting agitated at some of the things. When you put up your chart, Technology Threat or Growth Engine, there is not one person I do not think in this room, be they in the entertainment industry, or up here on this panel or staff that thinks that technology is not a growth engine and the way to our future. There is complete agreement there.

But that is not what this hearing is about. I will tell you what the threat is. The threat is piracy. The threat is not an industry. That is not the issue. So if you thought that any of us thought that, please put that to rest. We do not see it that way at all.

As a matter of fact, we are looking to you to help solve this incredibly important problem that we are facing in a fair and just way.

And to Mr. Meyer, I just want to say I thought your presentation was exceptional. I really have to say I mean you just talk straight from the heart and did not mince words.

And you are basically saying—and I want to make sure I understand—that the reason you do not see more digital content is because this problem has not been solved yet.

STATEMENT OF JAMES E. MEYER, SPECIAL ADVISOR TO THE CHAIRMAN AND FORMER SENIOR VICE PRESIDENT/CHIEF OPERATING OFFICER, THOMSON MULTIMEDIA

Mr. MEYER. That is correct.

Senator BOXER. Am I right on that point?

Mr. MEYER. I just, on the record, this new technology does allow a great deal of temptation. And that temptation on many people's parts. And that is the heart of this argument, OK, is who can control what?

I think it is pretty easily agreed upon what we are and are not going to allow, and then getting the technology in place to do that. And a TV or a set-top box I think can be done. Will consumers ultimately buy a lot of digital TVs? I do not know. My company and Mr. Perry's company have bet hundreds and millions they will.

Senator Boxer I have one.

Mr. MEYER. And I believe they will. But they will not without the spirit of Hollywood.

Senator BOXER. Right.

Mr. MEYER. They do not on anything.

Senator BOXER. I mean I watch, because it is so fantastic, I watch, you know, rivers going down and falling down into streams, and that is about what you get to watch.

Mr. MEYER. After an hour it gets old.

Senator BOXER. Yeah. I mean there is just so much of that.

I want to take up what Mr. Meyer told us, because I think it is interesting. If we together, meaning you hopefully, can resolve this problem, it is not only going to stop piracy and take care of that problem and thievery, because it is just the same if you steal my purse is to steal someone else's work. I hope we agree on that.

So you solve that. And that is the right and just thing to do. And then you get into protecting investors' dollars, but that is not my business. My business really is what the constitution says about the rights of property.

But you also will hopefully unleash this industry that has been sitting there, this Direct TV, this digital TV, because they are saying to us, the people who are in the business, the content is not coming. So it is not just—

So what you are trying to do, Mr. Chairman, is not only right a wrong and a problem, but you will also unleash some positive things as a result. I have learned an enormous amount today.

And again I make my plea to every one of you here. Please fix this so that it happens in the private sector. We can ratify it. We can help you make sure it is in force, but we are asking you to step up to the plate. No one is going to get everything he or she wants. Life is not like that. Believe me. I have passed a lot of legislation that did not look like the one I introduced. I have to compromise.

This is that moment. And if you step up to the plate, trust me when I say the American people appreciate it. I think our economy will take off as a result of it. And in the long run, in the long run, everyone is going to prosper, even though some of you think you will not. In the long run everyone will prosper. I truly believe that.

**STATEMENT OF ROBERT PERRY, VICE PRESIDENT OF
MARKETING, MITSUBISHI**

Mr. PERRY. Senator Boxer, thank you very much for bringing up my squirming in my seat while sitting in the audience. It is due to a number of things.

I would like to make a couple points very clear on behalf of the HRRC, the company I represent, and as well as our trade association of which I am a board member, the Consumer Electronics Association.

We absolutely abhor the concept of any intellectual property, whether it is creative, electrical, whatever being stolen. People who share files and do things of that nature are stealing. They are not compensating the copyright holder for all their investment and creative genius, and we find that offensive.

My company has spent tens of millions of dollars in direct subsidies to U.S. broadcasters to bring HDTV content to television. That is tens of millions of dollars in direct cash payments to U.S. broadcasters to make HD content available. Every HDTV we sell that has a tuner, an integrated tuner, or a digital connection to a recording device incorporates a copy protection system that prevents the content from going on the Internet. We absolutely support it.

My company has also spent hundreds of millions of dollars trying to negotiate in advance through all of these issues. I believe that this hearing today, the interest of the chairman, the interest of all the representatives clearly places pressure to get that accomplished.

No one in this room wants this situation solved more than I. I have got hundreds of millions of dollars of investment that has to go forward based on this country's transition to digital television.

The squirming in my seat surrounds a couple of issues which I think perhaps are not yet resolved. With just one moment I would like to point them out.

The FCC is preparing to rule to require our industry to adopt a license agreement that is being put forth by the cable industry. That license agreement is known as the FILA license. That license basically talks about how a digital TV can talk to a cable system. That license which is supported specifically by the content community absolutely requires content encoded output switching.

In other words, the creator of a piece of content, perhaps even being created in another country, when that content is being broadcast, can turn off the outputs of the television so it cannot be recorded. That issue has not been resolved. The technical issue in protecting content that is being broadcast is absolutely resolvable. As our spokesperson from Intel mentioned, we have the technology to do that.

Part of the question he was asked, however, perhaps is less clear. The question he was asked was: Can you prevent all the file shar-

ing on the Internet today? Of course not. The reason for it is very simple. It is not up to the IT industry or the CE industry to go into theaters and arrest people with camcorders. It is not up to our industry to control how film is duplicated in production houses.

When Mr. Eisner talks about stuff being on the Internet before it is broadcast, that is not an IT problem. That is not a CE problem. Somebody got the film before it got broadcast. We will put all the safeguards that are commercially viable and reasonable based on all of our discussions and consensus building of which we have made a lot of progress. We will put those in our products. But we cannot stop stuff that never got into the system.

So if a movie gets stolen, we have no way of controlling that. And it is unfair perhaps to place that burden on the CE and IT industries. In fact, if you think about it most of the commercial piracy that occurs does not occur with consumer electronics devices.

If I want to steal a high-definition movie, I put a commercial satellite receiver on a truck. I receive the movie. I store it on a disk. I take it out of the country for duplication. It is stolen. I did not use a TV or VCR to do it.

We will work very hard toward this goal. We have poured huge resources into it.

One of the additional frustrations I think that we have not really voiced we have talked about is the goal keeps moving. Even today you heard from Disney and Fox a divergence of opinion. Disney has been in the copy protection working group meetings for many years. Perhaps Mr. Eisner himself has not attended. That is rational. He has teams of people to do that for him. They have been in that. There is a divergence of opinion of exactly what they want.

Warner Brothers and Sony have already agreed. Those studies have already agreed to some standards. Those are being implemented by companies like myself and others. We are getting there.

What we need to do is resolve this last issue. How to protect broadcast content over the air from getting on the Internet. Generally, if I can be so bold as the co-chair of that committee, we think we have a technical solution that is very low cost.

And by the way, there is no chip involved. There is no such thing as a chip. And it is not a cost issue. We have a technical solution.

What we are doing now with Hollywood, IT, and consumer electronics' companies, and with very strong support from the MPAA, I might add, what we are doing is discussing exactly how do we do it with the least possible interference into these products without impinging on consumers' rights. And how do we make it happen very quickly?

We believe by March 31st we will have that. And at that time we may need to come to the FCC for some very narrow regulatory rulings so that this would apply to everybody, so there are in fact no scoundrels taking advantage. Because it is not companies like ours, by the way, that provide methods for stealing stuff. We are too easy of a target. It is small companies that skirt the law.

If the FCC does not have the regulatory authority, once we reach consensus about the commonsense way to deal with this issue, like we have all the other issues like DVD, we may need to come here to Congress to ask for your support for some very narrow, limited legislation that would require the implementation of our consensus

agreement so that in fact we give everyone exactly the protection they have asked for.

But broad over-reaching legislation that tries to hit it with a shotgun unfortunately would damage some other technologies that have not yet been created. Every time we have created a digital technology, ladies and gentlemen, we have created a solution together. I really believe we will be able to do it this time around, and I applaud this willingness to continue talking. But he has misstated something, and he did it inadvertently, not deliberately, that I need to clear up.

Neither Mr. Eisner, nor Mr. Chernin, nor I are blaming the consumer electronics' people who do theft in our theaters or steal something. Not at all. That is not the issue.

The issue is what happens when somebody does steal something, however it is done, and throws it on the Internet to go into the Morpheus and the Grokster, and all of these Gnutella anonymous, fragmented and very difficult to find sites? That is the issue.

In other words, when that is up there unprotected, and somebody has to bring it down on file sharing, is there some technological way we can then baffle the entry of that stolen movie going to somebody else's hard drive? We are not blaming you at all, Mr. Perry. I think you guys have done a great job. But you have misstated what the issue is. And that is what we are talking about.

When you have 350 to 400,000 movies being brought down illegally every day, and it is broadband growth—by the way, the one moat that surrounds our castle now that is keeping us from being inundated is only about nine-and-a-half to ten million out of the 66 million computers homes are on broadband, Mr. Chairman.

And as broadband begins to grow, although it is growing very slowly now, because there is nothing up there, as you pointed out. You do not need broadband for e-mail, or instant messaging, or text, or references, or anything like that. You can do that with a 56K modem.

But as broadband grows, the threat to us becomes more onimous, more perilous and more difficult to avoid. That is why we need the help of these very, very smart people in technology to help us.

And by the way, whatever they develop we are going to buy by the long ton so everybody benefits, as Senator Boxer said.

The CHAIRMAN. Senator Smith.

Senator SMITH. Thank you, Mr. Chairman. I join Senator Boxer in thanking you for this hearing. It is been one of the more enlightening that I have ever attended.

Mr. Perry, I think you have defined very clearly for me how difficult a cul-de-sac we are talking about. And I now see that it is a moving cul-de-sac, and everybody has a different interpretation as to the dimensions of that cul-de-sac.

Your description of the box that people would buy, and the inability to keep it, it would go back, I think that is a real consumer irritation. That is a problem. We have got to figure that out.

What we have got to also do is figure out how to stop—allow it to happen in the home, and to be kept in the home, but stop it from going to somebody else's home. And I do not know the engineering to make that possible. I think you are telling me it is impossible.

Mr. PERRY. Yes, sir. That is in fact not only possible, but it is implemented on the products that my company has been selling in the marketplace.

Senator SMITH. OK.

Mr. PERRY. The issue that Mr. Valenti just brought up is the issue of content that has never had any form of protection system applied to it. That gets hijacked before it is broadcast. How do we clean that off of the Net? And the reality is, is that it is a little bit like a piece of stolen art or anything else that is stolen. Once it is stolen, it is very hard to get it back into the barn.

Senator SMITH. And are you saying that there is some technology that the content industry, the entertainment industry can apply when it leaves their studio that they can protect it? Do they have the technology to do that?

Mr. PERRY. I believe, Senator, that there are technologies. So let me please explain just for a moment. There are really two segments to this.

If a studio produces a master negative or film of a movie, and they lose control of it, and it gets pirated, there is nothing that can be done by anybody with any magic wand. It is a fact. Because frankly it goes outside of the United States. And regardless of what legislation we pass, it will not matter. It will be entered into the Internet.

There is however a transition that is occurring in Hollywood where more and more films, instead of being created on films, are being created digitally. And as they are being created digitally, there are certain technologies which we are discussing in the copy protection working group that could be applied to the master version of that videotape that would keep it from going out into the Internet.

Now it still does not stop when somebody crawls, some nefarious person crawls into a theater with a camcorder. There is simply no tool we can use to do that.

Senator SMITH. That brings me to my only other question, Mr. Chairman, and that is with respect to your chart. I want to understand it better. Are the green lines on the graph, are those the profits of the entertainment industry?

Mr. PERRY. They are the revenues of the entertainment industry, and in general their profit margins have remained relatively constant as an industry over this time. So they would reflect increasing profits as well.

Senator SMITH. In spite of the theft.

Mr. PERRY. Yes. Although I do want to point out that regardless of how profitable they are, the stealing of property is absolutely wrong. And even if you can cover it with growing profitability, it is still wrong. It still needs to be stopped.

Senator SMITH. Well, that is the point I wanted to make. I was afraid—and I am glad you corrected it, because I think we are leaving the impression that as long as they are growing we can codify and support theft. And I think, Jack, you would argue that if there was some protection here, that growth would be even greater.

And I am saying as a Republican, I think growth is good. I think a Democrat would say that, too, our Chairman.

And I want more of those green lines going out. I do not want less of them. That is not to be ashamed of, that is to be encouraged. And I thank the IT industry for helping that to grow. We just got to figure out how to have both of you grow, because you totally need each other.

Mr. VALENTI. That is precisely correct, Senator. And I might add to go back to what the Chairman said. We are also talking about not taking away one jot of a right of what a consumer does in their home today. You made that point, Mr. Chairman, and I want to confirm it.

See, what we do not know, how long will there be DVD? There will be something else. For example, digital. Instead of coming to your computer, you will have a little line going from your computer into your television set. Or you can do it right direct to your television set, and bring stuff on the Internet, bypassing the computer completely, and maybe not even need DVD in the future.

There are all sorts of new ways to have movies into the home, and I applaud that. The more choices you give to consumers to rent or buy movies at a fair and reasonable price—a phrase that will be defined by the consumer and not by the movie distributor—that is wonderful.

But I am saying to you like Banquo's ghost right outside of the shadow of our dinner table that there is the danger of the pilfering of this material as it is ambushed.

Let me just make one other statement. The average cost in the year 2000 to make and market a movie made by a major studio, one of the seven members of my association, the average cost is \$82 million. Only two out of ten movies ever get back their investment, much less a profit, from the United States theatrical exhibition.

That means that a picture must journey through airline, home video, Blockbuster, premium cable, pay-per-view, basic cable, over-the-air television, and international in order to try to retrieve this investment and hopefully make a profit.

Now if it is ambushed early in that journey, when you are setting out you are going to cross the United States before you get to the Appalachians, the wagon train, the bandits take it over. And as broadband grows to 20, 30, 40, 50 million homes, you can see, I do not have to draw a chart for you, is the possibility of peril there that causes us many Maalox moments out when we make movies.

Senator SMITH. So those green lines disappear. I mean they go away at some point if we do not figure this out.

Mr. VALENTI. That is right. Nothing less, Mr. Chairman and Senator Smith. And as a businessman you know that, and we all know it. While those lines are going up now, I am not looking at the past. I want to look at the future.

How do we keep those green lines growing, which is in the long-range interest of this economy. It is in the long-range interest of the American consumer that all of these choices be made available to him and her. And this is what it is all about.

Senator SMITH. Mr. Chairman, I think these two industries are in the long-term interest of the United States. So I plead with you, as my colleagues have, that we get this figured out.

The CHAIRMAN. Well, thank you very much, Senator. I hope we get together.

What happens? Let's say they do not get together, Mr. Valenti. What happens?

Mr. VALENTI. Well, that is a mystery wrapped in an enigma inside a riddle. But eventually—

The CHAIRMAN. And assume we cannot do anything about it. I think I can. Do not worry about it.

Mr. VALENTI. I know.

The CHAIRMAN. Go ahead. The worst case if nothing happens.

Mr. VALENTI. I think that we have to go back and do some more talking. But if both sides come to the agreement that there is an impasse, we simply cannot agree, well that does tend to concentrate the mind wonderfully. And you then have to say, "I have to go either to regulatory agencies or the Congress for help and assistance in whatever they can do. I do not know any other option.

The CHAIRMAN. Well, The Chairman of the regulatory agency believes that his authority is only to get rid of every regulation. So do not worry about that one.

I have got to thank you for the very valuable contribution, Mr. Bechtolsheim, Mr. Perry, and each of you. Mr. Meyer, if this had been a court of law, and I would have been a judge, I could have directed a verdict after what you said. You brought it right—you encapsulated it. You had it first. And Mr. Valenti, you are always the best. I would buy a ticket to hear you.

Thank you all very, very much. The Committee will be at ease subject to call of the Chair.

[Whereupon, at 12:45 p.m., the hearing was adjourned.]

