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STAFF DISCUSSION DRAFT ON THE TRANSITION TO DIGITAL TELEVISION

HEARING

BEFORE THE

SUBCOMMITTEE ON TELECOMMUNICATIONS AND THE INTERNET

OF THE

COMMITTEE ON ENERGY AND COMMERCE

HOUSE OF REPRESENTATIVES

ONE HUNDRED SEVENTH CONGRESS

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STAFF DISCUSSION DRAFT ON THE TRANSITION TO DIGITAL TELEVISION

WEDNESDAY, SEPTEMBER 25, 2002

HOUSE OF REPRESENTATIVES,
COMMITTEE ON ENERGY AND COMMERCE,
SUBCOMMITTEE ON TELECOMMUNICATIONS
AND THE INTERNET,
Washington, DC.

The subcommittee met, pursuant to notice, at 10 a.m., in room 2322, Rayburn House Office Building, Hon. Fred Upton (chairman) presiding.

Members present: Representatives Upton, Cox, Deal, Shimkus, Wilson, Pickering, Fossella, Bass, Terry, Walden, Tauzin (ex officio), Markey, Eshoo, Engel, Green, McCarthy, Luther, Stupak, Harman, Boucher, Brown, Sawyer, and Dingell (ex officio).

Staff present: Jessica Wallace, majority counsel; Linda Bloss-Baum, majority counsel; Will Nordwind, majority counsel; Jon Tripp, deputy communications director; Hollyn Kidd, legislative clerk; Andy Levin, minority counsel; Brendan Kelsay, minority professional staff; and Voncille Hines, minority staff assistant.

Mr. UPTON. I understand we are going to have votes on the House floor, three votes about 10:30 or so, so I want to get started. And I would say for those of you in the audience we did try to get the big house downstairs, and there are a number of things going on, including the Energy Conference. So I feel a little bit like a Chicago Bear fan having to travel from Soldier Field to Champagne, moving from downstairs to upstairs. So, hopefully, this will be somewhat temporary.

But good morning. Today, we are taking a significant step in our efforts to get the digital television conversion on track. It is important to note that today is a legislative hearing on a staff discussion draft. Chairman Tauzin, Ranking Member Dingell, my friend, Mr. Markey, and I agreed that this is the best approach to inform the subcommittee's decisionmaking process as we seek to clear each of the tank traps that stand in the way of a successful digital invasion.

D-Day, Digital Day, is December 31, 2006 or when we reach 85 percent penetration. There has been much accomplished, but, obviously, there is still a lot of work remaining. There is perhaps no telecommunications issue which has consumed as much of our time than the digital transition. This is our third hearing on this issue in this Congress where I have participated with Chairman Tauzin in addition to six lengthy industry roundtables over the course of the last 10 months.

In addition, Chairman Powell launched the DTV Task Force, which has held numerous industry hoedowns that he put forward a voluntary DTV transition plan. And the Commission recently issued a DTV tuner order, sometimes called the Markey DTV order, and there are numerous rulemakings that are pending. Obviously, industry lawyers and trade associations have attempted to hammer out agreements amongst themselves as well.

We all had hoped that our roundtables, industry negotiations and the FCC action would have eliminated the need for Congress to have to step in any further, but while these negotiations and recent FCC actions have yielded some good results, many obstacles still remain. And given how this issue affects almost every American's living room, Congress cannot afford inaction and simply stand idly by while the sands of the hour glass run out. Consumers already are confused and that is unacceptable. It will only get worse if we do not quickly establish the rules of the road.

Our efforts are all about making sure the digital transition happens in a timely and orderly fashion to ensure that the Consumers will, as seamlessly as possible, get the benefits of digital television. Of course, if we achieve this goal, not only will the consumer benefit but also public safety, which has an interest in utilizing the broadcasters' return spectrum for critically important communication. There are many industry stakeholders who all have a hand in responsibility in achieving that goal. Broadcasters, networks, cable providers, content providers, consumer electronics manufacturers and high-tech manufacturers, just to name a few.

What we hope to accomplish today is to get input from the industry and our consumer advocate on the staff discussion draft. To be sure, there are some thorny issues addressed in the draft, but we believe addressing these issues head on will provoke the best discussion and in turn provide us with the best education and consensus as to how to put together a balanced, bipartisan piece of legislation which we can introduce and move through the subcommittee in the not too distant future.

I want to thank all of our witnesses for being here today, and I ask you not to simply just tell—to not just simply tell us if you vigorously oppose something in the draft but rather if you vigorously oppose something. I hope you will just as vigorously help this subcommittee find creative, outside the box solutions that will spur the transition. Since all of our industries are stakeholders, it is clearly in everyone's interest that the transition succeed.

Without a doubt, we are cognizant of the realities of the legislative calendar, but no one should read into this that our resolve to get these issues settled is anything less than iron clad, and we need to be prepared to move legislation. Moreover, no one should read into this that they should sit back and wait for Congress to act. We need all industries and the FCC to keep plugging away. Time is of the essence and we will continue riding you hard, not because we enjoy it but because that is in the best interest of the consumer.

I want to commend my colleagues, Mr. Tauzin, Dingell and Markey for their work and their leadership on this draft. In addition, I want to thank all of the staff—Jessica, Linda, Hollin, Andy, Brendan—for their excellent skill and expertise in putting together

the discussion draft and helping the subcommittee and its members tackle these very complex issues. And I yield to the ranking member of the subcommittee, my friend, Mr. Markey.

Mr. MARKEY. Thank you, Mr. Chairman, very much, and thank you so much for calling this hearing. There are so many familiar faces out here. It is like old—isn't it great to all get back together again? I mean, you know, in a world where so many things change, isn't it great to know we still have this issue that keeps us all together.

And it is 15 years and I think we might even have a 20th and 25th anniversary on this issue as well, which is really, I think, in a lot of ways in an era of uncertainty something that is reassuring that we will maintain these relationships and I thank each of you for coming here because without question we are talking about the future. We are talking about the next wave and how we cut this gordian knot, how soon we cut it all, to a certain extent, determine how quickly we can move to a next generation of, we will call it, NASDAQ revival.

The digital television transition is woefully behind schedule, and quite simply will not conclude by the original target date of 2006. It is also apparent that the slowness of the transition is holding back two important telecommunications revolutions. First, the lack of meaningful progress in DTV transition impedes the growth of various industries in the interactive television marketplace, including high-tech manufacturers, software engineers and content producers. Second, the fact that broadcasters will not return to the government their current analog broadcasting frequencies any time soon means that a new generation of wireless technologies and services is also thwarted from reaching the marketplace. Both the interactive TV and wireless revolutions that are unnecessarily delayed by the glacial pace of the DTV transition could greatly contribute to economic growth, innovation and job creation.

We must admit that at its core the DTV transition represents a government-driven policy, not a purely market-driven phenomenon, and it is therefore imperative that government create the conditions and environment for policy success, especially given the current economic slump. It is important for the FCC and the subcommittee to follow through on the DTV policy we set in motion several years ago in ways that serve consumer interest.

Government action to accelerate the DTV transition would send a strong signal to entrepreneurs and investment community that Federal policymakers are committed to creating an environment where the technology sector can once again drive growth and prosperity in the American economy. Failure to do this is unfair to consumers and to taxpayers but is also unfair to the various high-tech industries with a stake in the future of television and a new generation of wireless services that could operate using frequencies that the broadcasters ultimately give back.

The FCC took an initial step in putting the transition back on track by action it took in August to require digital tuners in all television sets. This mandate which I originally offered as a proposal in the subcommittee back in 1997 will go a long way to making the transition successful, especially for those households in a given marketplace that do no subscribe to pay television systems. Con-

sumers who purchase televisions in the future must have the ability to pick up off the air DTV signals or easily connect TV sets and receive digital broadcast channels over the cable or satellite system to which they subscribe.

Although the Commission has mandated digital tuners, it failed to tackle the so-called cable tuners, which would also enhance the capability of consumers to obtain the digital broadcast stations carried over cable systems and thus spur on the transition. Moreover, the Commission has thus far not properly implemented the unbundling provisions of the 1996 Telecommunications Act for set-top boxes, cable modems and other equipment. Both of these items merit renewed attention, in my view, in order to get the DTV transition back on track and to reinvigorate the telecommunications sector of the economy.

And, finally, I want to mention the important role that public broadcasters will play in the digital television transition. Many of the public broadcasters around the country are further along in the transition than a significant number of commercial broadcasters. Such public stations have been clear in their determination to maximize the versatility that the digital use of the spectrum accords such stations in their service to the country. Because public broadcasting stations indisputably serve the public interests with a full range of educational content, news and community information and children's television, I believe that they must have a clear, non-negotiable right to carriage on cable and satellite systems for all of the content that they broadcast free to the public.

In addition, because such stations are non-commercial and cannot air advertisements to support their costs, the public broadcasting community ought to have the financial assistance they need to convert from analog to digital in all of the communities that they serve.

In many ways, Mr. Chairman, this subcommittee was instrumental in beginning the transition to high definition TV for the country and certainly in shifting the debate from analog HDTV to digital TV. This subcommittee, therefore, will have a special role in bringing the digital television policy of the country to a successful and timely conclusion. This hearing will provide members with an excellent opportunity to explore all of these issues. This is a very, very high powered panel that you've gathered here today. It would be difficult to imagine one that had a greater likelihood of clarifying these issues for our country. I congratulate you on the panel, and I yield back the balance of my time.

Mr. UPTON. Gentleman's time has expired. We recognize the chairman of the full committee, gentleman from Louisiana, Mr. Tauzin.

Chairman TAUZIN. Thank you, Chairman Upton, and accolades here too for the great work you've done in bringing us to this point and to all of you who helped work on the staff discussion draft that is before us today. I want to welcome you all. To my friend, Mr. Markey, I want to wish you a happy 10th anniversary in this transition, but I also want to tell you there will not be another one. We are not going to be sitting here 10 years from now talking about this. Either we will work it out collegially and collectively as we have tried to do through the roundtables or we will work it out leg-

islatively and regulatorily, but it will be worked out. And American consumers will have a smooth transition to the digital age.

That is a commitment this committee has made when we started this transition. And Mr. Markey knows we are going to finish it. And Mr. Upton is committed to that, and I am committee to that. So what we challenge you today with is what legislation might look like and it is full of tension. It is designed to create tension, designed to challenge you, designed to demonstrate what Congress just might do in a lot of these area if we can't get very quick, very soon agreement of all the parties.

I want to make it clear this is just a discussion draft, of course; it is not legislation yet. And no one should look upon it as legislation. It is not a bill, it is a discussion draft. It is designed to do that, elicit discussion. And we don't enter this stage of the process lightly, I know you know that. We have asked the FCC earlier which was tasked with the job of shepherding the transition through on behalf of the consuming public and all the industry players. And, frankly, there are too many issues that remain unresolved. And consent and agreement have not gotten us past some of those hurdles. FCC is reengaged. I am very pleased with Chairman Powell and his commitment to reengage, and I urge him to move as quickly as he can because time is running out on us.

When we look at the issues, the daunting task of settling these issues in the time remaining before the year 2006 when this transition is complete, the real focus should be on consumers. So let us talk about what consumers expect out of this and what this staff draft tries to do.

First of all, consumers reasonably expect that in the future their TVs will receive broadcast signals just as they do today. And the FCC decided to ensure this with its DTV tuner in August and that the cost of incorporating a DVT tuner into television sets should fall quickly as all sets include these tuners, and the 5-year phase-in schedule does not require the smallest and the least expensive set to include tuners until 2007, by which time the cost of this technology will undoubtedly be considerably lower in real dollars. The staff discussion draft affirms this approach by the FCC.

Second, consumers reasonably expect that consumer electronics equipment, including the TV sets, will work with the cable system. And given that over 70 percent of consumers receive their broadcast signals via cable today, that makes a lot of sense. Reportability of consumer electronics equipment and nationwide inoperability with cable television systems and digital television receivers equivalent to today's cable-ready analog televisions is an essential element to ensuring consumer acceptance and sufficient penetration of DTV. And so the staff discussion draft requires this. You know, I buy my equipment in New Orleans and I moved to Washington, DC to come to work for the good folks of Louisiana. It ought to work here and visa versa anywhere in the country.

Consumers reasonably expect to be able to purchase a reasonably priced basic cable-ready digital television set, and the staff discussion draft ensures that consumers are not forced to buy a Cadillac when all they might want is a Buick or something a little less expensive than a Cadillac. Consumers, in exchange for purchasing new digital equipment, expect to enjoy exciting new content. That

is going to be the driver of this new transition. The staff discussion draft again affirms the FCC's authority in this critical area of transition. Content is key. We all know it. If consumers are going to buy this equipment, sign up to these new broadband systems that are going to move it around, they want something rich and exciting in programming. And the staff discussion draft puts some focus on the FCC's current proceeding, specifically requires it to implement a broadcast flag protection system for that content, so that in the digital age content providers are more willing to put good stuff in the systems.

But the question is what are the limits of that protection? You see, because consumers also expect to be able to continue to enjoy the ability to home record in a digital age, and we affirm this in the staff discussion draft. And we need to determine what companies require in order to release and continue to release quality content and at the same time protect the rights of consumers to fair use of that product, in their homes and perhaps in their mobile systems even. What are the limits of what we can do here? What is workable? What is viable? That is a good debate.

Consumers reasonably expect that when they purchase an HD set they will be able to view HD programming being offered by the network, and the staff discussion draft requires network affiliates to pass through this high definition signal without degradation or downresing to a lower resolution. They ought to get what is being provided for them in the same beautiful fashion it is being provided.

And the transition to digital is going to be a difficult one for consumers, but the staff discussion draft eases the burden a bit by assuring the commercial availability of converter boxes by requiring cable operators to separate security and non-security features of the box, and it stops in its tracks the FCC's rule at the same that would prevent cable operators from offering integrated set-top boxes. Integrated boxes, we believe, may well be the most convenient and less expensive trip for consumers, and at least we ought to give them a choice.

Consumers should be able to make an informed purchasing decision on their equipment and content. The staff discussion requires consumer notice provisions. I would like to personally thank Mr. Boucher, by the way, for his work in this area and for his extraordinary help as we move forward. Thank you, Rick. The staff discussion draft leaves open for now the issue of multicast must-carry. Now, for all of you, what we are talking about, basically, we just gave the broadcasters six megahertz of wonderful new spectrum to do digital broadcasting, and they are not going to need it all to do a beautiful high-definition signal, and they are not going to do HDTV all the time. Sometimes it will be multicasting, more than one channel of broadcasting. Will the cable company have to carry it all, part of it, some of it, what are the lines, what are the distinctions? You see, because a lot of us believe that when we finish this transition, when we tell consumers in America you either got to buy a digital television or you got to buy a box to convert the new digital signal back so your old analog set can read it, that you ought to get something new, something different instead of the old signal you used to get. If all you get is the same old television you

got before, the consumers will be asking everyone one of us, "Why did you make me buy that new box?" So the question is, what new? What in this multicast equation are consumers going to get? What is the pro for the quit and the quo when we get all this done, if I can get that right? What is the quo, I guess, for the quit?

Obviously, the devil is in the details, and some of the details contained in the staff discussion draft are intended to highlight. Some of the sections here are intended literally to create tension among this table and to get you to have a good fight in front of us, a good civil fight, we hope, but literally to make your case, make your points and help us understand the options we face so that if you can't work it out, we can hopefully work it out where consumers come out okay.

So, again, thank you. The roundtables have been great. We did 10 months of them. I think we came a long way, and now we are at this point, and this is the day you tell us whether you really want us to make the cuts or you want to try to make them yourself. Thank you, Mr. Chairman.

[The prepared statement of Hon. W.J. "Billy" Tauzin follows:]

PREPARED STATEMENT OF HON. W.J. "BILLY" TAUZIN, CHAIRMAN, HOUSE COMMITTEE ON ENERGY AND COMMERCE

Thank you, Chairman Upton for calling this important hearing on the Committee's staff discussion draft regarding the transition to digital television. I, like many of my colleagues have been involved in the transition since its earliest stages over a decade ago. Achieving a successful and timely transition to digital television is a top priority of mine. It is important for consumers and I think it is essential for the future viability of the broadcasting industry. So it is with great interest that we have this hearing to come together to discuss potential solutions to break the logjam that has been holding up the transition.

This transition has been underway for over 10 years and we are not as far along as we need to be. The staff discussion draft is just that—a discussion draft—and I invite the witnesses to express their thoughts. I look forward to receiving more today from the witnesses and in the coming weeks. Most of the provisions have been put in there in an effort to create a comprehensive communications policy regarding the transition to digital, while other provisions have been included with the express intent to elicit spirited discussion, alternatives and ultimately viable solutions—where no clear viable answer is readily apparent.

We do not begin this legislative process lightly. The FCC was tasked with shepherding the transition through. Unfortunately, many issues remain unresolved—creating uncertainty in the marketplace and for consumers. I am pleased that the FCC has put in place a DTV Task Force and am appreciative of its work. But time is running short—and I urge the FCC to give this transition its utmost attention.

As I have said before, we always prefer marketplace solutions to government involvement. And industry players have much to be proud of—they have met on their own —and with me in informal roundtables over the last 10 months—in an effort to see what more can be done. And progress has been made but these private, inter-industry negotiations seem to have come to their end point and time for the DTV transition is running out. Time is not on our side. Right now this transition is on a collision course with consumers and we must act now to turn things around. The promise of this transition for the broadcasting industry holds many benefits not only for it but also for *consumers* and it is time for us to ensure that communications policy enables consumers to realize these benefits. *I have a real concern about consumers being forced to go out and spend money for a converter box—and will end up getting nothing new for the additional cost. This cannot be allowed to happen.*

So it is with an eye toward the consumer that we offer up this staff discussion draft.

- Consumers reasonably expect that in the future their TVs will receive broadcast signals just as they do today. The FCC decided to ensure this with its DTV Tuner Order in August. The costs of incorporating DTV tuners into televisions set should fall quickly as **all** sets include these tuners. The five year phase-in schedule does not require the smallest and least expensive sets to include tun-

ers until 2007, by which time the cost of this technology will undoubtedly be lower. The staff discussion draft affirms this approach.

- Consumers reasonably expect that their consumer electronics equipment, including TV sets will work with their cable system. Given that over 70 percent of consumers receive their broadcast signals via cable this makes sense. Portability of consumer electronics equipment, and nationwide interoperability with cable television systems and digital television receivers—equivalent to today's "cable-read" analog televisions—is an essential element to ensuring consumer acceptance and sufficient penetration of DTV. The staff discussion draft requires this.
- Consumers reasonably expect to be able to purchase a reasonably priced basic cable ready digital television set. The staff discussion draft ensures that consumers are not forced to buy a Cadillac when all they want is a Buick.
- Consumers, in exchange for purchasing new digital equipment, expect to enjoy exciting new content. The staff discussion draft affirms the FCC's authority in this critical area of the transition. Content is key to a successful transition. The staff discussion draft puts some focus on the FCC's current proceeding—and specifically requires it to implement a "broadcast flag" content protection solution. But what are the limits of content protection?
- Consumers also expect to continue to enjoy the ability to home record in the digital age—we affirm this in the staff discussion draft. We need to determine what companies require in order to release—and continue to release—quality content over the air. We also need to determine what can we do to stop the unauthorized distribution of content. What are the limits of what we can do—what is a workable, viable solution?
- Consumers reasonably expect that when they purchase a HD set they will be able to view HD programming being offered by the network. The staff discussion draft requires network affiliates to pass-through the HD signal without degradation—or "downresing" it to a lower resolution.
- The transition to digital is going to be a difficult one for consumers. The staff discussion draft eases the burden a bit by assuring the commercial availability of converter boxes by requiring cable operators to separate security and non-security features of the boxes. *But it stops in its tracks,* the FCC's rule that will prevent cable operators from offering integrated set-top boxes. Integrated boxes may very well be more convenient and less expensive for consumers—at the very least there is another choice for consumers.
- Consumers should be able to make informed purchasing decisions on equipment and content. The staff discussion draft contains consumer notice provisions. I would like to personally thank Mr. Boucher for his work in this area and I look forward to working with him on this, as well as a number of other issues, in the future.
- The staff discussion draft leaves open for now—the issue of multicast must-carry. There are deep concerns among members of Congress that, if consumers have to buy special boxes to convert sets to digital and all they get is same old signal, then what good is the transition? There's no extra value. I look forward to hearing some creative answers to this important question from the witnesses this morning.

Obviously the devil is in the details and some of the details contained in the staff discussion draft are intended to highlight the difficulty of this transition. I want debate. I want proposals. I want solutions. Because make no mistake—this transition will not fail. It will occur—that is a certainty. And it will be a success. We are all in this together—and by working together we can ensure that consumers are the ultimate beneficiaries of the wonders of digital technology through this digital transition.

Thank you.

Mr. UPTON. Thank you. We have 12 minutes in this vote that is remaining on the House floor. Mr. Dingell.

Mr. DINGELL. Thank you, Mr. Chairman.

Mr. UPTON. I understand, by the way, we have three votes, so we are going to all have to break and return when the votes are completed.

Mr. DINGELL. Well, I will proceed if you wish or I will wait and defer until at a later time.

Mr. UPTON. What would you prefer?

Mr. DINGELL. What is your wish, Mr. Chairman?

Mr. UPTON. Would you like to go now?

Mr. DINGELL. I will do it now if you wish.

Mr. UPTON. Okay. The gentleman is recognized.

Mr. DINGELL. Mr. Chairman, thank you. I commend you for holding this hearing, and I commend you and Mr. Tauzin for the wonderful cooperation that the three of us have shared with regard to the discussion draft now before the committee. It is a discussion draft. It is one in which there is going to be considerable controversy, and there will be a lot of comments. That is good, that is the reason that we introduced this into the area of public discussion. It is also the reason we have not introduced it as legislation, because we want to hear what is going to be said.

Over the course of broadcast history, there have been a lot of technological breakthroughs, and I won't bother enumerating them here, but each of them has had significant benefit but also significant costs. The government has been involved in almost each and every one of these, sometimes beneficially, some less beneficially. In any event, we now are on the footsteps or rather on the footsteps of trying to move forward into new digital service for listeners, and we are going to have to determine how we are going to do that. The purpose of this draft is to see to it that we can get the comment.

Now, if TVs are connected to cable, the consumer is going to wind up paying extra to buy or lease a digital converter box from their cable company or from the local electronic store. And if the TVs rely exclusively on over-the-air reception, as some 80 million sets do today, the consumer will be compelled to pay even more to convert the digital signal to one that is viewable. Either way consumers are going to wind up paying hundreds of dollars a piece just to stay even. That is to receive essentially the same television service they enjoy today or else their sets are very liable to go dark.

The discussion draft is for the purpose, as far as I am concerned, of finding out not only what the industry needs and how the industry will respond but also how we are going to protect the consumers and see that they are not hurt by this set of circumstances. It is an attempt to speed up the transition so that the analog broadcast spectrum can be returned to the government and put to higher and better uses where the public benefits. That is an admirable goal and I agree it should be pursued with more than a little zeal. But it also should be balanced against the increased cost to the public to the digital conversion.

To be sure, the ultimate success of digital transition depends on inter-industry cooperation on important issues, such as cable interoperability, digital TV tuners and the broadcast flag solution. The staff draft goes a long way toward assembling these puzzle pieces in a way that the industries have been unable to do on their own so far, or that the FCC and other government agencies have not significantly attempted to do. For that I commend again my colleagues, Mr. Tauzin and Mr. Upton, and their staffs who worked so cooperatively with mine on these key points.

But all the same, I am not convinced that an expedited return of the spectrum should be the chief goal of this legislation. Congress initiated the policy of converting the Nation's broadcast system to digital, and I believe the Congress has a similar responsi-

bility of ensuring that no consumer is disenfranchised as a result. I believe we should begin to focus on exactly what will happen to the American public when analog broadcasts cease to exist. How much will each family be expected to pay for the privilege of continuing to use their existing television sets? The answer to the question may be as startling to us as it is to the folks back home, especially when the folks get the answer because they may not be too pleased.

Again, Mr. Chairman and Chairman Tauzin, I commend you for tackling the obstacles that have been included in the industry for several year. It is no small task. And I look forward to working with you to refine the technical issues contained in the draft as well as to address the additional consumer-related issues that I have raised this morning. I also look forward to the counsel and the advice of the panel before us and such other persons as may choose, and I hope there are many of them, to comment in what I hope will be a meaningful dialog on what it is we should do as a matter of public policy so that the government agencies may respond to the needs of the people, keeping careful in mind the urgent needs of quality service and the protection to consumers. Thank you, Mr. Chairman.

[The prepared statement of Hon. John D. Dingell follows:]

PREPARED STATEMENT OF HON. JOHN D. DINGELL, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF MICHIGAN

Thank you, Mr. Chairman, for holding this hearing on draft legislation to speed the transition to digital television. Over the course of broadcast history there have been many technological breakthroughs. In the 1950s, live telecasts gave way to recording on film and tape. In the 1960s, black and white gave way to color. In the 1970s and '80s, broadcasts began to migrate from over-the-air to cable.

But as challenging as these technological advances were, none compares to the daunting task that is now before us. We now know that the wholesale transformation from analog to digital broadcasting not only requires an unprecedented degree of cooperation among and between industry players—each with their own unique and often divergent set of motivations and interests—but it also requires that some specific action be taken by each and every American household in order to succeed.

We've all heard the digital conversion compared to the migration from black and white to color TV. If only it were that easy. But this transition is qualitatively different, and I would note one difference in particular that is tremendously important. Unlike the advent of color television, stereo broadcasts, cable TV or FM radio, this technological revolution will affect every consumer's pocketbook, whether they want the new technology or not.

In days gone by, if a consumer didn't want to pay to see programs in color, he or she simply held on to the old black and white set. Stereo broadcasts can still be heard in mono on TVs built with just one speaker. And if FM radio holds no appeal, a consumer can continue listening to stations on an AM receiver. But for the consumer who has no interest in receiving a crystal-clear digital television signal, or simply can't afford one, he or she very simply will be out of luck. There will be a cost, and the day to pay is right around the corner—perhaps as soon as four years from now.

The average American household has nearly three television sets. Even using a most optimistic, albeit unlikely, assumption that every household will purchase a digital television set in the next four years, that will still leave two television sets in each and every house without a viewable signal.

What happens then? If the TVs are connected to cable, the consumer will end up paying extra to buy or lease a digital converter box from their cable company or local electronics store. And if the TVs rely exclusively on over-the-air reception, as some 80 million sets do today, the consumer will be forced to pay even more to convert the digital signal to one that is viewable. Either way, consumers will end up paying hundreds of dollars apiece just to stay even. That is, to receive essentially the same television service they enjoy today. Or else their sets will go dark.

The draft legislation is an attempt to speed the transition so the analog broadcast spectrum can be returned to the government and put to higher and better uses for the public's benefit. That is an admirable goal, and I agree it should be pursued with some zeal. But it also should be balanced against the increased cost to the public of the digital conversion.

To be sure, the ultimate success of the digital transition depends on inter-industry cooperation on important issues such as cable interoperability, digital TV tuners, and a broadcast flag solution. The staff draft goes a long way toward assembling these puzzle pieces in a way the industries have been unable to do on their own thus far. For that I highly commend Chairman Tauzin and Chairman Upton, and their staffs who worked so cooperatively with mine on these key points.

But at the same time, I am not convinced that an expedited return of the spectrum should be the chief goal of this legislation. The Congress initiated the policy of converting the nation's broadcast system to digital, and I believe the Congress has the singular responsibility of ensuring that no consumer is disenfranchised as a result.

I believe we should begin to focus on exactly what will happen to the American public when analog broadcasts cease to exist. How much will each family be expected to pay for the privilege of continuing to use their existing television sets? The answer to that question may be as startling to us as it is to the folks back home.

Again, Mr. Chairman and Chairman Tauzin, I commend you for tackling the many obstacles that have eluded the industry for several years. It is certainly no small task, and I look forward to continuing to work with you to further refine the technical issues contained in the draft, as well as address the additional consumer-related issues I've raised this morning.

Mr. UPTON. Thank you, my friend from Michigan. At this point, we will adjourn temporarily for these three votes on the House floor. My guess is we will start as soon as we can after these three votes, which will be pretty close to 11 o'clock.

[Brief recess.]

Mr. UPTON. Can I ask that the members keep their opening statements, if they can, to 3 minutes. I am told we are going to have another vote or two in an hour, and I know that we have got an energy conference I think that is meeting now, and we have a full committee markup as well. So I want to move things as quickly as we can, and I will go in the order that the members appeared at the beginning. Mr. Sawyer.

Mr. SAWYER. Thank you very much, Mr. Chairman. I will try to keep my remarks brief. I am grateful to you today for holding this hearing on what is arguably the most important consumer technology issue facing the Nation. And although the issues before us are numerous and complex, I believe that this discussion draft that you and others have put together will be a helpful tool in guiding our conversation and ultimately the decisions that reached from it. I am hoping that today's hearing will bring us another step closer to reaching that kind of fair agreement that would ensure timely conversion to digital broadcasting. With that, I would yield back the balance of my time and ask for unanimous consent to put the rest of my statement in the record.

Mr. UPTON. The chairman is most grateful for that. With no objection, the statement will be made part of the record, and I would ask at this point that all members' opening statements, by unanimous consent, will be made part of the record.

[The prepared statement of Hon. Tom Sawyer follows:]

PREPARED STATEMENT OF HON. TOM SAWYER, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF OHIO

Thank you Mr. Chairman for holding this hearing today on what is arguably the most important consumer technology issue facing the nation. Like many of you on

this committee, I am excited about the revolutionary applications that will be possible once digital broadcasts take hold. However, many issues must still be resolved for the public to realize the benefits of this technology in a fair and timely manner.

I commend Chairman Tauzin, Mr. Upton, Ranking member Dingell, and Mr. Markey for their strong leadership on this issue. The discussion draft put forth by Chairman Tauzin and Ranking Member Dingell is an important step. With the digital television broadcast deadlines quickly approaching, Congressional action is vital where industry agreements cannot be reached. I would urge all parties to continue negotiating in earnest. Private industry should not use the discussion draft as an excuse for not moving forward on their own.

While the bill would help address many of the outstanding issues plaguing the transition to digital, I believe that any final legislation should demonstrate a stronger commitment to public television. During our July hearing on the Corporation for Public Broadcasting, witnesses raised several issues that were central to facilitating public broadcasting's digital transition. First and foremost is the financial obligation for digital conversion. It is estimated that the total cost for public television to become digitally ready is about $1.7 billion. Many stations, including WNEO/WEAO in my district, have done an admirable job of raising local funds to pay for the cost of transition. WNEO/WEAO has raised nearly 73 percent of the $4.8 million needed to convert its station for digital broadcasts. Given that the station runs on a $5 million annual operating budget, this is quite an accomplishment. With local stations doing their part, it is time for the federal government to provide the necessary funds to ensure that all public stations are ready to digitally broadcast in May of 2003. With this in mind, I think that the final digital transition bill should include language authorizing funding to assist public broadcasting stations convert to digital. As the Committee that overseas public broadcasting, we need to make our commitment and jurisdiction clear in this area.

Congress also needs to ensure that all educational programming is available once digital conversion is complete. Like Chairman Powell, I have some reservations that the Commission's decision requiring cable operators to carry only one channel could reduce the availability of educational public broadcast offerings. I understand that public televison has reached two nationwide agreements with two different cable operators to ensure that all channels are carried if a public television station decides to multi-cast. I hope that this type of negotiation continues so that innovative programming is available to all consumers no matter who their cable provider is. However, if national agreements cannot be reached, legislation will be needed. As the Chairman continues to consider the section of the bill dealing with must carry requirements for digital multi-casting [the discussion draft contains no language on this topic yet], I would urge him to give special consideration to public broadcasters who have laid out a clear, innovative plan for the use of their spectrum. I am interested in hearing from the witnesses as to their thoughts on what best benefits consumers as the Committee considers commercial broadcasters carriage rights for digital multi-casting.

Although the issues in front of us are numerous and complex, I believe that the discussion draft will be helpful tool in guiding our discussion. I am hopeful that today's hearing will bring us another step closer to reaching a fair agreement that would ensure a timely conversion to digital broadcasting.

Mr. UPTON. Mr. Boucher.

Mr. BOUCHER. Well, thank you very much, Mr. Chairman. I want to commend Chairman Tauzin, Ranking Member Dingell, Chairman Upton, Mr. Markey and the members of the Digital Transition Task Force for putting forward a thoughtful and well-balanced proposal which will make a genuine difference in the struggle to achieve the transition to digital television broadcasting. Just the act of releasing the discussion draft of the bill has motivated a new positive tone among the stakeholders in their negotiations. Because of this work, we are much closer today to addressing the major barriers to the transition than we were one short year ago.

I will comment on several highly useful provisions of the draft and then in these remarks make one suggestion for further improvements. First, the draft bill recognizes the important link between the need for uniform standards to assure that all digital TV receivers can operate compatibly among all cable systems and the

mandate that TV sets have digital tuners by a date certain. The FCC's digital tuner mandate only addresses signals delivered over the air. That is the primary means by which about 15 percent of United States homes receive television signals. But the provisions in the bill ensuring that all digital TV sets are compatible with all cable systems cover the other 85 percent of homes, enabling TV set manufacturers to produce sets with digital tuners and other processing equipment capable of receiving digital signals, both from cable and over the air.

With that assurance of a greatly expanded potential market, TV set manufacturers will be willing to manufacture digital-capable sets in much greater numbers and to put them into the market much more rapidly. As manufacturing volume ramps up, the price per set will decline, placing them within the reach of millions more consumers. And so the provision for uniform cable compatibility standards is highly beneficial, and I applaud its inclusion within the bill.

Second, the draft bill wisely instructs the FCC to ensure that the regulations implementing the cable compatibility requirements do not impose limitations on manufacturers other than those necessary to prevent harm to cable systems or to prevent theft of services. Gone are the restrictions and disabling limitations of the former PHILA license, which, among other things, prohibited the placement of hard drives in TV sets, enabled down resolution of the quality of programs and contemplated selectable output controls to govern which outputs would have access to particular content. The PHILA license broadly inhibited competition in the manufacture of devices and I broadly welcome its demise with the draft bill before us.

Third, in the broadcast flag rulemaking provision, the draft bill properly instructs the FCC to take steps that will prevent the uploading of content marked with the broadcast flag to the Internet for distribution to the public. The words, "to the public" are important in that phrase. Their presence in the bill ensures that consumer fair use rights are respected and that people can make noncommercial personal use of flagged content and use the Internet to transmit it as long as the communication is to a limited audience and not to the general public. I thank the chairman for this thoughtful structure which acknowledges fair use principles. I also commend the provision that prevents that application of the broadcast flat to news and to public affairs programming.

Finally, I want to suggest that we rethink the provision which requires that devices manufactured after July 1, 2005 do not have analog outputs. At present, there are upwards of 300 million television sets, VCRs and computers in the market and in homes and businesses that only have analog monitor inputs. Only an analog signal can reach the monitor in these 300 million devices. The provision prohibiting analog outputs on devices manufactured after 2005 threatens to strand these 300 million appliances now in use. If the concern is plugging the so-called analog hole, the way to do that is with watermark technology now in development. Let us not bar the inclusion of analog outputs on new digital appliances.

Chairman Tauzin and Mr. Dingell and the task force members and the staff have performed excellent work, and I want to com-

mend them for a measure that takes the digital transition many strides forward. Thank you, Mr. Chairman.

Mr. UPTON. Thank you, Mr. Boucher. A member of the subcommittee, Mr. Walden, is recognized for an opening statement.

Mr. WALDEN. Thank you very much, Mr. Chairman. I appreciate you scheduling such a non-controversial issue on the first day of my arrival as a member of the Telecommunications Subcommittee.

I am looking forward to hearing the testimony of our panelists today and the wading into the weeds on this issue. Clearly, it is an issue that is of concern to consumers, as the chairman of the full committee spoke about. I am pleased to see us moving in a direction toward plug-and-play technology. I think we have to keep it simple and make it work for consumers. I am waiting to hear more about the issues of must carry and about how we make this transition work for everyone in the various industries but most of all for the consumers. And I take note that when our chairman talked about the consumers wanting to have the ability to see the signals that are out there, there may be those consumers too who want to see all the signals that are out there. And so I think that is an issue we have to figure out how to make sure that happens, especially as broadcasters go into the digital environment.

So, Mr. Chairman, I welcome the testimony of the members, and I look forward to my service on this subcommittee under your leadership. Thank you.

Mr. UPTON. Thank you. Ms. Harman for an opening statement.

Ms. HARMAN. Thank you, Mr. Chairman. Just 1 second. I ask your indulgence, a little disorganized today. Okay. Thank you, Mr. Chairman, not just for holding this hearing but for preparing a draft that gives us a lot to think about and pushes us to resolve the issues. I am interested to hear what our witnesses have to say about a lot of the tough ones, but I do want to confess that I come to this hearing with a mission, and that mission is to enact the material in this bill or a variation on the material that has to do with additional emergency spectrum which is absolutely critical after 9-11.

As you know, Mr. Chairman, I have been very involved in homeland security issues, and like you, have been pained to learn how the lack of interoperable communications, both in New York and at the Pentagon, slowed down a lot of the relief efforts and in fact we now know caused many fire fighters in New York not to know that the buildings were falling down as they were going up. This is a catastrophe, it is something we have to fix, and we have an opportunity in this committee, through part of this legislation, to do that.

Congress, when we passed the Balanced Budget Act of 1997, promised that there would be some freed up spectrum by the end of 2006. We need this spectrum. The issues are complicated, other folks are using some of this spectrum. We have to help them with the transition. I am for helping them, but I am for keeping our promise. And I just want to point out to our colleagues that Congressman Curt Weldon and I introduced legislation called the HERO Act, which is overwhelmingly and unanimously supported by every public safety group to keep our promise of freeing up this

spectrum by January 1, 2007. A broader version of this idea is in your draft.

I would be happy to see that happen, but the narrower version would be just great too. I support help for those who have to speed up and make that transition and let us use this spectrum for emergency uses. I also want to point out that it is good that you address a sunset for analog spectrum, but it is very important that as we consider that, we plug the analog hole. Otherwise, we will not be doing what we must do to protect content and thwart piracy.

And so I just conclude by saying that it is great that we have a discussion draft, it is great that we are pushing for answers. I agree with the chairman of the full committee that we will find those answers. I doubt that perfection is an option, but I certainly think that progress is imperative, and particularly with respect to homeland security we cannot neglect the needs of our safety agencies any longer. Thank you, Mr. Chairman.

Mr. UPTON. Thank you. Mr. Bass.

Mr. BASS. Thank you, Mr. Chairman. I appreciate your holding this hearing and building on the subcommittee's already impressive record of considering the Nation's transition into digital communication mediums. The draft legislation that we are talking about here today continues on the heels of a very active year for digital transition. Actions by the FCC industry and this subcommittee have, in the past few months, made it more clear and easy to see the path that we need to follow to realize all the benefits that we have been promised. Of course, it is all the more easy to see the costs in pain in the transition as well. Nevertheless, it seems that we might just solve some of these chicken and egg dilemmas after all.

Now, the draft contains many fine provisions, and I commend subcommittee staff for their efforts. And I am also pleased that it contains many of the same items as Chairman Powell's plan for transition, not only to protect the committee's jurisdiction and authority. In that same spirit, I look forward to working with the chairman and other members to protect the authorizing jurisdiction of this committee with respect to public television transition. I and I suspect other members have expressed support for this authorization while also expressing the view that public television needs to keep careful watch on its encroaching commercialism. Public television ought to heed those views, but they should know that they will get their just rewards in return. We need also to consider the distinction between commercial and non-commercial stations when thinking about multicasting programming opportunities and perhaps even content protection proposals. I know these and other points are being left until we have had the opportunity to hear from these panelists and from all the subcommittee members on them, as they should be.

I hope in return the panelists will hear from us the clear message that we are about to send, and that message is we hope that you all can figure out how this is going to work out before we ultimately end up having to make the decision for you. Know that we expect broadcast programming to be made in high-definition TV format. Know that we expect this programming to get to viewers in all methods they use to receive these signals, and know that we

expect equipment to be as non-proprietary and as legacy-compatible as possible.

Mr. Chairman, again, thank you for your ongoing efforts. I look forward to the testimony and future action on this legislation. I yield back.

Mr. UPTON. Thank you. Mr. Stupak.

Mr. STUPAK. Thank you, Mr. Chairman. It looks like we have more witnesses than members here today, so I look forward to a good hearing.

First, I would like to commend Chairman Tauzin and Ranking Member Dingell for their dedicated pursuit of a digital television future, prompted by both the benefits to consumers that digital television has to offer as well as the desire to turn over spectrum to other important uses. As co-chairman of the Law Enforcement Caucus, I share in the interests that the public safety community has in obtaining this spectrum. However, I also know that when it comes to the transition to digital television in my rural district in northern Michigan, the challenge is great.

As our many hearings on this issue have made clear, there is much upon which we can disagree while consensus is rare. I am impressed by the discussion draft and its efforts to bridge the divides and to take the interests of all parties into account. There are a few views that I believe have merit, and I hope they will be considered.

First, I have been impressed by the plans of the public broadcasters to program on a multicasting fashion and hope that their ambitious goals can be taken into account. We recently had a hearing where many members expressed support for public television and a recognition for the tremendous service that public broadcasting offers to our communities and to our children. When the provision on multicasting is addressed in the bill, I hope we can keep the aims of the public broadcasters in mind, as I see they are not represented here today.

Second, I would like to support the cable industry's efforts to move into the future with interactive services. Cable, both NCTA and ACA members, have done much to serve my district, and as cable providers contemplate these advanced services, I hope that we can find ways to assist them on that front. I also share in some of the concerns of the broadcasters who want to ensure that their content is protected from piracy and unlawful copying and distribution. The broadcast flag seems to be very promising, and I believe that we also need to find ways to address the issue of the analog hole.

Last, we must not impose too many conditions so as to overregulate this industry, make equipment prohibitively expensive and deter consumers. I look forward to the discussion today and hearing from our witnesses about the discussion draft and some of their ideas. Mr. Chairman, I yield back the balance of my time.

Mr. UPTON. Thank you. Mr. Terry.

Mr. TERRY. I am so anxious to hear from our folks, I would rather submit my statement.

Mr. UPTON. No problem, glad to have it.

[The prepared statement of Hon. Lee Terry follows:]

PREPARED STATEMENT OF HOIN. LEE TERRY, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF NEBRASKA

Thank you Mr. Chairman, Mr. Chairman, I want to thank you for holding this very important hearing so that we may generate discussion on the current draft legislation. I know that you and your staff have spent countless hours discussing the Digital Television transition with the Consumer Electronics Industry, the Cable Industry and the Broadcasters, and I want to commend you on your hard work. This is not an easy issue to deal with and it is one that we have wrestled with for quite some time.

Mr. Chairman, I am happy to see that this Discussion Draft addresses the issue of the broadcast flag. For the protection of digital content in this new age, it is very important that we do all we can to protect copyrighted works, and setting a sunset date for manufacturing analog output equipment is a crucial part of DTV and anti-piracy strategy.

I am glad to see a set date for the return of the analog spectrum by the broadcasters. The return of this spectrum was the goal of the '97 Budget Act, and 2006 is right around the corner. It is true that having access to this spectrum would greatly improve our ability to perform some spectrum reorganization, which would help bring 3G to America, but more importantly benefit public safety officials with their ability to communicate over less crowded spectrum blocs. However I am concerned that the May 2006 date might be too soon.

Even though Broadcasters are operating digital signals in 143 markets which serve almost 90% of American consumers, most Americans do not have digital TV's that can receive a digital signal. Most consumers still have analog TV sets and despite the laudable actions of broadcasters to produce digital content, prematurely shutting off sets would disenfranchise our constituents. Larger televisions will not include digital tuners until 2004 with the smaller sets following in subsequent years. Mr. Chairman, I am uncomfortable telling my constituents who still rely on free-over-the-air analog signals that they have buy a $2000.00 TV, or purchase a $250.00 digital tuner if they want to watch TV.

Basic economics says that as more of a product is produced, the price will decrease, so why are we forcing people to buy a high-priced TV or a high-priced digital tuner before companies stop producing analog equipment?

I am delighted to see that this Draft Discussion codifies the recent FCC decision regarding the placement of digital tuners in TV sets. But if we are going to make a hard cut-off of 2006 for the return of the analog signal, I think it prudent that we step up the dates that digital turners are to be placed in TV sets. It is my understanding that the Cable industry and the Consumer electronics industry have been involved in negotiations on a wide range of technical and business issues, including how integrated digital television sets can be connected directly to cable systems without the need for a set-top box. I would encourage these industries to continue their discussions, with the understanding that reaching a solution sooner, rather than later is in the best interest of everyone, particularly the consumer.

Mr. Chairman, I applaud all of your efforts in this long and tedious process. I would also like to commend the industries that are working to get the digital transition back on track through market-place solutions and inter-industry agreements. I know we all have a long way to go, but I am encouraged to see some of the progress made already. Mr. Chairman, I look forward to a continued debate and discussion on this issue, as this is the only way we can bring the benefits of digital to our constituents.

Mr. UPTON. Ms. Eshoo.

Ms. ESHOO. Thank you, Mr. Chairman and to Chairman Tauzin for holding this hearing and for submitting your staff draft legislation, which really gives all of us on both sides of the dais much food for thought. We have an excellent panel today, and I am looking forward to hearing from each one of you. But I want to single out one person because we have worked very closely with Thera Bradshaw, actually partnered with her to ensure the lifesaving E-911 technology is implemented in every cell phone. And I think that the Congress and the people of this country are really very grateful to you for that. It is a very important issue.

I think that we need to keep just one premise in mind. I know that everyone here has their own agenda, it is important that you

do, you represent it, but it is going to have to be compromised out. At the end of the day and at the beginning of the day, I think the litmus test or the yardstick by which we should measure this is what is best for the consumer? If in fact companies want to meld the word "consumer" and the name of your corporation together, but because their sets have gone dark, you won't have any credibility any more. Now, I know that is leapfrogging, I know that is shorthand, but that is really what this is all about.

So I don't think that you want the Congress to start mandating technology standards either. So I welcome the fact that this draft is being put down on the table. What is says to all of you is, you have got to sit down and sharpen your pencils and come up with what needs to be come up with—what needs to be done. Because we, on both sides of the dais again, are going to have to have credibility with the consumer.

There is a deadline. I don't know whether that is going to be moved around in the future. Most frankly, I don't think it should be, because I think it is a very good hammer. It is a healthy hammer to have in all of this. So we have work to do, we need to do it together. I think that you know what you are going to need to do. And together, I think that we need to work to produce something that is very important for the country. It is a difficult road? Yes. I can't believe that I have been here, this is my 10th year. I have come to a lot of hearings on this issue, and I don't want it to become old hat, I want it to really be integrated into something that we are proud to produce for the consumers of the country. So I really couldn't mean more of what I am saying. I have confidence in you. I hope that time will not be whittled away and the interests come back to the table and say, "Gee, we are staring at a deadline and we simply can't do it."

If Congress becomes the ultimate referee in this, you may not like what the referee does. So I am being stern with a smile. And I am glad that you are all here, I look forward to what you are going to say. And, Mr. Chairman, thank you for the staff draft legislation, because I think that it is an important thing to do in terms of sending a signal, excuse the expression, to everyone that is here today. Thank you, and I look forward to hearing from you.

[The prepared statement of Hon. Anna G. Eshoo follows:]

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

My thanks to Chairmen Tauzin and Upton for holding this hearing and for submitting their staff-draft legislation, which has given all of us on both of the dais much food for thought.

Because we have a very good panel of witnesses, I'll keep my statement brief. I'd especially like to acknowledge Thera Bradshaw, with whom I've partnered to ensure lifesaving E-911 technology is implemented in every cell phone.

Fundamentally, I think we need to keep one simple premise in mind when we consider the myriad issues facing the transition to digital TV:

What's best for the consumer.

The 108th Congress should pass authorizing language for the digital conversion we've mandated for our public broadcasting stations. This draft is silent on authorizing funding for public stations. I hope we can work in a bipartisan fashion to move something early next year authorizing these critical funds.

Second, I look forward to hearing from our panel on the issues of the broadcast flag and also multicasting.

I'm concerned that there are some who are advocating that they are entitled to the new channels that will emerge as a result of the transition to digital.

The staff draft is silent on this issue—so the commentary today will continue to be very instructive to us.

I think we would all acknowledge that it's been a difficult road toward progress in the digital transition. I hope all the parties following this hearing will promptly resume their private dialogue and work toward a solution.

I'm sure I speak for many of my colleagues when I say we would prefer not to be referees.

Mr. UPTON. Thank you.

Ms. ESHOO. Hearing your testimony.

Mr. UPTON. Mr. Shimkus.

Mr. SHIMKUS. Thank you, Mr. Chairman. I will too be brief. I think September 11 showed us that we didn't have our first line responders able to talk to each other, so I echo the comments of my colleague, Bart Stupak and Jane Harman, in their concerns of that issue.

The second thing is the public TV, I think there needs to be an authorization to help them move to the digital platform, and that will be part of my concern as we move forward. I agree with many of my colleagues on the analog hole, and date certain are very, very important, and I think they help us. They have to be realistic also, as we are finding out, with airport security. You have got to have something that you can get to.

So I think those are my concerns as we flesh out this debate, and, obviously, there is a lot of concern from people present, and we look forward to working through this at the end of this Congress and in the next one. And I yield back my time.

[The prepared statement of Hon. John Shimkus follows:]

PREPARED STATEMENT OF HON. JOHN SHIMKUS, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF ILLINOIS

Thank you Chairman Upton for holding this important hearing this morning on the Transition to Digital Television.

I want to praise Chairman Tauzin and Chairman Upton and all the staff who worked on this draft legislation. The transition to DTV hosts a number of complex and difficult issues that are extremely difficult to address. I think this bill is an excellent baseline and I appreciate your strong leadership on this issue. This Committee's action is necessary to get the stalled transition moving again.

Now, I would like to touch on a few issues that concern me.

1) There is nothing in this bill that addresses the needs of Public Television.

I understand this is a "draft" bill, meant to be a starting point and not an annual authorization, but I want to publicize my support for an authorization to help rural public television stations afford the conversion.

2) In the interest of promoting new, innovative content to drive the conversion, we need to ensure that content is protected from piracy. The draft bill includes a provision to implement a broadcast flag in this draft and also recognizes the importance of filling the "analog hole." The provision to sunset analog outputs on devices by 2005 would go a long way to stop analog piracy. However, to completely plug the analog hole, devices that convert analog signals to digital need to respond to a watermark. I know that the industry is working to reach an agreement on this technology. I believe that watermark technology needs to be required in this bill.

3) Finally, I want to share my possible concern with the date certain language for the transition to digital. Although I agree with the chairman's view that there needs to be a deadline, or the transition will never happen, I am still concerned about the 2006 date in the bill. Realistically, is this enough time? I would like to hear from the witnesses here today on this issue.

Thank you again Chairman Tauzin and Upton for your outstanding leadership and hard work in this issue. Although there are a number of issues yet to be addressed, this draft is an impressive start.

Mr. UPTON. Thank you. Mr. Brown.

Mr. BROWN. Thank you, Mr. Chairman. I will keep my comments brief. I would like to thank Michael Fiorile from the Columbus Dispatch Group in Columbus for testifying again before our committee for at least the second time.

I want to raise two issues that clearly merit our consideration as we develop this legislation. The burden on consumers and the need to support, as Mr. Stupak said, public television's transition to digital. Consumers obviously stand to reap the many benefits of digital television. Unfortunately, many will not be able to afford the required equipment to access digital TV. The method of pushing the transition forward must not place an undo burden on those consumers. Legislation should not force consumers to quickly replace their functional televisions with expensive new equipment. And part of being responsible to the public is not prematurely taking away access to the over-the-air analog broadcasting. Through digital TV, our public broadcasters can provide a broad spectrum of invaluable learning tools, especially to our children, but it is important to ensure that the necessary resources are available so that public broadcasters can continue that tradition and continue that transition, both.

Our public broadcasters face a federally mandated deadline of May 2003 to complete their conversion to digital. Despite this Federal mandate, 83 percent of funding for their digital conversion has been provide by State governments and local communities. Only 8 months remain before the deadline, only 78 out 356 public television transmitters broadcast in digital. Authorization language to assist the public broadcasting digital transition is essential to ensure their continued exceptional service to our local communities.

I look forward, Mr. Chairman, to hearing the testimony today and moving that transition forward.

[The prepared statement of Hon. Sherrod Brown follows:]

PREPARED STATEMENT OF HON. SHERROD BROWN, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF OHIO

Thank you, Mr. Chairman, I'll keep my comments brief.

I would also like to thank Michael Fiorile of the Dispatch Broadcast Group for testifying again before our committee.

A successful transition to digital television is a priority for Congress and our nation.

The transition must move forward and it must move forward on a timely basis.

It will provide not only a significant step forward for technology, but releases analog spectrum, which will be put to very good use for public safety.

I want to raise two issues that clearly merit our consideration as we develop this legislation: the burden on consumers and the need to support public television's transition to digital.

Consumers stand to reap the many benefits of digital television.

Unfortunately, many will not be able to afford the required equipment to access digital TV.

The method of pushing the transition forward must not place an undue burden on consumers.

Legislation must not force consumers to quickly replace their functional TVs with expensive new equipment.

And part of being responsible to the public is to not prematurely take away their access to over-the-air analog broadcasting.

Through digital TV, our public broadcasters can provide a broad spectrum of invaluable learning tools to our children.

But it is important to ensure that the necessary resources are available so the public broadcasters can continue the transition.

Our public broadcasters face a federally mandated deadline of May 2003 to complete their conversion to digital.

Despite this federal mandate, 83% of funding for their digital conversion has been provided by state governments and local communities.

Only eight months remain before the deadline and only 78 out of 356 public television transmitters broadcast in digital.

Authorization language to assist the public broadcasting digital transition is essential to ensure their continued exceptional service to our local communities.

I look forward to hearing the testimony today on moving the transition forward.

Mr. UPTON. Thank you, Mr. Brown. Mr. Cox.

Mr. COX. Thank you, Mr. Chairman. I look forward to hearing from this extraordinary panel of witnesses. There won't be too many questions I think that we cannot answer today if we direct them properly. I am looking forward to hearing from you, so I too will be brief.

I would like to discuss just three issues in the draft legislation. First, the creation of a firm date for the return of analog TV spectrum; second, potential technical mandates for TV manufacturers and cable systems; and, third, the application of must-carry requirements to cable operators.

The draft legislation contains the requirement that by 2006 broadcasters must vacate the analog TV spectrum that they have traditionally used and instead use only the spectrum they were given under the 1996 Telecom Act to provide digital television. In order to allow the broadcasting industry to make this transition from traditional TV to digital TV with its promise of clearer pictures and enhanced services, we loaned each TV station a second channel. These loans were both cost-free and interest-free. Nationwide, the value of all these extra channels has been estimated between $70 and $100 billion. So there are obviously huge economic benefits to be gained by allowing these assets to be used more productively than simply for transmitting an identical station, identical television program in a different format.

Consumers can expect a range of exciting new wireless services once these valuable slices of the airwaves are released into the marketplace. And consumers will also benefit from an expeditious transition to fully digital TV. This firm commitment to a date for returning the extra spectrum might conceivably render unnecessary other proposed legislation, such as requirements that TV makers include digital tuners in all their sets. I would welcome the thoughts on our panel on this. I would like to know whether, in your view, manufacturers would continue making televisions that receive only over-the-air analog signals if there are no more analog signals to receive. I would also like to hear from our panel on the likely impact on consumers if Congress chooses not to enact new laws requiring cable compatibility with new broadcast signals.

Mr. Chairman, I am pleased that the legislation rejects the concept of dual must-carry regulations. Requiring cable operators to carry two identical channels, one in an analog format and the other in digital, would be unwise. I would hope that we can add language barring the expansion of must-carry requirements altogether. The 1992 Cable Act gave broadcasters broad mandatory carriage rights. It forced cable operators to devote up to one-third of their channel capacity to carry local broadcast stations. This has created severe

burdens on cable systems' capacity and is now actually limiting consumer choice for programming.

Looking forward, while some of us would prefer no must-carry rules, I think we can find common ground with the notion that must-carry of a broadcast channel will be maintained, but the mandate will not be expanded. We must ensure that we don't trample on the First Amendment rights of cable operators or customers. And just as importantly, we must allow consumers to decide which channels and services come into their homes via the cable pipe. If some customers would prefer a limited number of channels and more bandwidth for an Internet connection or more independent cable channels and less Internet bandwidth or more channels from their local broadcasters, then they and their cable providers ought to be free to get and to give customers what they want.

Some of our witnesses today will call on the Federal Government to extend the must-carry rules to so-called multicast digital signals, the new channels that broadcasters are able to offer with the digital spectrum. We need to concern ourselves with whether this can be accomplished without forcing consumers to accept programming that not only hasn't proven itself in the marketplace but in many cases does not even exist yet.

I thank the chairman and the committee staff for your excellent work on these important issues.

[The prepared statement of Hon. Christopher Cox follows:]

PREPARED STATEMENT OF HON. CHRISTOPHER COX, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF CALIFORNIA

Thank you, Mr. Chairman, for holding this important hearing today on the transition to digital television. I'm looking forward to receiving the testimony of our excellent panel of witnesses, so I'll be brief. I'd like to discuss three issues in the draft legislation: the creation of a firm date for the return of analog TV spectrum, potential technical mandates for TV manufacturers and cable systems, and the application of must-carry requirements on cable operators.

I would first like to commend you for including in the draft legislation the requirement that by 2006 broadcasters must vacate the analog TV spectrum they have traditionally used and occupy only those portions of the airwaves they were given under the 1996 Telecom Act to provide digital television. In order to allow the broadcasting industry to make this transition from traditional TV to digital television, with its promise of clearer pictures and enhanced services, we provided each TV station the interest-free loan of a second channel. Nationwide, the value of all these extra channels has been estimated in the range of 70 to 100 billion dollars, so there are obviously huge economic benefits to be gained by allowing these assets to be used more productively than simply transmitting an identical television program in a different format. Consumers can expect a range of exciting new wireless services once these valuable slices of the airwaves are released into the marketplace. And consumers will also benefit from an expeditious transition to fully digital TV.

In fact, this firm commitment to a date for returning the extra spectrum might conceivably render unnecessary other proposed legislation, such as requirements that TV makers include digital tuners in all their sets. I'd welcome the thoughts of our esteemed panel today on whether any television manufacturers will continue making televisions that receive only over-the-air analog signals if there are no more analog signals to receive. I would also like to hear from our esteemed panel on the likely impact on consumers if Congress chooses not to enact new laws requiring cable compatibility with the new broadcast signals.

Mr. Chairman, while I'm pleased that the legislation rejects the concept of dual must-carry regulations, which would require cable operators to carry two identical channels, one in an analog format and the other in digital, I hope that we can also add language barring the expansion of "must-carry" requirements altogether.

The 1992 Cable Act gave broadcasters broad mandatory carriage rights, forcing cable operators to devote up to ⅓rd of their channel capacity to carry local broad-

cast stations, creating severe burdens on cable systems' capacity and limiting consumer choice for programming.

Looking forward, while some of us would prefer no must-carry rules, I think we can find common ground with the notion that must-carry of a broadcast channel will be maintained but the mandate will not be expanded. We must ensure that we don't trample on the First Amendment rights of cable operators and just as important, we should allow consumers to decide which channels and services come in to their homes via the cable pipe. If some customers would prefer a limited number of channels and more bandwidth for an Internet connection, or more independent cable channels and less Internet bandwidth, or more channels from their local broadcasters, then cable operators ought to be free to give customers the services that they want.

That's why I'm troubled that some of our witnesses today will call on the federal government to extend must-carry rules to so-called multicast digital signals, the new channels that broadcasters are able to offer with the digital spectrum. Cable operators and consumers could be forced to accept programming that not only has not proven itself in the marketplace, but in many cases does not even exist yet.

I thank the Chairman and the committee staff for their excellent work on this important issue.

Mr. UPTON. Thank you. Mr. Green.

Mr. GREEN. Thank you, Mr. Chairman, and I commend both our subcommittee Chair and our full committee Chair and our Ranking Member Dingell for their efforts in trying to bring the various parties involved in digital transition together for the benefit of all the consumers. I am not going to take a lot of time, because I want to hear out witnesses, like all our colleagues do, but I want to comment a little on the discussion draft, the focus of today's hearing.

Overall, the legislation moves the issue forward to the requirements of digital tuners, cable set-top box, compatibility and broadcast flags, but I feel it needs improvements in transition dates from analog to digital and taking positive legislative steps toward defining what is a broadcaster's primary video feed. The aggressive timeline for this transition to occur under the draft would leave millions of analog television sets unable to function. Millions of low-income consumers would suddenly have to face the choice of spending several hundred dollars for a new television or a couple hundred for a converter box to allow that old set to receive the signal.

The only thing I really want to get across is that 2006 is almost entirely a number created for budgetary purposes. We are the Energy and Commerce Committee, and our job is to bring technology to the American consumer as fast as possible, and I want to stress "as possible." I am not wedded to 2006 anymore, because as with every transition there are bumps in the road and adjustments to be made, and I think this date needs to be adjusted.

And, finally, Mr. Chairman, the draft legislation silent on defining what a broadcaster's primary feed video should be. The broadcasts have been given six megahertz of digital spectrum that can be sliced and diced into lots of little pieces when not used to provide HDTV. This is a fact that can't be ignored because of all the spectrum—all spectrum is too valuably wasted.

So where does that leave us on the issue? My friends in the cable companies say there is no room on their digital systems to carry multiple programming screens from broadcasters; however, they have the ability to crush down the broadcasters' six megahertz signal to three megahertz on their systems and thus create more room. But what this new compelling programming is that the—but

what is this new compelling programming that broadcasters want cable folks to carry through multicasting I am not sure. There is going to have to be some give on both sides, because I know it can be done and it is currently being done already.

Finally, Mr. Chairman, our public television stations need funding to help in reaching any kind of accelerated transition dates. Hometowns like Houston have a large fund-raising base to pay for the transition, but those small cities need that help. Clifford, the big red dog, should be seen by every child in our country after their transition date becomes effective, not just in our urban areas. And I yield back my time.

[The prepared statement of Hon. Gene Green follows:]

PREPARED STATEMENT OF HON. GENE GREEN, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF TEXAS

Thank you Mr. Chairman: I want to commend you and Ranking Member Dingell for your efforts in trying to bring the various parties involved in the digital transition together for the benefit of all consumers.

I am not going to take a lot of time here this morning because I want to get to the witnesses and their testimony, but I do want to comment a little on the discussion draft that is the focus of today's hearing.

Overall this legislation moves the issue forward through the requirements of digital tuners, cable set-top-box compatibility, and broadcast flags.

Where I feel it needs improvements it transition dates from analog to digital and taking positive legislative steps towards defining what is a broadcasters "primary video feed."

The aggressive time line for this transition to occur under the draft legislation will leave millions of analog television sets unable to function.

Millions of low-income consumers will suddenly have to face the choice of spending several hundred dollars for a new television or a couple of hundred for a converter box to allow that old set to receive a signal.

The only thing I really want to get across on this issue is that 2006 is almost entirely a number created for budgetary purposes.

We are the Energy and Commerce Committee and our job is help bring technology to the American consumer as fast as possible and I want to stress "as possible."

I am not wedded to 2006 anymore because as with every transition there are bumps in the road and adjustments to be made and I think this date needs to be adjusted.

Finally Mr. Chairman, this draft legislation is silent on defining what a broadcasters primary video feed should be.

The broadcasts have been given 6 megahertz of digital spectrum that can be sliced and diced into lots of little pieces when not being used to provide HDTV.

This is a fact that cannot be ignored because all spectrum is to valuable to be wasted.

So where does that leave us on the issue?

My friends at the cable companies say there is no room on their digital systems to carry multiple programming streams from the broadcasters.

However, they have the ability to crush down the broadcasters 6 megahertz signal to 3 megahertz on their systems and thus create more room.

But what this new compelling programming is that the broadcasters want the cable folks to carry through multi-casting, I am not sure.

There is going to have to be some give on both sides of this issue because I know it can be done and is being done already.

Finally Mr. Chairman, our public television stations need funding help in reaching any kind of accelerated transition date.

Cities like my hometown of Houston have a large fund raising base to pay for their transition, but it is those small market cities that need the help.

Clifford the Big Red Dog should be seen by every child in this country after your transition date becomes effective.

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

Mr. UPTON. Thank you. Mr. Fossella.

Mr. FOSSELLA. Thank you, Mr. Chairman, and going almost last, I guess many of the issues have been touched upon, so I am not

going to rehash, but let me just compliment the folks here for what I think is going to be a fruitful discussion, as well as the industry for trying to—make strides to come to a compromise on their own. And I encourage all those involved to continue to solve the problem, limiting the scope of legislation, if any, to remedy the DTV transitional problems.

I remind ourselves that it was the 1996 act of the past mandating broadcasters operating on analog spectrum and channels 52 to 69 to convert to digital in order to open spectrum for public safety and commercial use. I hope that all industries involved in the digital transition, in this committee and surrounding government entities, will remember that solving public safety spectrum is a necessary outcome of this transition.

In particular, I would like to hear folks talk about the issue of the analog hole and believe firmly that it is in the best interest of our country that negotiations of the industry, along with the necessary, if any, legislation, will ensure a quick and effective move to the digital world, addressing all the issues surrounding the digital transition, from multicasting to the analog hole, while reaching the goal of providing public safety with much needed spectrum. All of this rooted in the notion of free enterprise with only limited but essential regulation and legislation, if any. With that, I yield back.

[The prepared statement of Hon. Vito Fossella follows:]

PREPARED STATEMENT OF HON. VITO FOSSELLA, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF NEW YORK

Mr. Chairman I want to thank you, Chairman Upton, Ranking Member Dingell as well as Congressman Markey for the hard work you have put into the roundtable discussions thus giving us the opportunity to be here today with a discussion draft to work from.

As this process has moved along, I have noticed that the industry has made great strides at coming close to a compromise of their own, and I would encourage the industry to continue their own efforts to solve this problem thus limiting the scope of legislation Congress must use to remedy DTV transitional problems.

When you stand back and look at the big picture, there is one issue that brought us to the negotiations before us today, public safety spectrum. It was when the 1996 Telecommunications Act was passed mandating broadcasters operating on analog spectrum in channels 52-69 convert to digital in order to open up spectrum for public safety and commercial use. I hope that all industries involved in the digital transition, this committee and our surrounding government entities will remember that solving public safety's spectrum needs is the real underlying issue.

This discussion draft does an excellent job to address nearly all of the issues surrounding the digital transition. However, I would mention that one issue still to be discussed is the analog hole. I look forward to hearing the panel address this issue today and hope that a compromise will be met to ensure that the transition goes through smoothly with the least amount of piracy possible.

I believe it is in the best interest of our county, that the negotiations of the industry, along with any necessary legislation, will ensure a quick and effective move to the digital world addressing all of the issues surrounding the digital transition, from multicasting to the analog hole, while reaching the goal of providing public safety with much needed spectrum. I want to personally thank all of you for taking the time out of your schedules to testify today and I look forward to hearing your remarks on some of the concerns my colleagues and I have regarding the transition.

Mr. UPTON. Thank you. Mr. Engel.

Mr. ENGEL. Well, thank you, Mr. Chairman. I must say that this draft legislation reminds me of the title of an old Clint Eastwood movie, "The Good, the Bad and the Ugly." Each of these adjectives could be applied to different parts of the bill so let me attempt to take them in order.

The strong effort of content protection, in my opinion, is the good in the bill. For many years, Congress, the administration and private industry have struggled to come up with ways to deal with pirating music and video through traditional means of copying tapes and CDs. The advent of the Internet eliminated the need for tapes and CDs and now it just thousands of bits of data on a computer hard drive and MP3 player. Thus I am encouraged by the language in the draft bill that requires the FCC to create regulation that all digital devices, "recognize the use of a broadcast flag in order to prevent the unauthorized redistribution of marked, digital, terrestrial broadcast television content to the public over the Internet." The importance for developing such solutions, in my opinion, cannot be understated.

And for me it hit home when I realized what could happen to public television without such protections. As you know, I have tried to be a champion of public broadcasting the 14 years I have served in Congress. I have done so because time and time again public broadcasting has provided high quality educational material for me and my family to enjoy. However, public television doesn't produce all of its content. For example, National Geographic is owned by the news corp, Fox Networks. National Geographic's programming is stellar, yet without some solid protections in place, National Geographic may be forced to use only its cable outlets. That would be devastating for public television, and I believe it should not happen. I am also pleased that it requires that these new FCC regulations, quote, "protect the full functionality to consumers of equipment manufactured before January 1, 2006," unquote. This means that a person will still be able to use their old, antiquated analog VCR to make a copy of their favorite TV show so they can see it later. As we move forward, we must balance the need to protect intellectual property rights with consumers' right.

This leads me to what is bad about the bill. In this case, there is something missing. Considering the breadth of the bill, the lack of authorization for public TV to receive additional funding for the transition to digital is troubling. In the past few years, I and many of my colleagues to get funding put aside to help public TV transition. However, $25 million was lost because of a lack of authorization for such funds. I think there is a great case for assisting public television, and without assistance a great national treasure may not survive the digital transition.

Finally, there is the ugly. The ugly is what the reaction of our constituents will be if they wake up New Year's Day 2007, turn on their TV and see only snow. An end to the analog television signals on December 31, 2006 could also be the end of many of our congressional careers.

And I don't think anyone here on both sides of the aisle is interested in having that happen. Considering that there are about 650,000 people in each of our districts and in my district, for argument's sake, let us say there are 300,000 TVs, probably a low estimate, I would be surprised if there were even 100 digital televisions with digital tuners in them. Assuming that leaves about 210,000, or 70 percent, which are hooked up to cable, it still leaves 90,000 televisions and people who not be able to get a TV signal. That is a lot of people who would be forced to spend a great deal

of money. We must be very conscious of these people and cautious about what we ask of them.

Now there will be set-top boxes that will be available to receive digital signals and then translate them into an analog signal, but I am told that these devices cost $500 today and will be around $100 in 2006 to 2007. That is a lot of money to a family of four that survives on $20,000 per year, and I have a lot of families like that in my district. The fact is that I would be a lot more comfortable with such a deadline had the FCC required digital tuners in televisions long ago. Just think had these regulations gone into effect at the beginning of this 107th Congress, 50 to 60 million televisions would have been sold that would be capable of receiving a digital signal.

Also, the lack of cable interoperability remains a problem for consumers as well. The fact is we like plugging our TVs into the electric outlet, plugging the cable wire into the TV and sitting back and watching a ball game. And I should say sarcastically that most Americans enjoy that. We folks in New York, in the Bronx, Westchester and Rockland still cannot get the Yankees on Cablevision.

Thank you, Mr. Chairman. I look forward to hearing the testimony and the questions and answers of the panelists. And I yield back.

[The prepared statement of Hon. Eliot Engel follows:]

PREPARED STATEMENT OF HON. ELIOT ENGEL, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF NEW YORK

Mr. Chairman: This draft legislation reminds me of the title of an old Clint Eastwood movie—*The Good, the Bad, and the Ugly.*

Each of these adjectives could be applied to different parts of the bill—so let me take them in order.

The strong effort at content protection is the "Good" in this bill. For many years, Congress, the Administration, and private industry have struggled to come up with ways to deal with pirating music and video through traditional means of copying tapes and CDs. The advent of the internet eliminated the need for the tapes and CDs—now it is just thousands of bits of data on a computer hard drive and MP3 player.

Thus, I am very encouraged by the language in the draft bill that requires the FCC to create regulation that "all digital devices . . . recognize the use of a broadcast flag in order to prevent the unauthorized redistribution of marked digital terrestrial broadcast television content to the public *over the Internet.*"

The importance for developing such solutions cannot be understated. And, for me it hit home when I realized what could happen to public television without such protections. As you know, I have been a champion of public broadcasting for the 14 years I have served in Congress. I have done so because time and time again, public broadcasting has provided high quality, educational material for me and my family to enjoy.

However, public television does not produce all of its content. For example, National Geographic is owned by the News Corp/Fox Networks. National Geographic's programming is stellar. Yet, without some solid protections in place, National Geographic may be forced to use only it cable outlets. This would be devastating for public television and we cannot let that happen.

I am also pleased that it requires that these new FCC regulations "protect the full functionality t consumers of equipment manufactured before January 1, 2006." This means that a person will still be able to use their old antiquated analog VCR to make a copy of their favorite TV show so they can see it later. As we move forward, we must balance the needs to protect the intellectual property with consumer's rights.

This leads me to what is "Bad" about the bill. In this case, there is something missing. Considering the breadth of the bill, the lack of authorization for public television to receive additional funding for the transition to digital is troubling. In the past few years, I and many of my colleagues have sought to get funding put aside

to help public television transition. However, $25 million was lost because of a lack of authorization for such funds. I think case for assisting public television is clear. Without assistance, a great national treasure may not survive the digital transition.

Finally, there is the "Ugly." The "Ugly" is what the reaction of our constituents will be if they wake up New Year's day 2007, turn on their TV and only see snow. An end to the analog television signals on Dec. 31, 2006 could also be the end of many of our Congressional careers.

Consider that there are about 650,000 people in each of our districts, and in my district, let's say for argument's sake that there are 300,000 TVs—and that is a low estimate. I would be surprised if there are even 100 digital televisions *with digital tuners* in them. Assuming that about 210,000 or 70% are hooked up to cable, that still leaves 90,000 televisions—and people who would be able to get a TV signal. That's a lot of people who would be forced to spend a great deal of money. We must be very conscious of these people and cautious about what we ask of them.

Now, there will be "set-top boxes" that will be available to receive digital signals and then translate them into an analog signal. But, I am told that these devices cost $500 today, and will be around $100 in 2006-2007. That's a lot of money to a family of four that survives on less than $20,000 per year—and I have a lot of families like that in my district.

The fact is that I would be a lot more comfortable with such a deadline had the FCC required digital tuners in TVs long ago. Just think, had these regulations gone into effect at the beginning of the 107th Congress, 50 to 60 MILLION televisions would have been sold that would be capable of receiving a digital signal.

Also, the lack of cable interoperability remains a problem for consumers as well. The fact is we like plugging our TVs into the electrical outlet, plugging the cable wire into the TV and sitting back and watching a ball game. *Well, I should say most Americans enjoy that—we folks in the Bronx, Westchester, and Rockland still can't get the Yankees on Cablevision.*

Thank you, Mr. Chairman. I look forward to hearing the testimony and the Q&A of the panelists.

Mr. UPTON. For some reason I knew they weren't interested in the Mets.

At least in August.

Mr. ENGEL. Not this year, Mr. Chairman, but another year.

Mr. UPTON. I knew that was coming.

[Additional statements submitted for the record follow:]

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

Mr. Chairman, thank you for holding this hearing on legislation advancing the transition to digital television.

We all recognize the challenges that cable operators, broadcasters, content community, manufacturers and retailers face in making digital television a reality and main stay. As such, the light at the end of the tunnel is starting to grow bigger as the players in the different industries are working together in order to make DTV a reality.

The staff draft before this committee is a considerable first step in the right direction. First and foremost, the draft requires all TV sets sold or manufactured after Jan. 1, 2006, to recognize a broadcast flag, thereby permitting digital TV stations to obtain high value content, all the while allowing consumers free, over-the-air programming without limiting the consumer's ability to make personal copies.

The draft also prohibits the manufacturing of sets with analog outputs after July 1, 2005. This provision, along with future consensus watermark legislation, closes the analog hole and ensure the protection of intellectual property.

Furthermore, the staff discussion requires cable operators to transmit signals compatible with "plug-and-play" sets without need for set-top converter by July 1, 2005. I also support codifying the timetable phasing in DTV tuners in all sets 13 inches and larger, thereby jump-starting the stalled transition.

Mr. Chairman, I support requiring affiliates to pass through a network's entire digital signal without degradation. This allows consumers to be confident that when they make an investment in High-Definition sets, their sets will be able to experience digital broadcasts as intended. However, I want to bring to the Committee's attention a little-noticed and often overlooked, but critical component of America's transition to digital television, that of the use of digital studio-to-transmitter microwave links, which have not received approval by the FCC.

The absence of FCC approval for digital studio-to-transmitter microwave links is greatly complicating the move of many commercial and public television stations to digital, high-definition broadcasts. The FCC's delay in approving the use of these links will undermine one of the main components of the legislation we are considering today.

While the draft requires all network affiliates to pass-through high-definition signals sent by the major networks, without the FCC's immediate approval of the use of digital microwave studio-to transmitter links, the pass-through of high-definition signals will be impossible.

While the staff draft includes many positive elements to ensure the digital transition is not stalled, I would like to learn more on the provision requiring broadcasters to return their analog spectrum by Dec. 31, 2006, regardless of whether 85% of homes can receive a digital signal. My primary, and foremost concern is focused on the consumer. I would like to learn more from our witnesses on the ramifications of such a provision, particularly, if it risks turning consumers' sets obsolete.

Additionally, Florida is the home of several broadcast companies focusing on programming for underserved and distinct constituencies including religious, Spanish-language and family-friendly genres. Many of these stations are smaller and independent and not part of the major network groups. Their service is invaluable in bringing local and varied viewpoints to my district, state and country. On a regular basis, these broadcasters remind me that must-carry requirements established in the 1992 Cable Act have been the backbone of their existence. We must now determine how must-carry applies to digital television.

During a hearing held by this committee last year, I asked FCC Chairman Michael Powell how the current FCC "primary" or one channel rule affects small and independent broadcasters. To paraphrase his response, he indicated that a lack of multicast must-carry would have a negative and disproportionate impact on these stations. As cable operators and broadcasters take advantage of advanced technology to increase channel capacity in correlating increments, is it reasonable to relegate broadcast carriage on a cable system to only one channel instead of passing the entire 6 MHz through should a broadcaster choose to multicast? We must decide how to strike a balance between cable and broadcasters to continue the success of the 1992 Cable Act must-carry provisions in spurring diversity in the television medium. As we review how must-carry will apply to digital television, I ask my colleagues not to lose sight of the need for broadcast independence and localism.

Mr. Chairman, I look forward to working with you, and this committee, to ensure consumers realize the full benefits of high-definition television services in a timely manner. Thank you.

PREPARED STATEMENT OF HON. CHIP PICKERING, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF MISSISSIPPI

Mr. Chairman, I thank you for holding this hearing today and for showing the foresight to begin to force some closure to this issue of digital transition. This is a very complex and technical issue that must be addressed in a concise and timely fashion. I would just start by reminding our witnesses in attendance—and to the rest of the industry—that you should not walk away from your ongoing efforts to resolve some of these issues on your own. I believe the Chairman and the rest of the Committee would welcome the industry reaching a broad consensus. But the fact is that many of us are concerned you are not making the needed progress to ensure a timely transition.

With that said, let me address a few issues that I have noted in the staff draft.

WJTV a CBS affiliate in Jackson, WMPN a PBS affiliate also in Jackson, and WDAM a NBC affiliate in Hattiesburg, have literally mortgaged their futures to bring my constituents the promise of digital television. Mr. Chairman I am concerned that with the elimination of the "85% penetration standard" my constituents may be adversely affected.

If our constituents can no longer rely on free, over-the-air analog television services on January 1st 2007 where will they turn when the next weather emergency hits? We must propel the transition forward, but we cannot shut off analog TV stations just as consumers are beginning to buy digital sets. These local stations provide lifeline services that must be maintained in the digital era.

Mr. Chairman I also note that the draft legislation does not fully implement a broadcast flag until January 1, 2006. Many of our broadcasters and networks are doing a good job of broadcasting in HD format today. In order to encourage their commitment to provide this "digital" content, it seems as if we may need to implement the broadcast flag as soon as technically possible.

Lastly, I would note that at some point in the near future, we need to address the authorization levels for Public Broadcasting to ensure that funds are there to ensure its transition to the digital age.

I thank the Chairman and the staff for their hard work and look forward to working with the Committee on this issue

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PREPARED STATEMENT OF HON. TOM DAVIS, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF VIRGINIA

Mr. Chairman, I would like to thank you for your continuing effort to facilitate the difficult transition to digital television in this country.

I believe the discussion draft that you, Chairman Tauzin, and Ranking Members Markey and Dingell, have developed with your staffs will serve as a catalyst to finally resolve some of the tough issues that have bogged down the digital conversion for years. There are still difficult choices to make, but I think it is time to get on with the business of completing the transition. There are far too many important uses for the spectrum that would be made available to unnecessarily prolong this evolution.

One specific matter I would like to mention is the authorization of funding for public television's conversion to digital broadcasting. I fully appreciate that the discussion draft before us might not have been the best place to include a review of the need for such authorization; however, it is an important topic that merits serious discussion in the near future.

Once again, I thank you for calling this hearing and am eager to hear the testimony of the witnesses.

Mr. UPTON. I am delighted with the panel that we have assembled today, and I would just remind all of us that we are going to have to have some strict adherence to the clock, because not having proxy voting in the House we have a full committee markup at two, which is going to require all members to be downstairs. So your statements are all made part of the record. I would really like to keep your remarks at 5 minutes, if you could summarize those statements, and I will be quick with the gavel with members' questions which will follow.

For those in the audience, let me just go through the witness list, the impressive witness list that we have this morning. Led off by Mr. Robert Wright, chairman and CEO of NBC; Mr. Richard Lewis, chief technology officer from Zenith; Mr. Michael Willner, vice Chair and CEO of Insight Communications, on behalf of the National Cable and Telecommunications Association; Ms. Lana Corbi, president and CEO of Crown Media USA for the Hallmark Channel, on behalf of the National Cable and Telecommunications Association; Mr. Jim Gleason, president of Cable Direct, on behalf of the American Cable Association; Mr. Alan McCollough, chairman and president and CEO of Circuit City, on behalf of Consumer Electronics Retailers Coalition; Ms. Thera Bradshaw, president of the Association of Public Safety Communications Official International from California; and Mr. Gene Kimmelman, senior director of Public Policy for the Consumers Union here in DC. And to introduce our last guest, I would yield to my friend, Mr. Sawyer.

Mr. SAWYER. Thank you very much, Mr. Chairman. Although Mr. Brown jumped the gun a little bit, I am pleased to welcome Ohioan, Michael Fiorile, who will be testifying today on behalf of the National Association of Broadcasters. Mr. Fiorile is the CEO and president of the Dispatched Broadcast Group, which includes WBNS-TV and WBNS AM-FM radio in Columbus, as well as the Ohio News Network, Ohio's own 24-hour cable news channel. As an operator of both broadcast and cable television entities, Mr. Fiorile

is in a position to provide an interesting perspective on this issue. With that, I yield back.

Mr. UPTON. Thank you. Ladies and gentlemen, you will each have 5 minutes. Mr. Wright, we will begin with you. Welcome.

STATEMENTS OF ROBERT C. WRIGHT, CHAIRMAN AND CEO, NBC, INC.; MICHAEL FIORILE, PRESIDENT AND CEO, DISPATCH BROADCAST GROUP, ON BEHALF OF NAB/MSTV; RICHARD M. LEWIS, CHIEF TECHNOLOGY OFFICER, ZENITH ELECTRONICS CORPORATION; MICHAEL S. WILLNER, VICE CHAIRMAN AND CEO, INSIGHT COMMUNICATIONS, ON BEHALF OF NATIONAL CABLE AND TELECOMMUNICATIONS ASSOCIATION; LANA CORBI, PRESIDENT AND CEO, CROWN MEDIA USA FOR THE HALLMARK CHANNEL, ON BEHALF OF NATIONAL CABLE AND TELECOMMUNICATIONS ASSOCIATION; JAMES M. GLEASON, PRESIDENT, CABLE DIRECT, ON BEHALF OF AMERICAN CABLE ASSOCIATION; ALAN MCCOLLOUGH, CHAIRMAN, PRESIDENT AND CEO, CIRCUIT CITY STORES, INC., ON BEHALF OF CONSUMER ELECTRONICS RETAILERS COALITION; THERA BRADSHAW, PRESIDENT, ASSOCIATION OF PUBLIC SAFETY COMMUNICATIONS OFFICIALS INTERNATIONAL; AND GENE KIMMELMAN, SENIOR DIRECTOR OF PUBLIC POLICY, CONSUMERS UNION

Mr. WRIGHT. Thank you, subcommittee Chairman Upton and Congressman Markey, full committee Chairman Tauzin and Congressman Dingell and members of the subcommittee. Thank you for giving me the opportunity to present NBC's views on America's transition to digital television.

As members of this committee, you are all too aware the DTV transition is not moving forward as rapidly as many of us would like. Despite the enormous investments and efforts on the part of affected industries, NBC alone has invested over $100 million in facilities to make available DTV and high-definition programming, with probably another $200 million to go over time, especially in the production area. Substantial unresolved issues remain.

These issues raise complexities which either from a legal, technical or business perspective are daunting. May I suggest with full appreciation of the enormous resources that have been and continue to be devoted by so many to this effort that we step back a few feet and view this transition in very basic terms.

First, what is our goal? The Congress and especially this subcommittee has been clear for a long time, that we should strive to complete the digital television conversion as quickly as possible, targeting the end of 2006. The staff discussion draft released last week reaffirms that determination. That means DTV penetration must be accelerated and ubiquitous. How do we achieve this objective? The answer is ultimately lies with the consumer. All of us today have promised a great deal to consumers about the wonders of digital television and the revolution taking place. We must deliver now on those promises, and we must deliver content to consumers that is better than they currently experience, but we must do it in a way that is at least as easy, functional and affordable as it is today. We should not need to reinvent the wheel to achieve these consumer-friendly objectives.

The analog television model has served our Nation extremely well. We have nearly 100 percent analog television penetration. Let us examine that model. Today, a consumer can walk into a retailer, such as Circuit City, and purchase a very affordable, decent-sized analog television set. There is never any question in the consumer's mind about certain things. For instance, that the television will receive all the over-the-air signals and that it will be portable anywhere in the United States. If that consumer desires cable, he or she will be able to plug their cable-ready television into the cable without a set-top box. Again, a functionality that television will have anywhere in the United States and with any cable system to which they may subscribe.

They will also receive local broadcast signals unencrypted on a low-cost basic tier, and they will receive those signals without degradation. It is simple, it is easy, it is affordable and it is complete. Our analog television experience today, as low tech as it might be compared to the wonders of digital technology, provides an invaluable model for how to drive consumer acceptance and the use of this new form of television technology.

If consumers are to embrace a relatively new form of television, it is essential that a very minimum we meet their expectations in terms of what they experience and receive from television today. But beyond that, we must ensure that all the benefits possible with DTV actually reach consumers in its intended richness and quality.

Consumers must have access to the most desirable content available and have sufficient flexibility in the manner they utilize that content. High-end content will not become available unless content owners have confidence that the digital works they release, regardless of the distribution method, are protected from illegal piracy and instantaneous, unauthorized transmission over the Internet.

NBC supports the broadcast flag as a technical solution to that goal and the need to require consumer electronics equipment to the flag. I would caution, however, that any DTV content protection system must respect consumers' traditional expectations to record and otherwise use digital broadcast content for non-commercial purposes within their digital networks.

Consumers must have access to affordable DTV receivers that receive all over the air channels, including digital channels. We believe the Commission's decision requiring a DTV tuner in every set is a major step forward in that direction. And we applaud Chairman Powell and Congressman Markey for their leadership on that issue. Consumers must have the ability to connect their cable directly to DTV. The majority of cable subscribers today do not rely on a set-top box and do not want to be told that the conversation to digital eliminates that option and convenience.

Consumers must have access to all of the free over-the-air services broadcasters provide in their original quality and robustness, whether they subscribe to cable or receive it over the air. This includes all multicasts and high-definition television. Cable operators and broadcast affiliates alike must do everything necessary to ensure their viewers are actually able to receive broadcast high definition and multicast services being made available. We must not disenfranchise whole segments of the population from receiving DTV's most innovative and desirable services.

If Congress is serious about accelerating DTV penetration, I would submit that there are the must haves—there are must haves for reaching that goal. We must have a consumer-friendly, consumer-driven transition. We must have consumers eager to replace their analog television with the DTV model. They must have content. They must have simplicity, they must have affordability and above all they must have access to all of the benefits, including high-quality content that digital television makes possible. The promises we have made to consumers about this being a revolution in their television experience must be kept. And while I prefer not to get into the business of telling legislators how to legislate, I will say this: To the extent that Congress and the FCC determine the tradeoffs and compromises and these must haves are necessary, please understand that those decisions will directly impact the pace of consumer acceptance and the use of DTV.

For the past 15 years, Energy and Commerce Committee, Telecommunications Subcommittee first under the leadership of Congressman Dingell and Markey and now under Chairman Tauzin and Upton, have provided constant and inspired leadership in developing advanced television services. Last week's release of the staff decision discussion of the draft of omnibus to DTV legislation continues that honorable tradition. It addresses in some fashion many of the points I have made. There is a place keeper for multicasting that will ultimately be filled in consistent with my testimony. NBC has a concern about the 2006 hard deadline for cutoff of analog transmission that is proposed in the draft because of its potential to disenfranchise millions of consumers.

Notwithstanding this reservation——

Mr. UPTON. Mr. Wright, I am sorry to gavel you down, but I just know that we are under a real tightened constraint, and I am——

Mr. WRIGHT. Okay. Sorry, Mr. Chairman.

Mr. UPTON. Despite the nice words, they got you a little extra time.

[The prepared statement of Robert C. Wright follows:]

PREPARED STATEMENT OF ROBERT C. WRIGHT, PRESIDENT AND CEO, NATIONAL BROADCASTING COMPANY, INC.

THE DTV TRANSITION THROUGH CONSUMERS' EYES

Subcommittee Chairman Upton and Congressman Markey, Full Committee Chairman Tauzin and Congressman Dingell, and Members of the Subcommittee, thank you for giving me the opportunity to present NBC's views on America's transition to digital television. I and other senior NBC executives have been privileged to appear before this Subcommittee several times over the past decade to discuss digital television service, and I welcome the chance to provide a fresh look at where things stand and what remains to be done to complete successfully the conversion to digital television.

As the Members of this Subcommittee are all too aware, the DTV transition is not moving forward as rapidly as many of us would like. There are a number of unresolved issues, the complexity of which, either from a legal, technical or business perspective, is daunting. May I suggest with full appreciation for the enormous resources that have been and continue to be devoted by so many to this effort, that we take a step back and view this transition in very basic terms.

First, what is our goal? The Congress and especially this Subcommittee has been clear that we should strive to complete the digital television conversion as quickly as possible, targeting the end of 2006. The staff discussion draft released last week reaffirms that determination. That means DTV penetration must be accelerated and ubiquitous. At NBC, that is our operating assumption.

How do we achieve that objective? The answer ultimately lies with the consumer. All of us here today have promised a great deal to consumers about the wonders of the digital television revolution. We must deliver on our promises. We must justify the investments we are asking consumers to make to adopt digital television.

What will it take for consumers to embrace digital televisions? First, the consumer must get better content than their analog television experience. Second, consumers should be able to gain access to digital television in the same manner, and with the same ease, that they have become accustomed to in the analog world, whether they receive their television over-the-air or over cable or satellite. Third, consumers should receive greater and certainly not less functionality in their consumer electronics products, including display and recording devices. Finally, the transition must be affordable.

How do we fulfill these consumer-friendly objectives? I suggest that we do not need to and should not reinvent the wheel. The analog television model has served our nation extremely well. We have nearly 100 percent analog television penetration. So let's take a look, from the consumer's perspective, at the analog television experience, what makes it as widely accepted as it is today, and then let's apply those lessons to DTV.

Today, a consumer can walk into a retailer such as Circuit City and purchase a very affordable, decent-sized, analog television set. There's never any question in the consumer's mind about certain things—for instance, that the television will receive all over-the-air signals and that it will be portable anywhere in the U.S. If that consumer desires cable, he or she will be able to plug their cable ready television into the cable, without a set-top box—again, a functionality that television will have anywhere in the U.S., with any cable system to which they may subscribe. They also will receive local broadcast signals, unencrypted, on a low-cost basic tier, and they will receive those signals without degradation. It's simple. It's easy. It's affordable. It's complete. Our analog television experience today, as "low-tech" as it might be compared to the wonders of digital technology, provides an invaluable model for how to drive consumer acceptance and use of this new form of television technology.

Let's deal with some specifics of how we implement or, where necessary, adapt the analog model to the digital universe.

HIGH QUALITY CONTENT

Exciting, high quality content will drive consumer acceptance of digital television. Certainly, high definition will play an important role because of the dazzling video and audio clarity it offers viewers. Digital technology, however, also creates the possibility of new programming forms, utilizing accompanying data, graphics, and different camera angles to educate and entertain the viewer and to make television a far more interactive and informative experience than it is today. Broadcasters need to explore and experiment with the full panoply of programming opportunities to develop the optimum mix for their viewers.

NBC and the other major broadcast networks are ramping up our high definition programming. NBC has invested approximately $100 million in facilities and infrastructure to make available high definition programming. NBC, like CBS, broadcasts high definition in the 1080i format, providing the highest resolution possible. NBC plans to increase its high definition programming to 60 percent of its prime time and late night lineup, plus special events, movies and sports. CBS and ABC already are meeting or exceeding Chairman Powell's HDTV targets set forth in his April 2002 voluntary initiative. Fox promises other high-value content.

Content owners simply will not continue to release high definition and other high quality programming unless they have confidence that the digital works they release, regardless of the distribution method, are protected from illegal piracy, and especially from instantaneous, unauthorized retransmission over the Internet. Although piracy of copyrighted works has been a problem in the analog world, it is far more acute with DTV where it is possible to make nearly unlimited copies of digital content without degradation. NBC supports the use of the broadcast flag as an acceptable means, technically, for protecting over-the-air digital content. But let's remember that the flag itself is just a data bit. To work as it is intended, there must be an enforcement mechanism for digital television receivers and other consumer electronics and computer equipment to recognize and respect the broadcast flag when it is present. Encryption and/or watermarking can and should also respect the traditional expectations of consumers to record and otherwise use digital broadcast content for noncommercial purposes within their digital networks.

High Definition and Other High Quality Digital Programming Must Be Made Available to Viewers By Network Affiliates, Cable and Satellite

Broadcast Affiliate Responsibilities

If the broadcast networks' commitments to provide HDTV and innovative multicast programming is to translate into a revolutionary viewing experience for consumers, the digital broadcast signal—in all its richness and variety—must reach consumers.

NBC's owned and operated stations are leading the way. A majority of them are transmitting full power digital broadcast signals, and we expect that problems hindering the others, such as the siting difficulties in New York following the September 11, 2001 terrorist attacks on the World Trade Center, will be resolved within a year. Additionally, NBC is focused on integrating our newly acquired Telemundo stations into our digital plans.

Within the broadcast world, however, tens of millions of viewers will not be able to enjoy high definition programming unless network affiliates pass through the HD signal. High definition is negated if a network affiliate only retransmits the network feed in standard definition. In that respect, I am very pleased that the Committee staff discussion draft requires affiliates to pass through our high definition feeds without degradation. Broadcasters must purchase the necessary equipment to do so. Similarly, affiliates must be broadcasting at sufficiently high power so that viewers who now receive a good over-the-air analog signal also can receive a digital signal. It is not enough that a small subset of viewers living close to a tower receive HDTV broadcasts. Suburban and rural consumers also must realize those benefits.

Cable and Satellite Carriage

A rapidly decreasing number of American TV households are receiving broadcast programming over the air. Roughly 70 percent receive it over cable and perhaps another 10 to 15 percent receive it over satellite. For those viewers whose primary television set in the home is hooked up to cable or DBS, it is critical that they are able to view and use all of the programming and data services broadcasters provide as part of their DTV offerings.

Although NBC's owned and operated stations, and the vast majority of its affiliates, obtain cable carriage through retransmission consent agreements, the FCC rules governing must carry are important in establishing fundamental parameters for these agreements. Again, the analog model for must carry codified in the 1992 Cable Act is an excellent starting point. It is essential that the concept of digital must carry encompass carriage of the entirety of the broadcast signal, including all video, audio and data. Virtually every conceivable business model for broadcaster utilization of digital technology envisions some multicasting—in addition, in most instances, to HDTV. Multicasting increases diversity in programming. It increases competition. It is good for consumers, who will benefit from increased amounts of educational and information programming. Similarly, broadcasters can use digital technology to offer data, providing such "value-added" features as statistics, related articles or scholarly works transmitted with digital programming. Cable consumers should have guaranteed access to the full breadth of technological and information benefits that DTV offers. Thanks to advances in digital compression, a cable operator will be able to fulfill such a carriage obligation using approximately half the capacity on its digital cable system that it currently uses to provide carriage of an analog broadcast signal.

Similarly, as in analog, it should be very clear that cable and DBS operators should not degrade the HDTV broadcast signal as they retransmit it to their subscribers. Again, the principle should be clear: the viewer should receive the high definition signal the broadcaster sends.

Consumers Must Have Access to The Receiving Equipment They Need to View High Definition and Other High Quality Digital Programming.

The final piece of the puzzle to assure consumer satisfaction is the widespread availability of digital television receivers at progressively more affordable price points. This equipment can range from simple digital to analog converters to be used with existing analog television sets, all the way to 65-inch fully featured, integrated DTV receivers.

Just last month, the FCC took a very important step in this direction by requiring consumer electronics manufacturers to incorporate digital tuning capability in their television sets and VCRs on a phased-in schedule to be completed by July 1, 2007. We join Congressman Markey, who has urged the Congress and the FCC to adopt such a requirement for the past five years, in applauding the FCC's decision. This will expedite the DTV transition and is essential to those viewers receiving DTV broadcasts over the air.

But what of the viewer receiving DTV broadcasts over cable? Today, approximately 50 percent of cable subscribers receive their programming without a set-top box by simply plugging "cable-ready" television sets in to the cable coming out of the wall. We must be able to replicate that "plug and play" compatibility for digital television. Again, the analog model applies. When a consumer seeking to purchase a digital television receiver walks into a retail store like Circuit City and asks the salesperson, "does it work with cable?", the salesperson must be able to give a one-word, unequivocal answer: "Yes."

Conclusion

For the past 15 years, the Energy and Commerce Committee and the Telecommunications Subcommittee, first under the leadership of Chairmen Dingell and Markey and now under Chairmen Tauzin and Upton, have provided constant and inspired leadership in developing advanced television services. Last week's release of the staff discussion draft of omnibus DTV legislation continues that honorable tradition. It addresses in some fashion many of the points in my testimony. There is a placekeeper for multicasting that I hope ultimately will be filled in consistent with my testimony. NBC has concern about the 2006 "hard" deadline for cut-off of analog transmissions that is proposed in the draft, because of its potential to disenfranchise millions of consumers. Notwithstanding this reservation, the draft legislation makes clear that there must be increased and accelerated inter-industry cooperation to resolve all outstanding issues in the DTV transition or Congress and the FCC will resolve them for us. NBC hears the message, and is prepared to rededicate itself to accelerating the conversion to digital television.

The way to get there is to look at the challenges through the eyes of consumers, building upon the analog model that has served our nation so well. Consumers must get something not just somewhat better than what they currently have, but rather something that lives up to what they've been promised: a revolutionary improvement—in terms of quality, flexibility and diversity—in their television experience. It is time to get the job done, but as importantly, we must get the job done right.

I welcome any questions that you may have.

Mr. UPTON. Mr. Fiorile.

STATEMENT OF MICHAEL FIORILE

Mr. FIORILE. Mr. Chairman and committee, my name is Michael Fiorile. I am president and CEO of the Dispatch Broadcast Group. I also serve as television Chair of the National Association of Broadcasters and the Executive Committee of the Association for Maximum Service Television.

Let me begin by thanking the committee for taking what are critical first steps. The recently circulated staff draft makes significant strides with the DTV tuner, broadcast flag and cable compatibility provisions. For 5 years, broadcasters have advocated for legislation on DTV and the mere recognition that a bill is needed is an important step in itself. As FCC Chairman Powell observed last August from the beginning, the transition to digital has thus far been industrial policy. Broadcasters have invested billions of dollars to bring digital television to American consumers.

Our stations in Indianapolis, Indiana and Columbus, Ohio, have met government-imposed rules regarding construction, power levels, running multiple transmitters at a cost of millions of dollars. All of use must assist consumers in this transition. Broadcasters want to expedite the transition. And the bottom line is if the government wants to reclaim the spectrum, it must take steps to further accelerate the over-the-air transition.

Our position supports three fundamental congressional objectives approved the Supreme Court: preservation of a robust, free, over-the-air television system promoting a multiplicity of voices, especially for non-cable homes, and promoting competition.

Broadcasters oppose any provision that would prematurely cut consumers off from analog signals. In 1997, when Congress established the 2006 deadlines, not as telecommunication policy but as budget policy, Chairman Tauzin and members of the committee wisely assured that 85 percent of consumers in any given market would be able to receive DTV signals before ending analog broadcasting that market. By eliminating that 85 percent consumer safeguard, this draft could disenfranchise millions of viewers and would do irreparable damage to free over-the-air broadcasting.

As the CBO has recognized, cable carriage is central to the transition. Congress should mandate that cable companies carry both, broadcasters' analog and digital signals during the transition period. And the swifter the transition, the more quickly the government and will reclaim the spectrum. A traditional mandate would also protect analog viewers during the switch. Unfortunately, the staff draft not only fails to take this important step, but prohibits it from being taken in the future.

Congress should also mandate that all free over-the-air DTV services be carried on cable. Digital television, as you know, allows broadcasters to serve their communities in a variety of new ways. Our position is simple: We are licensed to provide an over-the-air service to all Americans. All of the digital bits of information that we supply to our communities for free should be carried on cable without degradation. Cable should not be allowed to invade these bitstreams to anti-competitive purposes. These free bits must flow.

While high-definition television remains central to industry plans, options exist also to provide community-specific news, regionally focused weather alerts and multicasting of popular sporting events as well as other services. Any meaningful legislation must also recognize the value of these offerings. Doing so will provide the incentives needed for stations to develop innovative new TV services for both cable and over-the-air viewers, thereby advancing the goals of competition and the multiplicity of voices and promoting the free over-the-air broadcast system. We recognize the staff draft leaves this issue open, and we welcome the opportunity to work with the committee.

Cable companies argue that their capacity would be unduly burdened by new carriage requirements, but make no mistake about it, cable company capacity arguments are in fact a classic red herring. Cable's own capacity figures given to the FCC show that by the end of next year 86 percent of cable subscribers will receive more than 300 channels. Transitional carriage requires less relative burden on cable capacity today than the 1992 Cable Act required. And transitional carriage would only apply during this transition.

Mr. Chairman, the group with the most at stake in this transition, as you know, are consumers, and at the end of the day, as we have heard, only when a consumer can purchase a digital television set from a local retailer, take it home, plug it in and begin enjoying digital television through cable or over the air, only then will the end of this transition be in sight.

[The prepared statement of Michael Fiorile follows:]

PREPARED STATEMENT OF MICHAEL FIORILE, PRESIDENT AND CEO, DISPATCH BROADCAST GROUP

INTRODUCTION

This written testimony presents the positions of the National Association of Broadcasters on the digital television (DTV) transition. The testimony explains the costs stations incur to convert to digital and outlines the current status of the DTV rollout in the United States.

The testimony also describes existing impediments to the transition and enumerates the legislative remedies necessary to overcome these remaining hurdles in the context of the recently circulated staff discussion draft. While the draft would tackle several key obstacles to the transition, it also falls perilously short in a number of areas. Even more concerning, the draft would force cessation of analog broadcasts by 2006. In 1997, then Subcommittee Chairman Tauzin and the full Committee prudently recognized the need to protect consumers from a premature end to analog broadcasting. Congress therefore dictated that 85% of consumers in a market must be able to receive all local broadcasters' signals before analog broadcasting ends in that market. The draft legislation would do away with this pro-consumer measure—to the detriment of the viewing public.

Lastly, this testimony explains the Digital TV Zone program, an initiative undertaken by the broadcast industry to expand consumer understanding of and enthusiasm for the DTV transition.

COSTS OF THE TRANSITION

The transition to digital television is the biggest change in the television broadcast industry since television began. While such a watershed change will ultimately yield great benefits to the viewing public, the costs of undergoing such a transition are enormous for the television stations involved. The over-the-air television broadcast industry is literally mortgaging its future to bring digital television to the American consumer.

Putting a new DTV signal on the air involves large capital investments in new towers or construction on previous towers, new transmission lines, antennae, digital transmitters and encoder, consultants, licensing, construction crews, and other capital expenditures. Together, these expenditures will amount to between $3 and $10 million per station and are incurred without a guarantee of any additional revenue. Even after a station is on the air in digital, it must absorb the increased energy costs associated with simultaneously transmitting both a digital and analog signal. During the transition, when transmitting in both formats, stations often spend about $6,300 per month in increased energy costs.[1]

These costs are felt most acutely by stations in smaller, more rural markets. Although the FCC's decision allowing small market stations to begin their digital broadcasts with lower wattage has alleviated some of the dual electrical costs described above, the other transition costs such as tower construction, new antennae and new transmission lines remain relatively constant between large and small markets. While stations in rural markets must make expenditures like these similar to their urban brethren, their revenue sources are also significantly smaller. As a result, the transition to digital is proportionally a much larger investment for small market stations. In fact, for many small market stations, the cost of going digital is often significantly more than the value of the analog station itself.

STATUS OF THE TRANSITION: REASONS FOR OPTIMISM

Despite the costs television broadcasters must endure to make the digital switch, there are reasons to be cautiously optimistic about the transition. First, while some stations are struggling to convert (particularly those in smaller markets), a vast majority of U.S. television households are now being served by a digital signal. Currently, 475 stations in 143 markets are broadcasting digital signals (See Appendix A). This coverage means that 90% of U.S. television households are in a market served by at least one digital signal. Moreover, *45% of all U.S. TV households* are in markets where broadcasters are delivering *four or more DTV signals.*

An explosion of digital television programming over the past year has further accelerated the transition. The upcoming television season will feature more than 2000 hours of on-air digital programming. (See Appendix B for a complete list of DTV primetime programming currently airing or planned for the Fall season). This

[1] GAO Report, "*Many Broadcasters Will Not Meet May 2002 Digital Television Deadline*," April 2002, page 16.

represents a doubling in available digital network programming since September of last year.

Compelling high-definition content has not been limited to primetime. CBS Television has announced an expanded partnership with Samsung Electronics America and Sears, Roebuck and Co. that will again allow consumers to enjoy a full season of college sports broadcast in HDTV. Following the success of the very first full season of college football games broadcast in HDTV in 2001, football broadcasts will expand from 12 to 15 games, and, for the first time, two regular season college basketball games will join the lineup.

Samsung and Sears have also partnered to produce the "HDTV Game Day" promotion in which Sears' full-line stores across the U.S. will show a high level game each week during the regular season on a Samsung HDTV. The in-store broadcasts will be shown in a setting that allows consumers to compare an HD broadcast with that of analog television.

In terms of available hours of digital programming, the DTV transition has far outpaced the most recent comparable transition when the industry moved from black and white to color. During the first year of color television in the 1950s, only 68 hours were offered to viewers. As the transition moves forward, we can only expect content providers will produce more and more programming in digital and in HDTV.

Finally, the August 8th decision by the Federal Communications Commission to begin a phased-in mandate of digital tuners into new television sets will build upon this momentum. Of the 25 million analog-only television sets sold last year, less than one percent are capable of receiving digital signals. The Commission's decision recognizes that every analog-only set that is sold only serves to prolong the transition. The ruling will help correct this problem and will also spare consumers obsolescence problems when the transition to digital is completed. As Telecommunications Subcommittee Chairman Upton has observed, the transition is ultimately about the consumer.[2] As we will outline in further detail below, the Commission's tuner decision is the most consumer friendly of all the available options.

REMAINING IMPEDIMENTS TO THE TRANSITION AND RECOMMENDED LEGISLATIVE REMEDIES

Cable Carriage—the Next Piece of the Puzzle

With cable acting as the gatekeeper to 70% of U.S. television households, clearly cable carriage of digital television signals is the next piece of the DTV puzzle that must fall into place to see the transition completed. As early as 1999, the Congressional Budget Office recognized that cable carriage of digital signals will be necessary for a timely and successful transition, when it stated, "[t]he availability of digital programming on cable systems is a necessary though not sufficient, condition for a timely transition."[3] Regardless of any pledges for future action, today only a handful of cable MSOs carry local stations' free, over-the-air digital signals.

Future DTV policy must remedy several cable carriage issues. First, and foremost, in light of the FCC's rejection of so-called "dual" carriage (or more accurately "transitional carriage"), Congress must act to ensure that both digital and analog signals receive carriage during the transition. We believe that transitional carriage of both signals is, in fact, required by the 1992 Cable Act and would pass any constitutional challenge. Due to the vast expansion of cable capacity, carriage of both analog and digital signals would occupy *far less* of an average cable system's capacity *than carriage of analog signals alone took up in 1993.* Secondly, as DTV makes it possible for broadcasters to offer consumers a variety of services, carriage obligations must be applied to all free, over-the-air services that broadcasters transmit. Lastly, it must be ensured that Program and System Information Protocol (PSIP) data is carried in the digital world so that consumers continue to receive channels, ratings, closed-captioning and other critical information. Cable systems cannot be permitted to disable consumer features that build upon PSIP information.

Transitional Cable Carriage

To date, the FCC has yet to complete its proceeding on digital must carry. After several years of inactivity, the FCC issued a partial *Report and Order* in early 2001, refusing to require dual carriage of a station's analog and digital signals. With the Commission ruling against so-called "dual-carriage" it will take Congressional action

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[2] "In the final analysis, this is about our constituents, our consumers." Chairman Fred Upton, speaking at *Digital Television: A Private Sector Perspective on the Transition* Hearing Before the Subcommittee on Telecommunications and the Internet, March 15, 2001.

[3] *Completing the Transition to Digital Television,* Congressional Budget Office Report, September 1999

to require carriage of both the DTV and analog signals through to consumers, both to protect analog viewers and broadcasters and to entice viewers to purchase DTV sets and speed the transition along. The absence of transitional carriage is slowing the pace of the transition and frustrating the return of analog spectrum. The decision to not only forego transitional carriage in the draft, but moreover, to also prohibit future transitional carriage mandates could slow consumer purchases of DTV receivers, further slow the transition, and reinstate cable's bottleneck power over their broadcast DTV competitors. Section 6 of the draft should be rewritten to include a strong transitional carriage rule.

Adaptation of Carriage Provisions to the Digital World

As digital television evolves, local broadcasters will be better able to serve their communities with a whole range of new free, over-the-air services. While High Definition TV promises unparalleled viewing and remains central to most broadcasters' DTV plans, stations might also use their DTV capabilities in other ways such as time-shifting popular programming to a second or third channel, offering community specific local news programming, and issuing regionally specific weather alerts. Any meaningful DTV policy must recognize the potential value of these new offerings to consumers and extend to them the carriage rights that will ensure they are accessible by consumers.

The legislative history of the Communications Act shows that Congress intended to see carriage rights adapted for the digital era. The statutory must-carry provisions, while applicable to digital, were written during the analog era when digital television was largely viewed as the distant future. The provision itself recognizes this, directing that certain provisions of the carriage rules will need to be adapted for digital television.[4] In 1996, when crafting the Telecommunications Act, Congress again showed its support for supplemental digital services in granting what was then referred to as "Broadcast Spectrum Flexibility."[5] NAB strongly urges Congress and the Committee to take this legislative history into account and to protect the future growth of these exciting new digital services. The most straightforward way to do this is by codifying previous Congressional intent in any future legislation and ensuring that all free services in broadcasters' 6 MHz signals are to be carried.

The cable industry continues to argue for a narrow and rigid interpretation of the terms "primary video" and "program related" in order to permit cable systems to strip parts of local DTV signals. Such a restrictive paradigm would allow cable to exercise its monopoly-like powers and thereby deprive consumers of new and free DTV services. The Commission already uses pay versus non-subscription to define ancillary and supplementary services.[6] Congress should extend this reasonable, "bright line" test to determine carriage obligations.

The draft has yet to stake out a position on this critical issue. Including language to ensure carriage of all free, over-the-air DTV services would help achieve Congress' clear intention of preserving a robust free, over-the-air broadcasting system for both cable and non-cable homes and would also expand the available DTV services for the benefit of all consumers.

Program and System Information Protocol (PSIP)

Program and System Information Protocol (PSIP) data that is transmitted along with a station's DTV signal, tells DTV receivers important information about the station and what is being broadcast. In addition to providing consumer friendly channel numbering and navigation information, PSIP technology is the only standard that can provide consumer purchased receivers with program rating information. Additionally, digital closed captioning is dependent on PSIP to tell the receiver that captioning is present, how the data is to be formatted for display, and to inform the receiver when more than one caption service is present. There are no other standards or recommended practices that guide receiver selection among captioning services.

Cable carriage of broadcast PSIP information is critical for receivers to be able to operate PSIP-based services. The staff discussion draft is silent on this matter. NAB strongly urges mandating carriage of PSIP data.

Cable's Capacity Arguments are Disingenuous

On all of these issues, the cable industry has repeatedly asserted that it is restrained by capacity and, moreover, that burdening cable systems' capacities calls into question the constitutionality of certain carriage mandates. In recent years, as

[4] 47 US Code Sec. 534(b)(4)(B)
[5] House Report 104-458, Telecommunications Act of 1996, Title II, Section 336
[6] 5th Report and Order, MM Docket No. 87-268, April 3, 1997, ¶31

cable's capacity has exploded, arguments regarding capacity have been rendered moot. Cable's cry of limited capacity is a classic red herring argument.

As the responses to the Commission's survey of MSOs in 2001 showed, 86 percent of cable subscribers will be served by systems with 750 or more MHz capacity by the end of next year. NAB retained an independent consultant—Merrill Weiss Group (MWG)—to evaluate the data submitted to the FCC by the cable industry. MWG found that by the end of 2003, the *average* cable subscriber will have 725.2 MHz of bandwidth delivered (an increase from 622 MHz from year end 1999). This calculates into a capacity range of 261.8 to 295.7 program services[7] delivered to the average subscriber by the end of 2003. MWG also concludes that, by year-end 2003, the relative burden of carrying both DTV and analog signals will be less than the initial must carry/retransmission consent burden imposed in 1993.[8]

This issue of program capacity was acknowledged as early as February 2000 by the General Counsel of AT&T Broadband at a FCC hearing when he professed that "[cable] channel capacity is not only increasing exponentially, but is about to go even beyond that as it [cable] goes digital."[9] He went on to say that AT&T's belief "is that we are going to be crying for content."[10]

One thing is clear, the cable industry can no longer cry that capacity is a barrier to transitional carriage. Further, it's time for a strong must carry rule. There is minimal digital carriage today, and virtually no agreements for the future. Smaller stations that need voluntary carriage agreements are the ones in the most need of must carry's access to the cable audiences to build their DTV futures and preserve our system of free, over-the-air broadcasting.

Today, a viewer in the Washington, DC market who utilizes over-the-air reception can watch (among others) popular programs like *Alias; Push, Nevada; NYPD Blue; The Drew Carey Show; the Practice; Becker; Everybody Loves Raymond; The Agency; Crossing Jordan;* and *Frasier* all in high-definition. Over-the-air viewers can also receive special events like the U.S. Open (which accounted for more than 40 hours of continuous high-definition programming) and 15 college football games in high-definition. Clearly, in terms of programming, the DTV transition is on track. Unfortunately, a DTV viewer in this market who relies upon cable would receive absolutely none of this programming.

Cable is the gatekeeper to approximately 70% of all television households. It is time for the cable industry to stop being the problem and become part of the solution to a successful DTV transition. Since we know that all cable operators will never carry many, much less all, DTV broadcasters, government intervention through mandated must carry is the *only* alternative to reach the necessary households to make the transition a success.

Interoperability and Digital Copy Protection Issues

Despite the best efforts of Chairman Tauzin to resolve interoperability issues and closely related digital-copy protection issues through a series of industry roundtables, questions surrounding interoperability remain largely unanswered today. There are incomplete, voluntary specifications between consumer electronics and cable industries for DTV/cable interoperability.

The draft moves decisively to see connectors on all DTV receivers, set-top boxes and other DTV products and "cable-ready" characteristics for direct connection DTV receivers.

Moreover, the draft would address the closely related goal of protecting content originators' copyrights by directing the FCC to implement a broadcast-flag standard. We support efforts to implement the broadcast flag via legislation and FCC regulation. Full implementation of the broadcast flag will mean that free, over-the-air broadcasts will receive the same level of protection from unauthorized redistribution as cable content and will ensure that consumers continue to receive high quality programming via free, over-the-air broadcasts. We also support efforts to find a legislative solution to the analog hole, a problem created by the continued presence of analog outputs in digital devices. Broadcasters also believe that a comprehensive so-

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[7] The term "program services" can refer to "channels." Generally, in an analog world, the number of "program services" equals the same number of "channels" offered by the cable operator. However, in a digital world, the number of program services that can be carried on a single 6 Mhz channel varies depending on the type of program service offered.

[8] The initial burden on cable for carriage of analog commercial stations in 1993 was 13.42%. This percent drops to 8.43 in 2003 " and includes carriage of both analog and DTV channels. Further, by the end of the transition, the must carry/retransmission consent burden on cable will be miniscule at 2.63%

[9] AT&T/Media One Cable Services Bureau Hearing, February 4, 2000.

[10] *Id.*

lution to the analog hole must be implemented or else the effectiveness of content protection mechanisms will be compromised.

In decisively moving to untangle these issues, the draft recognizes that the transition will never gain the needed momentum until consumers can purchase DTV sets from their local retailers, bring them home, plug them into their cable jack, and begin enjoying digital television.

Codification of the FCC's Tuner Decision

The FCC's August decision to begin a phased-in mandate of digital tuners represents the most important action on digital television since adoption of the DTV standard in 1996. Through this landmark decision, the Commission revived what had otherwise seemed a mired transition. Chairman Powell and the Commission recognized the Congressional imperative to stimulate the DTV marketplace and deserve enormous credit for taking pro-consumer steps to jump-start the stalled transition. While the Commission undoubtedly has the statutory authority for the ruling through the *All Channel Receiver Act,*[11] it is important that Congress signal support for the ruling by codifying the Commission's decision into statute.

In its ruling, the FCC prudently decided to phase the mandate in, beginning with larger, more expensive sets, and eventually applying the mandate to smaller sets. This process will make the mandate affordable to both consumers and manufacturers. The efficiencies of mass production will further reduce tuner costs. The economic consulting firm Arthur D. Little, Inc. found that the material cost for integration of a tuner would be reduced from $100 to $9 by 2006, due to the efficiencies of mass production, resulting in a retail price increase of only $16.[12] Two of the largest TV receiver manufacturers in the U.S., Thomson and Zenith, have seen the wisdom of the FCC's decision and publicly declared their support for a phased-in universal integration of DTV tuners.[13]

Without the FCC's tuner ruling, the transition to digital would be horribly slowed. In 2001, the Consumer Electronics Association estimated that only 12% of the 1.4 million DTV products sold included digital tuners.[14] These 168,000 fully capable digital television sets would account for only about 0.6% of the 25 million television sets sold annually.

The Commission's decision will also ensure greater choice for consumers. Broadcast digital signals do not have any "snow" or "ghosts," which will likely make over-the-air reception a more palatable option for many consumers. The choice to forego cable and enjoy DTV through over-the-air reception must be available to consumers in the digital future.

NAB commends including codification of the Commission's tuner decision into statute as a provision in the draft bill. However, the prescience the draft exhibits in reaffirming the FCC's tuner decision seems wholly incompatible with the decision to eliminate the 85% threshold—to date the best measurement of consumer acceptance of DTV. Ultimately, the FCC's tuner decision recognizes the value of the over-the-air broadcast system and will help to protect it in the digital age. One of the unique aspects of America's local broadcast system is that it is free to consumers. Anyone with a set and an antenna can receive the benefits of local news, weather, and other programming over-the-air. It seems contradictory that the draft would show such support for the over-the-air system (by codifying the tuner decision) and simultaneously demand an end to over-the-air analog broadcasting, irrespective of the acceptance level of DTV among consumers.

THE DIGITAL TELEVISION ZONE

Recognizing that consumers are the key participants to the transition, in January of 2001, NAB launched the *Digital Television Zone* program. This multimillion dollar marketing and education initiative was designed to expand consumer understanding of and enthusiasm for digital television. In deference to past Congressional calls for inter-industry cooperation, the program also established a partnership between the Consumer Electronics Association and NAB. (A booklet explaining all elements of the *Zone* program is attached as Appendix C).

The project initially targeted three pilot markets (or "*Digital TV Zones*"). The first three *Zones*—Houston, Texas; Indianapolis, Indiana; and Portland, Oregon—are diverse regions where all local network-affiliated stations have made the transition to

[11] All Channel Receiver Act of 1962, P.L. No 87-529 Stat 150 (codified at 47 U.S.C 303(s)).

[12] *Assessment of the Impact of DTV on the Cost of Consumer Television Receivers,* Arthur D. Littlie, Inc., Cambridge, Massachusetts, September 10, 2001, page 11.

[13] Exparte Filings to MM Docket # 00-39, August 1 and July 12, 2002, respectively

[14] *Digital America 2001, the U.S. Consumer Electronics Industry Today*

digital. Additionally, these three markets exhibited strong retail commitment to selling DTV sets.

Following the national campaign launch in Las Vegas, NAB and CEA announced the details of the *Digital TV Zone* program during media events in the *three Digital TV Zone* cities. Held at local landmarks in each *Zone* city, the events featured Mayor Bart Peterson in Indianapolis, Mayor Lee Brown in Houston and Mayor Vera Katz in Portland, each issuing a formal proclamation of support for the *Digital TV Zone* initiative and recognizing the value of DTV.

To meet the campaign's objective of introducing consumers to the viewing experience of DTV, NAB and CEA, together with local manufacturers, installed Digital Landmarks in high profile, high traffic areas in each *Zone* city. Digital Landmarks featured state-of-the-art HDTV sets, with accompanying signage recognizing the city as a *Digital Zone.*

Houston Landmarks included the Houston Livestock Show and Rodeo; Space Center Houston; Compaq Center; and Houston Visitors Center. Indianapolis Landmarks included VisitIndy.Info-City Center; NCAA Hall of Champions; City County Building; Conseco Fieldhouse; and Indianapolis International Airport. Portland landmarks included Rose Garden Arena; Oregon history Center; and Portland City Hall.

As the benefits of DTV are best understood when experienced, NAB and CEA sponsored a "Digital TV Family" search contest in each of the three *Zone* cities. Families applied for the opportunity by completing a questionnaire and submitting a short essay response on the program's website, www.digitaltvzone.com. HDTV sets were installed in the living rooms of the three wining families to use for one month. After that period, the families documented their experience and endorsed digital television. These testimonials were then shared with the media to further educate each community about DTV. Each *Zone* also benefited from "Watch Parties" where local opinion leaders were invited to experience special HDTV programming events.

In addition to these earned media efforts, NAB commissioned the development of a television advertisement titled "Time Marches On." The thirty second ad highlights the major advantages of DTV and shows that the transition is occurring now. The ad takes an historical look back at the first broadcast of a TV signal, the innovation of color, and finally the major break through of digital television.

"Time Marches On" was aired by the local TV stations in all three Zones reaching approximately 1,000 Group Rating Points per market. Several retailers in local Zones also purchased additional advertising time to further spread the campaign's message.

Prior to initiating the *Zone* project, NAB commissioned the research firm StrategyOne to measure the impact of the campaign among our targeted audiences. StrategyOne conducted a two-tiered study: a pre-campaign "benchmark" survey of 200 respondents aged 25 and older in two of the Zone markets (Indianapolis and Houston) and a post-campaign "monitor" survey of 200 respondents in the same two markets and also in Portland. The survey demonstrates quantifiable success in improving consumers' familiarity with digital television. The survey reported double-digit increases in the perceived advantages of DTV.

Moving the Zone Program Forward

This morning, NAB will launch our fourth, and perhaps most important local *Zone* in Washington, DC. Mayor Anthony Williams will attend the media event, pronouncing the city's support for DTV. Tomorrow, NAB will host a "Watch Party" at the newly opened Spy Museum where local opinion leaders have been invited to see the advantages of High-Definition television. All other elements of the *Zone* program, which have proven successful in the pilot markets, will also be implemented in Washington.

Equally important, elements of the program are being used nationally. 25 stations nationwide (who were not in the original *Zones*) have requested copies of the "Time Marches On" advertisement for their own airing. Stations also regularly contact NAB staff for logistical advice on how to organize Watch Parties, press conferences, and other media events that will build even greater consumer enthusiasm for this exciting technology revolution.

CONCLUSION

While the transition to digital television faces obstacles, broadcasters remain deeply committed to seeing the promises of the transition fulfilled. The large percentage of TV households who are served by a digital signal coupled with the rapid expansion of available DTV programming and the FCC's recent tuner decision have collectively provided needed momentum for the transition. NAB is building upon this momentum through a multimillion dollar marketing and education campaign that is enhancing consumer understanding of and enthusiasm for DTV. To capitalize

on this inertia, Congress should act to ensure cable carriage of DTV signals, promulgate universal interoperability standards and codify the Commission's tuner decision.

NAB has consistently advocated for legislation that will move the transition forward. As such, we are encouraged by these very first nascent steps. We look forward to working closely with the Committee on creating pro-consumer legislation that propels the DTV transition forward and preserves the system of free, over-the-air broadcasting in the digital millennium.

APPENDIX A

DTV Stations On Air

475 DTV stations on air in 143 markets, serving 89.994% of US TV households

Listed by market, in DMA order, with digital channels

1 New York, NY
WCBS-TV 56
WNYW 44
WLNY 57
WFME-TV 29
WNYE-TV 24
WNET 61
2 Los Angeles, CA
KNBC 36
KCET 59
KCOP 66
KTLA 31
KWHY-TV 42
KSCI 61
KCAL-TV 43
KCBS-TV 60
KTTV 65
KABC-TV 53
3 Chicago, IL
WLS-TV 52
WBBM-TV 3
WFLD 31
WJYS 36
WSNS-TV 45
WGBO-TV 53
WGN-TV 19
WPWR-TV 51
WMAQ-TV 29
WTTW 47
WCPX 43
4 Philadelphia, PA
WNJN 51
WNJT 43
WLVT-TV 62
WHYY-TV 55
WCAU 67
WPVI-TV 64
WWSI 49
WFM2-TV 46
WTXF-TV 42
KYW-TV 26
5 San Francisco-Oakland-San Jose, CA
KPIX 29
KGO-TV 24
KTVU 56
KTLN-TV 47
KICU-TV 52
KCNS-TV 39
KTSF 27
KRON-TV 57
KSTS 49
KQED 30
KBWB 19
KBHK-TV 45
KNTV-TV 12
6 Boston, MA (Manchester, NH)
WHDH 42
WGBH-TV 19
WGBX-TV 43
WENH 57
WMUR-TV 59
WUTF 23
WFXT 31
WCVB-TV 20
WBZ-TV 30
7 Dallas-Ft. Worth, TX
KTVT 19
WFAA-TV 9
KDFW 35
KDFI-TV 36
KFWD 51
KXAS-TV 41
KDAF 32
KTXA 18
KERA-TV 14
8 Washington, DC (Hagerstown, MD)
WETA-TV 27
WWPX 12
WPXW 43
WRC-TV 48
WTTG-TV 36
WILA-TV 39
WUSA TV 34
9 Atlanta, GA
WGCL 19
WAGA 27
WXIA-TV 10
WTBS 20
WPXA 51
WUPA 43
WATL 25
WSB-TV 39
10 Detroit, MI
WKBD-TV 14
WDIV 45
WTVS 43
WJBK 58
WWJ-TV 44
WKYZ-TV 41
11 Houston, TX
KTRK-TV 32
KRIV 27
KHOU-TV 31
KPRC-TV 35
KTXH 19
KUHT 9
12 Seattle-Tacoma, WA
KCTS-TV 41
KSTW 36
KTWB-TV 25
KING-TV 48
KCPQ 18
KONG-TV 31
KOMO-TV 38
KIRO-TV 39
13 Minneapolis-St. Paul, MN
WCCO-TV 32
KSTP-TV 50
KSTC-TV 44
WFTC 21
KARE-TV 35
KMSP-TV 26
KTCI-TV 16
KMWB 22
14 Tampa-St. Petersburg (Sarasota), FL
WTOG 59
WFLA-TV 7
WEDU 54
WTVT 12
WFTS 29
WTSP-TV 24
15 Miami-Ft. Lauderdale, FL
WFOR-TV 22
WSVN-TV 8
WSCV 52
WPBT 18
WBZL 19
WPLG 9
16 Phoenix, AZ
KASW 49
KUTP 26
KAET 29
KPNX-TV 36
KCFG 32
KTVK-TV 24
KTVW-TV 34
KSAZ-TV 31
KPHO-TV 17
KNXV 56
17 Cleveland-Akron (Canton)
WEWS 15
WOIO 10
WJW 31
WMFD-TV 12
WKYC-TV 2
WUAB 28
18 Denver, CO
KRMA-TV 18
KCNC-TV 35
KDVR 32
KFCT 21
KMGH-TV 17
19 Sacramento-Stockton-Modesto, CA
KXTV 61

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KOVR-TV 25
KTXL 55
KCRA-TV 35
20 Orlando-Daytona Beach-Melbourne, FL
WOPX 48
WESH 11
WRBW 41
WKCF 17
WOFL 22
WRDQ 14
WKMG-TV 58
WFTV 39
21 Pittsburgh, PA
WPXI 48
WPGH-TV 43
KDKA-TV 25
WCWB-TV 42
WTAE-TV 51
22 St. Louis, MO
KSDK 35
KTVI-TV 43
WHSL 47
KDNL-TV 31
KMOV 56
23 Portland, OR
KOIN 40
KATU 43
KPDX 48
KGW -TV 46
KPTV 30
KOPB-TV 27
24 Baltimore, MD
WUTB 41
WMAR-TV 52
WBAL-TV 59
WMPT 42
WBFF 46
WJZ -TV 38
25 Indianapolis, IN
WISH-TV 9
WXIN 45
WTHR 46
WRTV 25
26 San Diego, CA
KSWB-TV 19
KPBS 30
KNSD 40
KFMB-TV 55
KGTV 25
27 Charlotte, NC
WBTV 23
WCCB 27
WAXN 50
WHKY-TV 40
WCNC-TV 22
WTVI 11
WUNG-TV 44
WSOC-TV 34
28 Hartford & New Haven, CT
WTNH-TV 10
WHPX 34
WFSB 33
29 Raleigh-Durham (Fayetteville), NC
WRAL-TV 53
WNCN-TV 55
WRAZ 49
WRPX 15
WUNP-TV 39
WUNC-TV 59
WTVD 52
30 Nashville, TN
WTVF 56
WKRN-TV 27
31 Kansas City, MO
KMBC-TV 7
WDAF-TV 34
KCPT 18
KSMO-TV 47
KCWE 31
32 Cincinnati, OH
WLWT 35
WXIX-TV 29
WCPO-TV 10
WKRC-TV 31
33 Milwaukee, WI
WDJT-TV 46
WITI 33
WTMJ-TV 28
WMVS 8
34 Columbus, OH
WCMH-TV 14
WSFJ 24
WBNS-TV 21
35 Salt Lake City, UT
KUTV 34
KTVX 40
KSTU 28
KSL -TV 38
KUPX 29
KUWB 48
KBYU-TV 44
KUED 42
36 Greenville-Spartanburg, SC-Asheville, NC-Anderson, SC
WUNE-TV 54
WASV-TV 45
WYFF-TV 59
WSPA-TV 53
37 San Antonio, TX
KSAT-TV 48
KENS-TV 55
KMOL-TV 58
38 Grand Rapids-Kalamazoo-Battle Creek, MI
WZPX 44
WZZM-TV 39
WXMI 19
WOOD-TV 7
WWMT 2
39 Birmingham (Anniston, Tuscaloosa), AL
WPXH 45
40 West Palm Beach-Ft. Pierce, FL
WPBF 16
WHDT-DT 59
WFLX 28
41 Memphis, TN
WHBQ-TV 53
WMC -TV 52
WREG-TV 28
WPTY-TV 25
WLMT 31
WPXX 51
42 Norfolk-Portsmouth-Newport News, VA
WHRO-TV 16
WPXV 46
WGNT 50
WTVZ 38
WVEC-TV 41
WTKR-TV 40
WAVY-TV 31
WVBT 29
43 New Orleans, LA
WWL -TV 36
44 Greensboro-High Point-Winston Salem, NC
WFMY-TV 51
WGHP 35
WXII 31
WXLV-TV 29
WUPN-TV 33
WUNL-TV 32
45 Oklahoma City, OK
KFOR-TV 27
KSBI 51
46 Harrisburg-Lancaster-Lebanon-York, PA
WHP -TV 4
WGAL-TV 58
WITF-TV 36
WLYH-TV 23
47 Buffalo, NY
WGRZ-TV 33
WIVB-TV 39

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48 Albuquerque-Santa Fe, NM
KRQE 16
KOAT-TV 21
KASA-TV 27
KOBR-TV 38
KOB -TV 26
KNME-TV 35
50 Louisville, KY
WKPC-TV 17
WHAS-TV 55
51 Las Vegas, NV
KTNV-TV 12
KLAS-TV 7
KLVX 11
52 Wilkes Barre-Scranton, PA
WNEP-TV 49
WVIA-TV 41
53 Jacksonville, FL
WJWB 34
WJXX 10
WJXT 42
WTLV 1
54 Austin, TX
KXAN-TV 21
KTBC 56
55 Fresno-Visalia, CA
KGMC 44
KFSN-TV 9
56 Little Rock-Pine Bluff, AR
KTHV 12
KLRT 30
KARK-TV 32
58 Richmond-Petersburg, VA
WWBT 54
59 Tulsa, OK
KOTV-TV 55
KJRH 56
KTPX 28
60 Dayton, OH
WKEF 51
WHIO-TV 41
WRGT-TV 30
61 Charleston-Huntington, WV
WLPX-TV 39
WPBY-TV 34
62 Knoxville, TN
WPXK 23
WBIR-TV 31
WATE-TV 26
63 Mobile, AL-Pensacola (Ft. Walton Beach), FL
WKRG-TV 27
WALA-TV 9
WPMI 47
WSRE 31
64 Flint-Saginaw-Bay City, MI
WJRT-TV 36
65 Wichita-Hutchinson, KS Plus
KAKE-TV 21
KWCV 31
66 Lexington, KY
WCVN 24
WTVQ-TV 40
WKMA 42
WKOH 30
WKON 44
WKPI 24
WKSO-TV 14
WKZT-TV 43
WKAS 26
WKLE 42
WKMR 15
WKHA 16
WKYT-TV 13
67 Roanoke-Lynchburg, VA
WDBJ 18
WSLS-TV 30
WJPR 20
WPXR 36
68 Toledo, OH
WNWO-TV 49
WTOL-TV 17
69 Green Bay-Appleton, WI
WBAY-TV 23
WFRV-TV 56
WGBA 41
WACY 59
70 Des Moines-Ames, IA
KDIN-TV 50
WHO -TV 19
KCCI-TV 31
KDSM-TV 16
72 Honolulu, HI
KMAU 29
KHVO 18
KITV 40
74 Springfield, MO
KYTV 44
75 Omaha, NE
WOWT 22
76 Ft. Myers-Naples, FL
WFTX 35
77 Paducah, KY-Cape Girardeau, MO-Harrisburg-Mt Vernon, IL
KFVS-TV 57
WPSD-TV 32
WKMU 36
WKPD 41
78 Spokane, WA
KXLY-TV 13
KLEW-TV 32
79 Shreveport, LA
KSLA-TV 17
80 Portland-Auburn, ME
WGME-TV 38
WCSH 44
WCBB 17
82 Champaign & Springfield-Decatur, IL
WAND 18
WCFN 53
WCIA 48
83 Huntsville-Decatur (Florence), AL
WHNT-TV 59
WZDX 41
84 Columbia, SC
WLTX 17
WOLO-TV 8
WRLK-TV 32
85 Madison, WI
WHA -TV 20
WISC-TV 50
WKOW-TV 26
WMTV 19
86 Chattanooga, TN
WRCB-TV 13
WDEF-TV 47
87 South Bend-Elkhart, IN
WSBT-TV 30
WNDU-TV 42
88 Jackson, MS
WJTV 52
WMPN-TV 20
89 Cedar Rapids-Waterloo-Iowa City & Dubuque, IA
KPXR 47
KWWL 55
KWKB 25
90 Burlington, VT-Plattsburgh, NY
WVTA 24
WLED-TV 48
92 Davenport, IA-Rock Island-Moline, IL
WQAD-TV 38
93 Tri-Cities, TN-VA
WKPT-TV 27
WCYB-TV 28
WJHL-TV 58
94 Waco-Temple-Bryan, TX
KWTX-TV 53
95 Baton Rouge, LA
WBRZ 13
WLPB-TV 25
97 Evansville, IN
WFIE-TV 46
WAZE-TV 20

DTV Stations On Air

475 DTV stations on air in 143 markets, serving 89.994% of US TV households

Listed by market, in DMA order, with digital channels

WEHT-TV 59
99 Savannah, GA
WTOC-TV 15
102 Lincoln & Hastings-Kearny Plus, NE
KLKN 31
105 Springfield-Holyoke, MA
WGBY-TV 58
106 Greenville-New Bern-Washington, NC
WUNK-TV 23
WUND-TV 20
WCTI 48
107 Ft. Smith -Fayetteville-Springdale-Rogers, AR
KHBS 21
KHOG-TV 15
109 Florence-Myrtle Beach, SC
WBTW 56
WUNU 25
110 Reno, NV
KAME-TV 20
KNPB 15
111 Lansing, MI
WLNS-TV 59
114 Augusta, GA
WRDW-TV 31
WFXG 51
116 Peoria-Bloomington, IL
WTVP 46
117 Traverse City-Cadillac, MI
WWTV 40
WWUP-TV 49
119 Fargo-Valley City, ND
KFME 23
120 Santa Barbara-Santa Maria-San Luis Obispo, CA
KSBY 15
KTAS 34
121 Boise, ID
KBCI-TV 28
KIVI 24
KTVB 26
KAID 21
122 Macon, GA
WMAZ-TV 4
123 Eugene, OR
KVAL-TV 25
KPIC 19
KCBY-TV 21
KOAC-TV 39
124 Lafayette, LA
KLFY-TV 56
125 Yakima-Pasco-Richland-Kennewick, WA
KEPR-TV 18
KIMA-TV 33
126 Columbus, GA
WXTX 49
WLTZ 35
127 La Crosse-Eau Claire, WI
WQOW-TV 15
WXOW-TV 14
WEAU-TV 39
128 Amarillo, TX
KFDA-TV 9
132 Rockford, IL
WREX-TV 54
134 Monroe, LA-El Dorado, AR
KMCT-TV 38
KNOE-TV 7
136 Beaumont-Port Arthur, TX
KBMT 50
137 Wausau-Rhinelander, WI
WAOW-TV 29
WTPX 46
139 Columbia-Jefferson City, MO
KOMU-TV 36
143 Erie, PA
WICU-TV 52
WQLN 50
144 Sioux City, IA
KTIV-TV 41
149 Bluefield-Beckley-Oak Hill, WV
WVVA 46
151 Rochester, MN-Mason City, IA-Austin, MN
KIMT 42
KTTC 36
152 Minot-Bismarck-Dickinson (Williston), ND
KBME-TV 22
KXMB-TV 23
153 Salisbury, MD
WBOC-TV 21
154 Odessa-Midland, TX
KOSA-TV 31
158 Bangor, ME
WABI-TV 19
WLBZ 25
WMEB-TV 9
159 Panama City, FL
WFSG 38
WMBB 19
160 Sherman, TX-Ada, OK
KXII 20
161 Palm Springs, CA
KMIR-TV 46
163 Quincy, IL-Hannibal, MO-Keokuk, IA
WGEM-TV 54
166 Idaho Falls-Pocatello, ID
KIDK 36
167 Hattiesburg-Laurel, MS
WDAM-TV 28
169 Missoula, MT
KCFW-TV 38
170 Billings, MT
KULR-TV 11
174 Lake Charles, LA
KLTL-TV 20
178 Harrisonburg, VA
WVPT 11
181 Bowling Green, KY
WKGB-TV 48
182 Greenwood-Greenville, MS
WXVT 17
187 Great Falls, MT
KFBB-TV 8
190 Lafayette, IN
WLFI-TV 11
193 Butte-Bozeman, MT
KTVM 2
199 San Angelo, TX
KLST 11
204 Victoria, TX
KAVU-TV 15
KVCT 34
205 Presque Isle, ME
WMEM-TV 20
0 Puerto Rico
WKAQ-TV 28

APPENDIX B

HDTV GOES PRIME TIME
...and Beyond

Broadcasters have taken the lead in the Digital Television revolution by giving viewers thousands of hours of premium programming in HDTV format during the 2002-2003 television season. In fact, HD programming has increased almost 50 percent within the last year and more than 2,000 hours of over-the-air HDTV programming is planned for the 2002-2003 season.

The line-up of America's favorite shows now shown in HDTV includes:

ABC

ABC will broadcast all of its scripted primetime programs in HDTV for the upcoming 2002-2003 season. Current ABC programs in HDTV include:

- 8 Simple Rules for Dating my Teenage Daughter
- According to Jim
- Alias
- The Drew Carey Show
- George Lopez
- Less Than Perfect
- Life With Bonnie
- MDs
- NYPD Blue
- The Practice
- Push, Nevada
- That Was Then

...plus *The Wonderful World of Disney* and The ABC Big Picture Show

CBS

CBS broadcast its entire prime time lineup in HDTV during the 2001-2002 season and plans to continue this in the upcoming season. Current CBS programs in HDTV include:

- The Agency
- Becker
- The Biographer
- Bram & Alice
- CSI: Crime Scene Investigation
- CSI: Miami
- The District
- Everybody Loves Raymond
- The Guardian
- Hack
- JAG
- Judging Amy
- The King of Queens
- Presidio Med
- Robbery Homicide Division
- Still Standing
- Touched by an Angel
- Without a Trace
- The Young and the Restless
- Yes, Dear

Additionally, in recent seasons, CBS broadcast Saturday college football match-ups, the U.S. Masters Golf Tournament, the U.S. Open tennis tournament and the NCAA Men's Basketball Tournament in HDTV during the 2002-2003 television season.

NBC

- American Dreams
- Boomtown
- Crossing Jordan
- Ed
- Frasier
- Hidden Hills
- In-Laws
- The Tonight Show with Jay Leno

NBC also broadcasts select sporting events in HDTV such as the 2002 Olympic Winter Games and Visa Triple Crown horseracing.

FOX

While Fox is not broadcasting in HDTV, the network will be broadcasting some television programming in an enhanced digital format. The network aired Super Bowl XXXVI in enhanced digital in 2002.

WB

- Everwood
- Family Affair
- Reba
- Smallville

PBS

PBS is already broadcasting a digital signal 12 hours a day, providing high definition performance, art programs and special event coverage, such as live HD coverage of the 9/11 ceremony at the Pentagon.

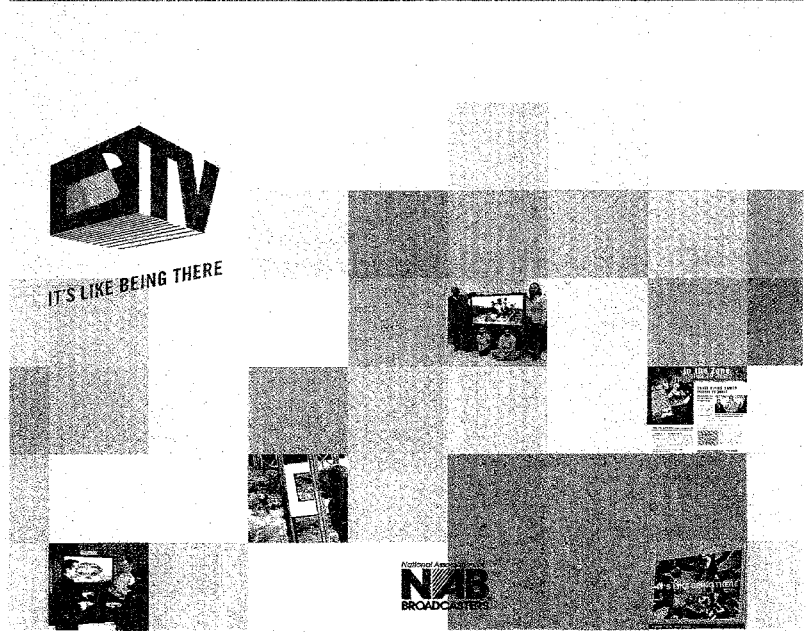
PAX and UPN

PAX and UPN are also taking the lead in multicasting on their digital channels with up to 12 hours a day, including prime time programming.

Appendix C

THE BIG PICTURE

Tracking the Digital TV Campaign



CAMPAIGN OVERVIEW

As television stations all across America transition to digital broadcasting, the National Association of Broadcasters (NAB) launched a national education campaign to increase awareness and understanding of Digital TV, the new standard in television with clearer pictures, better sound and a more exciting viewing experience than analog TV.

IT'S LIKE BEING THERE

The program included outreach to policy makers to keep them informed of Digital TV transition progress. To that end, NAB developed *Digital TV Briefing Kits*, a quarterly newsletter, *In the Zone: Digital TV News*, and hosted Digital TV Watch Parties on Capitol Hill.

In addition to communication with Capitol Hill and the Federal Communications Commission, a major component of the campaign was a pilot program recognizing three cities as Digital TV Zones for their pioneering efforts embracing Digital TV technology. The first three Digital TV Zones — Houston, Indianapolis and Portland — are diverse regional centers where all local, network-affiliated stations have made the transition to digital broadcasting and there is strong retail commitment to Digital TV marketing and sales. Working with local broadcasters, retailers and manufacturers, NAB and the Consumer Electronics Association coordinated several activities in the Digital TV Zone cities giving residents the opportunity to see, hear and experience Digital TV firsthand.

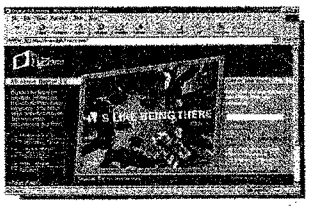
In addition, NAB developed and distributed *Broadcaster Playbooks* to more than 1,000 local TV stations across the country with "how to" information for generating awareness and excitement for Digital TV in their own communities.

Additionally, www.digitaltvzone.com was developed as the official campaign Web site and online resource for information on Digital TV, along with a high-quality advertisement titled "Time Marches On," to further promote understanding and build excitement for Digital TV.

NATIONAL CAMPAIGN LAUNCHES TO BOOST DIGITAL TV AWARENESS

Eddie Fritts announces the Digital TV campaign on CNNfn live from International CES.

The National Association of Broadcasters and Consumer Electronics Association launched the Digital TV campaign on January 9, 2002 in a press conference at the International Consumer Electronics Show (CES) in Las Vegas. Addressing dozens of reporters, NAB's Eddie Fritts and CEA's Gary Shapiro announced the Digital TV Zone cities and key elements of the awareness program.



www.digitaltvzone.com is the official campaign Web site and the online resource for information on Digital TV.

CEA's Jeff Joseph and NAB's John Orlando present award to Mayor Lee Brown naming Houston a Digital TV Zone.

THREE CITIES NAMED PILOT DIGIT

Following the national campaign launch in Las Vegas, NAB and CEA announced the details of the Digital TV Zone program during events in the three Digital TV Zone cities. Held at local landmarks in each Digital TV Zone city, the press conferences featured Mayor Bart Peterson in Indianapolis, Mayor Lee Brown in Houston and Mayor Vera Katz in Portland, each issuing a formal proclamation of support for the Digital TV Zone initiative and recognizing the transition of local broadcasters to Digital TV.

FOX59
INDIANAPOLIS
AL TV ZONES
PORTLAND
DIGITAL
FOX 49
katu
OPB
KGW NEWS 6

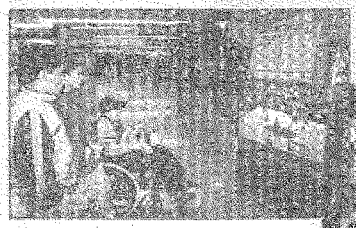
Compaq Center, Houston TX

Texas Ocean, Houston, TX

Houston Astros Center, Houston, TX

DIGITAL LANDMARKS SHOWCASE HDTV

To meet the campaign objective of enabling consumers to experience the remarkable quality of Digital TV firsthand, NAB and CEA, together with manufacturers, installed Digital Landmarks in high profile, high traffic areas of each Zone city. Digital Landmarks featured state-of-the-art HDTV sets, with accompanying signage recognizing the city as a Digital TV Zone.



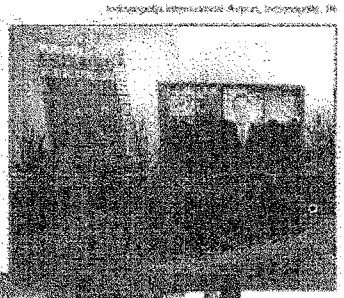
Rose Garden Arena, Portland, OR

Pioneer City Hall, Portland, OR

Indianapolis International Airport, Indianapolis, IN

HOUSTON LANDMARKS INCLUDED:

- Houston Livestock Show & Rodeo
- Space Center Houston
- Camping Center
- Houston Visitors Center



INDIANAPOLIS LANDMARKS INCLUDED:

- Visit Indy Info-City Center
- NCAA Hall of Champions
- City County Building
- Conseco Fieldhouse
- Indianapolis International Airport

NCAA Hall of Champions, Indianapolis, IN

PORTLAND LANDMARKS INCLUDED:

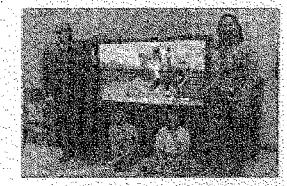
- Rose Garden Arena
- Oregon History Center
- Portland City Hall

Conseco Fieldhouse, Indianapolis, IN

DIGITAL FAMILY WINNERS EXPERIENCE HDTV AT HOME

Because "seeing is believing," NAB and CEA recognized the importance of educating consumers about the benefits of Digital TV by providing opportunities to watch it. They accomplished this by sponsoring a Digital TV Family search contest in each of the three Zone cities.

Families applied for the opportunity to be named a Digital Family by completing a questionnaire and submitting a short essay response on www.digitalvzone.com. HDTV sets were installed in the living rooms of the three winning Digital Families to use for one month. Asked to document their experience, the families responded with enthusiastic endorsements for Digital TV.



The Williams family was excited to be selected Indianapolis' Digital Family.

The Williams family in Indianapolis was the first family to have an HDTV set installed.

"HDTV is truly a superior product," said Eric Williams of his Samsung HDTV set and tuner. "My family was blown away by the improvements in visuals and sound."

"The other night we were watching *The Drew Carey Show* in HDTV, and the picture was so clear, it was like looking through a window."

A family of five, the Frawleys were selected to be the Digital Family of Portland.

According to Heidi Frawley, "There is no comparison between our old analog set and this new digital one. Okay maybe one, they both had a power button! In all seriousness, our Samsung HDTV set is a 10 on picture quality, audio and the overall viewing experience."

Portland's Digital Family — the Frawleys — enjoyed watching digital programming together.

In an unconventional move, NAB selected Firehouse 75 in Houston to be the representative Digital Family at the Digital TV Zone.

"Firefighters see the station as a home-away-from-home. And the other firefighters are seen as extended family," explained Chief Clive Wisby from Station 75. "The Sony high-definition TV is an amazing improvement from our old set. The other night we were watching *The Drew Carey Show* in HDTV, and the picture was so clear, it was like looking through a window."

Houston firefighters were amazed by HDTV's picture quality.

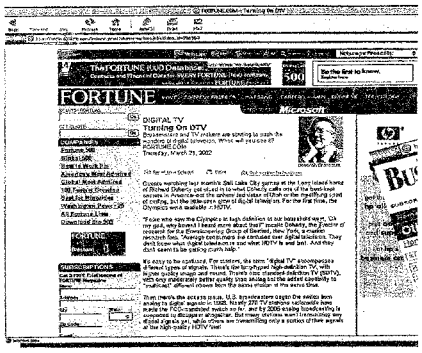
DIGITAL TV ZONE RESIDENTS CATCH COLLEGE HOOPS IN HDTV!

Capitalizing on the digital broadcast of the NCAA Men's Basketball Tournament, local broadcasters gave residents the unparalleled experience of watching sports in HDTV by inviting them to Digital TV Watch Parties, co-sponsored with local retailers and manufacturers.

In Indianapolis, NAB and CEA hosted NCAA Tournament Watch Parties throughout the tournament in three bars, including BW3's, Ale Emporium and Neon Johnny's, as well as at all local HH Gregg locations.

Portland's Digital Family hosted a high-definition Watch Party for the championship game on April 1. Even the pizza delivery guys stuck around to watch the game in HDTV!

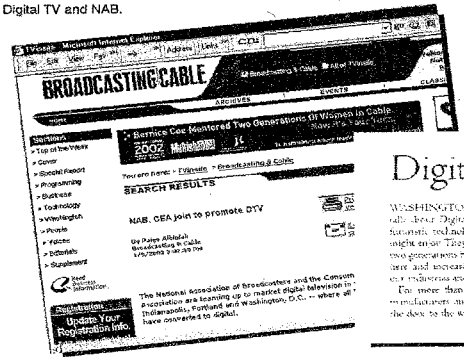
CAMPAIGN GARNERS 32 MILLION MEDIA IMPRESSIONS

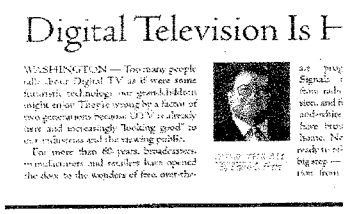


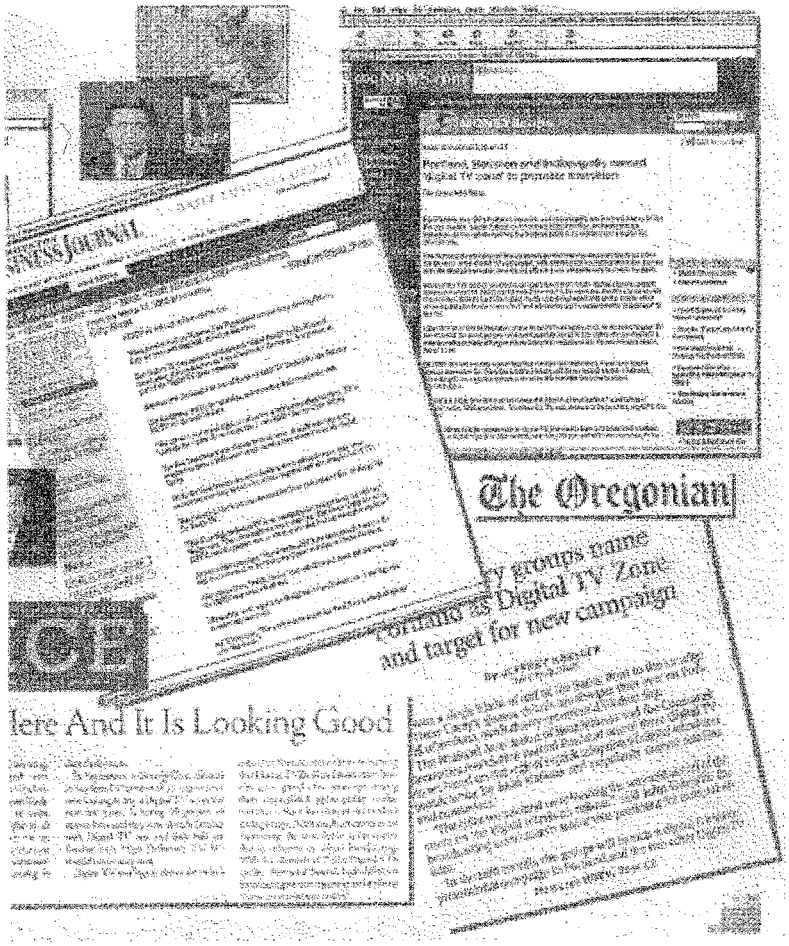
The Digital TV campaign garnered significant media coverage. Major media coverage highlights from around the nation included CNNfn, *USA Today*, *New York Times*, *The Washington Post*, Fortune.com, a *TWICE* op-ed, an Associated Press article published in many online newspapers and an hour long feature segment on Sports Talk 980-AM in Washington, D.C.

NAB also received extensive coverage of the campaign in the Digital TV Zones, including articles in the *Indianapolis Star*, *Oregon Magazine* and the *Houston Chronicle*, along with numerous television stories. Overall, the campaign has netted more than 32 million media impressions around the United States — 28 million in publications and 4 million in television broadcasts.

Another valuable outreach tool has been the campaign Web site, www.digitaltvzone.com, which receives 450-1,000 unique visitors a day, many of whom request additional information about Digital TV and NAB.






The Oregonian
and target for new campaign
lere And It Is Looking Good

CAMPAIGN PRESSES ON!

In the midst of all the digital confusion, the National Association of Broadcasters and the Consumer Electronics Association are launching an educational campaign called the Digital TV Zone. In three pilot cities (Indianapolis, Portland, Ore., and Houston), digital TVs will be set up in malls, airports and other gathering spots. Community leaders will hold "watch parties," and selected "digital families" will get free sets to chronicle their experiences and serve as spokespersons.

The program, which launches later this month and adds Washington, D.C., this summer, "brings together local broadcasters, retailers and manufacturers to create opportunities for consumers to experience digital TV," says NAB president Edward Fritts.

HDTV: CLEARLY BETTER

BROADCASTERS ARE READY FOR NEXT TECHNOLOGICAL LEAP, BUT VIEWERS AREN'T – YET

WHAT YOU WILL NEED FOR HDTV

Hosting a champion game-watch party

Industry giving city a closer look at d

By Vic Caleca
vic.caleca@indystar.com
January 31, 2002

You may not realize it, but you're living in a "digital TV zone."

The National Association of Broadcasters and Consumer Electronics' town Wednesday to acknowledge Indianapolis as one of three such TV z States, joining Houston and Portland, Ore.

What does it mean to you?

You will be the target of a concerted consumer education program u before the program goes nationwide.

Although sales of digital televisions – which feature higher- quality traditional analog sets – picked up considerably last year, broadcasters a think consumers still are confused.

"There are still a tremendous amount of questions and confusion," sa president of communications for the Consumer Electronics Association. have digital cable or a DVD player they've got digital TV, and it's not th

The digital TV zone initiative will try to solve that through a number to running advertisements, the sponsoring organizations will:

• Set up "digital landmarks" – high-definition TV displays in public Fieldhouse and Indianapolis International Airport so consumers can see ho of digital sets looks.

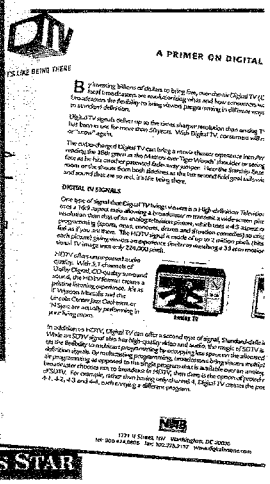
• Pick a "digital family" who will get the use of a high-definition set for 30 days in their home. Anyone interested in participating may register at www.digitalzone.com before Feb. 15.

• Organize "watch parties" at area restaurants and bars with digital TVs.

• Offer tours of local television stations broadcasting digital signals so community groups can get an idea of the technology involved.

Indianapolis was chosen for the program because all four of its major network affiliates now are broadcasting digital signals, and retailers here have been aggressive about marketing digital TVs.

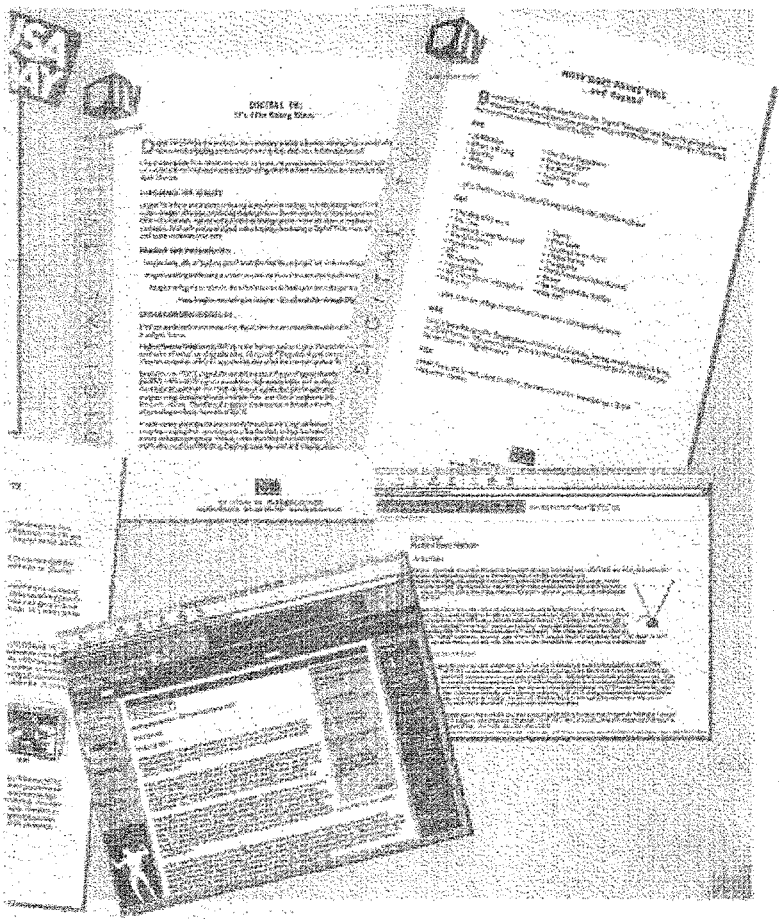
THE INDIANAPOLIS STAR



A PRIMER ON DIGITAL

DIGITAL TV SIGNALS

NAB



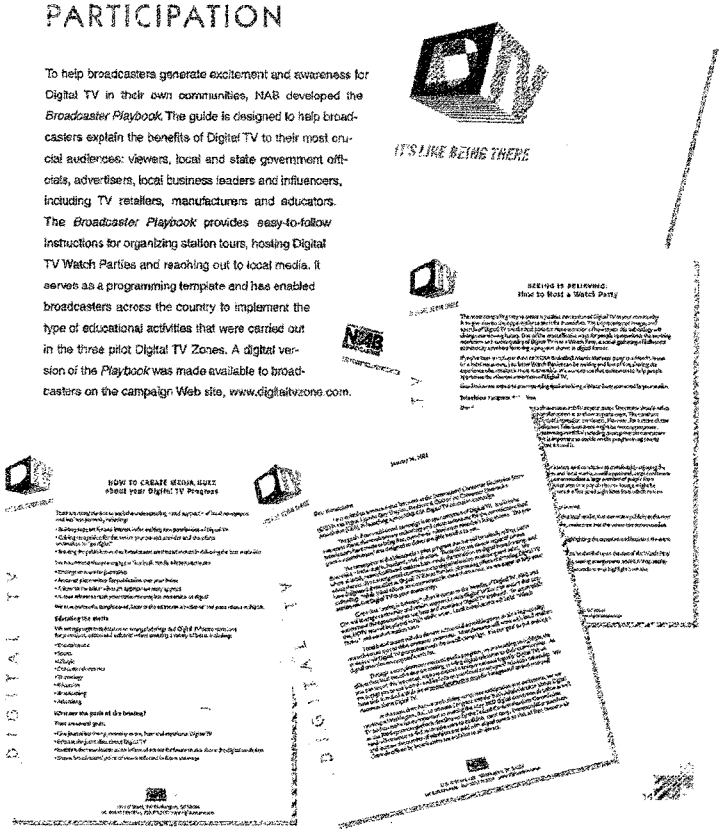
AD CAMPAIGN BUILDS DIGITAL TV BUZZ

Advertising

The New York Times

PROGRAM ENCOURAGES LOCAL BROADCASTER PARTICIPATION

To help broadcasters generate excitement and awareness for Digital TV in their own communities, NAB developed the *Broadcaster Playbook*. The guide is designed to help broadcasters explain the benefits of Digital TV to their most crucial audiences: viewers, local and state government officials, advertisers, local business leaders and influencers, including TV retailers, manufacturers and educators. The *Broadcaster Playbook* provides easy-to-follow instructions for organizing station tours, hosting Digital TV Watch Parties and reaching out to local media. It serves as a programming template and has enabled broadcasters across the country to implement the type of educational activities that were carried out in the three pilot Digital TV Zones. A digital version of the *Playbook* was made available to broadcasters on the campaign Web site, www.digitaltvzone.com.



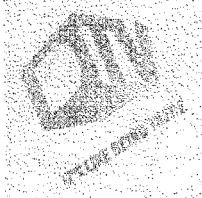
CAPITOL HILL OUTREACH HIGHLIGHTS BROADCASTERS' LEADERSHIP

In addition to consumer education, a key component of the campaign was outreach to policy makers highlighting broadcasters' pivotal role in the progress of the Digital TV transition. Members of Congress received a *Digital TV Briefing Kit* and *In the Zone: Digital TV News*, the campaign newsletter.

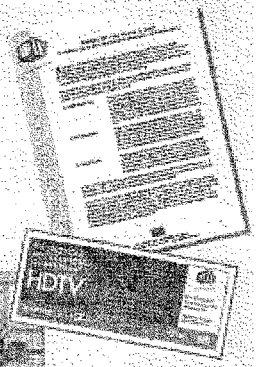
In addition to materials, we also informed policy makers and their staffs about the advantages of Digital TV by giving them the opportunity to experience it up close through Game Watch Parties held on Capitol Hill.

The first Watch Party, held on November 17, 2001, featured a college football game between two archrivals, Florida and Florida State broadcast in HDTV by CBS. Held at a popular Capitol Hill bar, the event drew upwards of 250 congressional staffers.

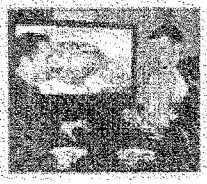
Capitol Hill policy makers were invited to watch the rivalry between Florida and Florida State football teams on Game Watch Parties in HDTV.

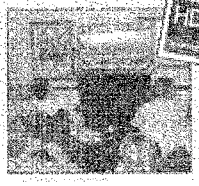


The second event, held February 8, 2002 and co-sponsored with NBC, Zenith and CEA, featured an exclusive live digital broadcast of the opening ceremonies of the Winter Olympics on 15 megahertz HDTV sets positioned around the opulent ballroom at the Organization of American States building. The event garnered a crowd of more than 300 people, including Members of Congress and key congressional staff.



Capitol Hill policy makers were also invited to experience the "madness of March" watching the digital broadcasts of the NCAA Men's Basketball Championship game on HDTVs placed in the venerable Capitol Hill Club and National Democratic Club.





Capitol Hill policy makers gathered at the Capitol Hill Club and the National Democratic Club to watch Game Watch Parties in HDTV.

IN THE ZONE SPREADS CAMPAIGN NEWS

To further spread Digital TV awareness and understanding, share news of the campaign and demonstrate the leadership of broadcasters in the digital revolution, NAB developed *In the Zone: Digital TV News*, a newsletter for media, policy makers and broadcasters.

The March issue included articles on the national campaign launch, the November Capitol Hill Watch Party and the results of the StudyOne national consumer survey on Digital TV, while the Spring issue highlighted Digital TV Zone activities, information on the Web site, the ad launch, the 2002 Olympic Winter Games Watch Party and the line-up of shows broadcast in HDTV.

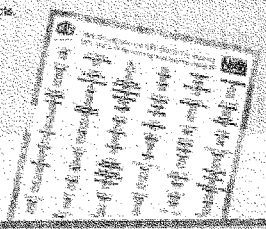
CAMPAIGN MOMENTUM CONTINUES AT NAB 2002

Members of Congress and congressional staff discussed accomplishments and challenges of the digital TV transition.

Continuing the campaign momentum, NAB brought the Digital TV program to NAB 2002 in Las Vegas, May 6-11, 2002. Members of Congress and key congressional staff met to discuss the accomplishments and challenges of the transition, while Federal Communications Commission (FCC) Chairman Michael Powell outlined his voluntary plan for stimulating the transition. NAB also hosted a Digital TV Watch Party and showcased the campaign through materials and visuals, including distribution of *In the Zone: Digital TV News* in addition. NAB partnered with CEA and ATSC to build a DTV store. The store showcased the latest in DTV consumer products.

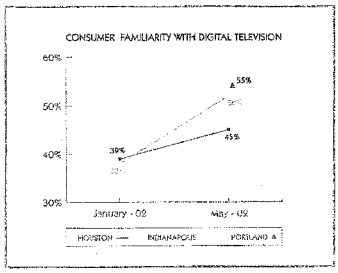
FCC Chairman Michael Powell outlined his plan for Digital TV transition projects.

DTV Store showed consumers the latest in DTV products.



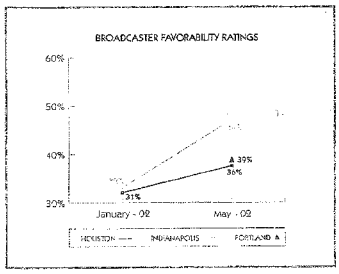
SURVEY ANALYSIS

The National Association of Broadcasters commissioned StrategyOne, a strategic communications and public opinion research agency and Daniel J. Edelman company, to measure the impact of the advertising and public relations campaign among Digital TV Zone audiences in raising awareness of Digital TV.



StrategyOne conducted a two-tiered study: a pre-campaign "benchmark" survey of 200 respondents aged 25 and older in two of the Digital TV Zone markets (Indianapolis, Indiana and Houston, Texas) and a post-campaign "monitor" survey of 200 respondents in two of the original markets as well as a third market (Portland, Oregon).

The findings demonstrate that the Digital TV campaign was successful in improving consumers' familiarity with digital television, which is the first step toward behavioral changes that can translate into increased Digital TV sales. The survey also reports double-digit increases in the perceived advantages of Digital TV, including "picture quality," "better sound" and that it is "superior to regular [analog] television."



In addition, the post-survey showed better broadcaster favorability ratings. Many consumers indicated in survey responses that they would have a more favorable opinion of their local broadcasters is they were airing digital programs.

Clearly, the public relations and advertising campaigns to date have made solid progress in filling the information gap. The key now is to continue to communicate the resonant messages of the program and build upon the campaign momentum to move beyond familiarity. The next challenge, attainable through a coordinated and sustained program, is to reinforce favorable perceptions and transform positive attitude movements into behavioral changes that will lead to increased Digital TV sales.

Mr. UPTON. Thank you. Thank you very much.
Mr. Lewis.

STATEMENT OF RICHARD M. LEWIS

Mr. LEWIS. Mr. Chairman, my name is Richard Lewis, and I am the chief technology officer for Zenith Electronics. I appreciate the opportunity to appear before you and the committee today to discuss the issues related to digital television transition.

From the development of our first proposal for the digital television transmission system in 1987 through our participation in the Grand Alliance, to ongoing efforts to introduce affordable digital products, Zenith has had a long involvement in this issue. Mr. Chairman, your interest in prodding, as well as that of Chairman Tauzin, Mr. Dingell and Mr. Markey, along with Chairman Powell, have been helping to accelerate the DTV transition, and we at Zenith agree with you and other policymakers about the importance to our Nation of a successful transition.

In my brief remarks today, I would like to touch on four issues we believe are crucial to accelerating the transition. The development of compelling HDTV programming to drive the transition; the inclusion of DTV tuners in products to bring the timeliness to the transition; the need for a national cable interoperability standard to allow all of us to participate in the transition; digital rights management to protect the rights of consumers as well as content producers.

Broadcasters have stepped up and are deploying digital transmitters. Sales of DTV products are exploding. In July, for example, The Consumer Electronics Association reports that industry sales revenues from digital televisions surpassed analog for the first time. More than 400 DTV products are now on the market and prices are falling at a rate of 2 percent each month. In Zenith's product alone, we offer entry level HDTV with a built-in digital tuner for under $1,500. Consumers like what they see and are purchasing more and more of these digital devices.

But even with all this progress, there continues to be an insufficient amount of compelling digital programming for them to watch, despite the leadership of major networks like CBS and ABC. Zenith is proud to be a leading sponsor of a number of these programs, as well as posting listings for all high-definition programs on our web site as part of our commitment to digital television. We urge all parties to accelerate the efforts to make this content available, both over the air and through cable carriage.

Equally important to getting programming on the air is getting receivers into the hands of consumers. As you know, last month, the FCC adopted regulations to require off-air digital tuners in nearly televisions by 2007, beginning with the larger, more expensive TV sets. While some manufacturers oppose such mandates on a matter of principle, we at Zenith agree that the FCC's phased-in approach would be the best way to provide consumers with cost effective products while accelerating the transition. We arrived at this conclusion due to the phase-in approach and the realization that the cost premium for adding ATSC reception is already less than $200 and is decreasing rapidly. Others, such as ATI Technologies, a leading DTV chip manufacturer, estimate that due to

increased volume and further chip integration, the cost of a DTV tuner will be under $75 by 2004.

Reports of the doubling of costs of TV sets under the FCC plan are simply untrue, and in most cases, receiver costs will be offset by normal year-to-year price declines. In fact, Zenith believes that by the time digital reception capability ultimately is included in small screen TVs, the cost of producing a digital receiver should be comparable to the cost of producing an analog receiver.

With this terrestrial DTV tuner issue resolved, the largest remaining obstacle to the DTV transition is the consumers' inability to purchase digital television that connects simply and directly to cable. Consumers expect cable compatibility and as manufacturers we believe that it is critical to the success of the transition that a national deployable cable standard be instituted as quickly as possible.

The cable and consumer electronics industries have been meeting to try and resolve the cable compatibility issue, and we have made good progress. Honest disagreements still exist and hard work needs to be done on issues like program guides and selected controls. Still, government action, as addressed in the draft legislation, may be needed to resolve certain issues where the two parties have a different business objective. And in general, Zenith agrees and supports the cable compatibility provisions of the draft legislation.

However, the requirements to include secure digital connections on all digital television we believe goes too far. As in the analog world, many small- to mid-size TV applications do not require connections to external devices. Market forces should decide which connectivity is available to consumers. Furthermore, adding the capability to make the connectors upgradeable to some future undefined successor digital interface technology, as required in the draft legislation, is a daunting if not impossible task.

Turning to digital rights management, as you know, interested parties have been discussing the broadcast flag and we support it. The consumer electronics industry, and Zenith in particular, urge Congress and the FCC to continue to pressure everyone involved to take the actions needed to resolve the remaining issues and allow this DTV transition to be the success that all of us know it can be.

[The prepared statement of Richard M. Lewis follows:]

PREPARED STATEMENT OF RICHARD M. LEWIS, CHIEF TECHNOLOGY OFFICER, ZENITH ELECTRONICS CORPORATION

Mr. Chairman, my name is Richard M. Lewis, and I am Chief Technology Officer of Zenith Electronics Corporation. I appreciate the opportunity to appear before you and the Committee today to discuss digital television (DTV), an issue in which Zenith has a long and continuing interest.

BACKGROUND

By way of background, Zenith is not a newcomer to DTV. We have been investing in this transition from the very early days, since before high-definition television (HDTV) was digital, starting in 1987 with Zenith becoming a founding member of the Advisory Committee on Advanced Television Services (ACATS) of the Federal Communications Commission (FCC). In 1988, Zenith proposed one of the original 23 HDTV systems. In 1990, the FCC mandated that the HDTV standard would be based on the "simulcast" approach proposed by Zenith, and one year later we at Zenith completed our development work on the first version of the vestigial sideband (VSB) digital transmission system. We were instrumental in the formation of the

Digital HDTV Grand Alliance, whose goal was to merge proposed DTV systems into a single best-of-the-best standard. In 1994, the Grand Alliance and the ACATS chose Zenith's VSB technology as the broadcast and cable transmission standard. In 1996, the FCC adopted the digital broadcast standard based on the Grand Alliance system, which includes Zenith's VSB transmission technology. Since then, our company has worked aggressively to help launch HDTV, has introduced innovative DTV products (more than 80 percent of Zenith's current product line is digital), and has continued to invest in developing new enhancements for the digital transmission system, which are currently under consideration by the Advanced Television Systems Committee (ATSC). As you see, Zenith has a long involvement and expertise in this issue.

STATUS OF THE TRANSITION TODAY

Mr. Chairman, you as well as the Chairmen of the full Committee (Mr. Tauzin) and of the FCC (Mr. Powell) have been actively engaged in digital television. Your interest and prodding have been helping to accelerate the DTV transition, and we at Zenith agree with you and other policymakers about the importance to our Nation of continuing our progress in this transition.

Today 475 TV stations are broadcasting digitally. DTV signals are now transmitted in 143 markets and reach 90 percent of U.S. TV households. In addition, 45 percent of all U.S. TV households are in markets where four or more DTV signals are being transmitted. The level at which consumers are purchasing DTV products is astounding. The amount of DTV products sold in July of this year was 81 percent higher than during July 2001. Significantly, July also marked an important milestone as industry sales revenues from digital TV products surpassed those from analog for the first time.

More than 400 DTV products are now on the market, and the Consumer Electronics Association (CEA) estimates that 2.1 million DTV products will be sold in 2002, increasing to more than 4 million next year. Prices for DTV products are falling at a rate of 2 percent each month. The average selling price for a DTV product in 1998 was $3,500; today, it is half that amount. In Zenith's product line alone, we offer entry-level integrated HDTVs under $1,500, HDTV monitors for under $800 and digital set-top boxes for under $400. Despite the naysayers, clearly, consumers like what they see and are purchasing more and more of these devices.

But they have been discouraged by a dearth of compelling digital programming, and the availability of digital content for viewers continues to be a critical issue. There is good news to report on that front, as well. In the fall season just beginning, CBS is continuing its leadership by offering all of its primetime comedies and dramas in HDTV, the fourth consecutive year it has broadcast the majority of its primetime schedule in HDTV, as well as many sports programs. For the second year, ABC will broadcast all of its series and theatrical movies in HDTV, including surround-sound. Zenith is proud to sponsor primetime HDTV broadcasts in conjunction with these networks as a key element of our advertising program to promote DTV. Cable and direct broadcast satellite program providers such as HDNet, HBO, Showtime, Discovery and others are initiating new digital programming, including HDTV, but these programs are not available to terrestrial broadcasters. The best impetus for the DTV transition is compelling applications, including high definition programming for our customers to view.

All of these factors show that the DTV transition is well underway, and momentum is growing. However, work remains to be done before the Nation will realize the full fruit that can be borne from our digital future.

TUNER STANDARDS

As you know, last month the FCC adopted regulations to require off-air DTV tuners on nearly all new TV sets by 2007. This is to occur on a five-year phased-in schedule, beginning with larger, more expensive TV sets. While some manufacturers oppose such mandates as a matter of principle, we at Zenith agree that the FCC concept makes sense, believing that a phased-in approach will be the best way to provide consumers with cost-effective products while accelerating the DTV transition. We arrived at this conclusion because we recognize that the cost premium for adding ATSC reception capability to sets is already less than $200 and will decrease rapidly.

Economies of scale driven by the increased sales volume from the tuner mandate and integration and consolidation of functions into single chips will enable this cost premium to decline even more quickly. For example, ATI (a leading chip manufacturer) estimates that, due to increased volume and further chip integration, the cost of a DTV tuner will be under $75 by 2004.

Some have spoken of doubling the cost of a television by introduction of a tuner mandate. This is simply not going to happen. Zenith believes that, by the time digital reception capability ultimately is included in small-screen TVs, the cost of producing a digital receiver should be essentially comparable to the cost of producing an analog receiver.

Using the phased-in approach outlined in the FCC's tuner mandate, starting with large screen sets, the cost of implementation is offset by routine declines in industry pricing. By the time medium screen sizes are affected, the cost of implementation will have dropped due to increased volume, and once again in many cases competition-based price reductions will have offset the incremental digital costs. Consumers will end up with a feature that benefits the public interest in accelerating the DTV transition, with minimal financial impact on consumers.

Some may view our decision to support this initiative as self-serving based on our intellectual property position related to the ATSC standard, which I described earlier. Clearly, Zenith, other consumer manufacturers and many other parties will benefit from a rapid transition, but our motives are based on an honest evaluation of what will accelerate the transition and allow our Nation to achieve important public policy goals, including reclaiming analog spectrum as soon as possible.

Suffice it to say, there has been some disagreement among manufacturers about the necessity for such a mandate. The FCC has now acted, and we at Zenith are moving forward with plans to comply with the FCC's directive. Section 9 of the proposed legislation affirms the FCC's authority to provide the mandate, and we are supportive of the schedule set out by the FCC for the reasons I have mentioned above.

REMAINING ISSUES

Despite the advances to which I have referred, the remaining issues are significant and pose storm clouds on the horizon of the DTV transition.

1. Cable Compatibility

With the terrestrial DTV tuner issue resolved, the largest remaining obstacle to the DTV transition is the inability of consumers in this country to purchase DTVs and set-top boxes that connect simply and directly to a home digital cable jack, anywhere in the country. Cable compatibility—which today permits consumers simply to connect their cable directly to a TV without a separate set-top box—is something Americans have come to expect. Congress recognized the importance of cable compatibility when in 1992 it enacted section 624A of the Communications Act of 1934, requiring compatibility of cable and consumer electronics equipment.

Today, approximately 70 percent of American households receive their primary TV signals by means of their cable system, with the majority receiving existing analog service over plug-and-play standard TVs without the need for a set-top box. As manufacturers, we believe that it is critical to the success of the DTV transition that a national deployable cable standard be instituted as quickly as possible.

As you may know, representatives of the cable and manufacturing industries have been meeting to attempt to resolve the cable compatibility issue, in accordance with section 629 of the Communications Act of 1934. Good progress has been made in this regard, many issues have been resolved, and positive discussions continue. We have committed to update the FCC on the status of our efforts by mid-October. Still, government action, as addressed in the draft legislation, will assure that technical standards are put in place and supported fully by all cable operators nationwide, and that acceptable business terms are applied for implementation of the standards in retail consumer navigation devices.

Cable operators should be required to support consumers' equipment that complies with common national technical standards. These standards would enable consumers, using unidirectional (downstream-only) retail equipment and a cable operator-provided Point of Deployment ("POD") security card, to receive and navigate premium cable programs that require specific authorization, and view a simple program guide with accurate data. The standards also should provide for nationwide portability of consumer equipment. This is essential to ensure that consumers' investment in their equipment is not lost when they move. The draft legislation addresses this issue.

The standards also should provide increased protection for the cable network from harm and theft of service. Manufacturers recommend that the standards be based on consensus technical standards set by American National Standards Institute (ANSI) accredited consensus standard developers, under procedures that offer all interested sectors an equal opportunity to participate in their development. The draft bill requires that the ANSI standards be used. Any standards established should evolve to keep up with technological change, with a balanced industry council to ad-

vise on changes as necessary. The standards should be used by cable operators in the equipment they provide to consumers starting no later than the date when integrated security is phased out (currently scheduled by the FCC for 2005). The draft bill establishes this date as the appropriate timetable.

The tuner standard mandated by the FCC presents an opportunity for rapidly integrating cable compatibility, since the circuitry required to add digital reception capability in a TV achieves more than 90 percent of what is needed to add cable reception as well. Significant economies of scale could be achieved if the integration of both capabilities could be done simultaneously. The FCC has mandated a right of attachment for retail navigation devices, and standards should be adopted that include the right of manufacturers to incorporate POD security module technology into such devices, subject to reasonable licensing terms and manufacturers' self-certification of compliance with cable compatibility standards. Of course, nothing should preclude manufacturers (both consumer electronics manufacturers and proprietary suppliers of equipment to cable operators) from exceeding the standards voluntarily, with products such as future "Open Cable" ready sets.

Zenith agrees with the DTV cable compatibility provisions in the draft legislation. However, the requirement to include "secure digital connections" on all digital televisions goes too far. As in the analog world, many small- to mid-sized TV applications do not require connections to external equipment. Market forces will assure that the required connectivity is available to consumers. Furthermore, making these connectors "upgradeable to successor digital interface technologies" is a daunting, if not impossible, task because the technical requirements for these future interfaces is unknown.

We support the proposed standard that CEA submitted to the FCC because it accomplishes many of the goals that I have mentioned. The proposal will promote the DTV transition by enabling an open and innovative marketplace for DTV cable products. If all cable systems complied with this standard, purchases of DTV cable products would increase because consumers would have confidence that their purchase will work anywhere in the United States. This would move us forward toward widespread adoption of DTV.

2. Broadcast Flag

In 1984, the Supreme Court affirmed the capability of consumers to make copies of TV broadcasts for their personal use ("fair use" rights). Fair use is extremely important in the digital age. Consumers should continue to have the right to private, noncommercial home recording of content that originates as free terrestrial broadcasts, without any authorization being required or without any technical restrictions regarding that home recording. As you know, discussions have been ongoing among content providers, broadcasters, information technology companies, consumer representatives and consumer electronics manufacturers regarding the suitability of a "broadcast flag" approach to restrict the unauthorized redistribution of TV programming.

In order for there to be a sufficient amount of HDTV programming to drive consumer interest and investment in DTV, we must ensure that content owners have confidence that the works they release, regardless of the distribution method, are protected from illegal piracy, and especially from instantaneous, unauthorized retransmission over the Internet. The DTV transition cannot be a step backward in terms of the protection of copyrighted works.

Zenith has no intellectual property interest in any content protection technology. We do believe that the "broadcast flag" proposal as currently envisioned is a workable solution that balances the needs of copy protection rights against "fair use" rights if applied appropriately. As recently as last week, a large cable operator in an urban market had marked all digital content as "Copy Never," preventing digital recording of any kind.[1] It is this kind of misuse that causes us concern, and we urge that any legally mandated restrictions intended to protect intellectual property rights be narrowly tailored to preserve consumer home recording rights.

Further, we are concerned that certain parties are proposing a broadcast flag process that does not contain objective criteria to allow new technologies to be "approved[" for the purpose of protecting content. Rather, the current proposal in this regard is completely subjective. This could thwart investment in technology development, because companies will be unsure if they can gain approval even if a technology is shown to be superior. Zenith notes that the draft bill requires that the technical criteria to be established must be objective, and applauds this support for a critical issue.

[1] Cablevision in New York City, San Jose Mercury News, September 18, 2002.

The draft legislation preserves the functionality of digital equipment with analog and existing digital tuners, a provision with which Zenith agrees. It is also desirable, as the bill proposes, that changes due to technological advances should be accommodated. In addition, the draft bill by statute would preclude analog outputs in equipment after July 1, 2005; Zenith does not think it is necessary to set this prohibition in law. The reality is that analog outputs eventually will not be included in equipment because of the transition to a digital environment. It is not necessary, therefore, for Congress to intervene in the manufacturing process through this kind of prohibition.

3. Cable must-carry

Because so many households in our country receive their television signals by means of their cable system, it is essential that cable companies carry digital signals if we are to make a successful transition to DTV. Cable carriage of digital signals is pro-competitive, pro-consumer, and most importantly required by law. Title VI of the Communications Act of 1934 requires that cable operators carry the signals of local commercial television stations. Sections 614 and 615 were adopted because Congress determined that, without mandatory carriage provisions, the economic viability of local broadcast television and the capability to generate valuable local programming would be endangered. Must carry enables consumers to view local news, public affairs, and other programming on their local broadcast stations. Congress intended that cable systems would be a conduit for DTV services, benefiting consumers and ensuring the strength of free over-the-air broadcasting.

Cable operators argue that requiring this carriage will diminish their capability to offer a broader variety of cable services, but this argument is not valid in the face of rapidly expanding cable channel capacity. Cable operators must carry local broadcast signals, including multicasting applications, if programming choices are to expand, and in order for us to achieve a near-term transition to DTV, with the resulting return to the government of spectrum used for analog services.

CONCLUSION

The consumer electronics industry, and Zenith in particular, have been at the forefront of efforts to achieve a successful DTV transition. The success of our company is tied directly to the success of the digital transition and the strength of our conviction can be judged by our actions.

We have made major investments in DTV R&D for 15 years, developing standards and technologies for HDTV broadcasting, and we continue to invest in enhancements to further extend the capabilities of DTV technology. Zenith is the sole sponsor of ABC's primetime HDTV lineup, and we have expanded our role with CBS as lead sponsor of the network's primetime HDTV programming. We are aggressively introducing a broad line of DTV products, including low-cost integrated HDTVs. We are helping consumers to find what's on the air in HDTV in their area through our web site. And we have been supporting the United States' effort to establish the U.S. DTV standard throughout the Americas.

Together, industry and government have made significant progress, but more remains to be done. All parties need to step up and do their part to get the remaining issues resolved. A successful DTV transition is dependent on the adoption and implementation of a nationwide standard for sending DTV over cable. It is critically important that cable systems and DTV products be compatible. We must conclude the digital must carry debate, and copy protection issues must be settled. High-quality programming is absolutely required so that consumers receive value for their investment. I am confident that these issues can be addressed if we all work together, but we must act promptly.

I commend you, Mr. Chairman, and the other Members of this Committee for your ongoing efforts to move the various industry sectors toward agreement on these matters. I will of course be glad to attempt to answer any questions you may have, and I thank you again for this opportunity to appear here today.

Mr. UPTON. Thank you very much.

Mr. Willner, welcome.

STATEMENT OF MICHAEL S. WILLNER

Mr. WILLNER. Thank you, Mr. Chairman, and I will change my first line from good morning to good afternoon. I am Michael Willner, vice chairman and CEO of Insight Communications, a company that serves nearly 1.5 million subscribers, cable sub-

scribers. Mr. Chairman, I want to commend you and your colleagues for your leadership on this very complex and important issue. The committee's DTV roundtable discussions have played a key role in encouraging all of us, maybe I should say cajoling us into increased industry cooperation and negotiation.

The draft bill released last week sends a clear message to all of the industries involved in the digital TV transition: Resolve outstanding issues through negotiation or you will resolve them for us. I want you to be assured that we in the cable industry heard your message loud and clear, and we believe that the best solution is to resolve these complex issues through business negotiations.

Together we face of problem of how to get a Nation of consumers to migrate from a very good analog television system to an even better digital one. In this regard, I firmly believe that the creation of more high-definition programming is the key to driving consumer demand to digital television. Indeed, cable operators already are rolling out HDTV in dozens of our markets, and despite suggestions to the contrary, we are doing so today without any compatibility or technical issues.

While cable operators invested nearly $70 billion of our own at-risk capital in digital plant upgrades, broadcasters were gifted $70 billion worth of new spectrum on the promise that they would develop HDTV programming. But who has really led in that arena? Well, the cable networks have—HBO, Showtime, Discovery, Madison Square Garden, among others. The cable industry made those investments because we operate in a very highly competitive environment, and we know we must provide customers with new and differentiated digital services. High-speed Internet access, cable telephony, video-on-demand and high-definition television are just the beginning of the digital cable revolution.

Because broadcasters have largely failed to deliver on their HDTV promise, they are now coming back to Congress to ex-appropriate scarce cable bandwidth worth billions of dollars more. Let me put this in perspective. Compared to our $70 billion investment of our own at-risk capital, broadcasters have spent at the highest estimate that I can come up with no more than $5 billion on the digital conversion and now they want more from us. We are encouraged the draft legislation includes a prohibition on requiring dual carriage of broadcasters' analog and digital signals during this transition. It correctly recognizes that a double dose of must-carry would deprive consumers of a diverse choice of programming and other exciting digital services. It would do nothing, nothing at all, to accelerate the DTV transition and probably would slow it down with mere duplicative programming.

For many of the same reasons that dual must-carry is a bad idea, multiple must carrying is an even worse idea. Cable operators support carrying local broadcasters principal channel after the digital transition. They do an important job and we support it. That is not the issue. The rules of the game must encourage broadcasters to create new and attractive digital programming. This will never happen if they are gifted carriage and don't have to earn it by developing content that is attractive to our consumers. If they earn it, cable operators will want to carry it just as we at Insight, Time Warner and other cable operators have done with the public broad-

casters who have presented us with a compelling business plan and we accepted it. Commercial broadcasters, on the other hand, seek to gain access with no such accountability.

Mr. Chairman, on another subject, I know that the committee is also focused on facilitating the deployment of integrated digital TV sets. We share a common interest with the consumer electronics industry when it comes to integrated DTVs. Equipment manufacturers and retailers want to sell digital television sets, and we want to create a retail environment for them to do so. As an industry, we are actively engaged in negotiations with the CE industry to resolve a wide range of very, very complex issues so we can achieve one common objective. Since July there have been numerous daylong meetings involving senior executives of leading cable and consumer electronic companies. These discussions are continuing and hold real promise. We strongly believe inter-industry negotiations will achieve the results more effectively than government-imposed mandates, and the cable industry is committed to working to achieve those solutions so that Congress won't have to do so.

The draft bill clearly signals the direction that your committee is prepared to head during the next Congress. Let us use these next several months to see what inter-industry discussions can produce, and if we are unsuccessful, then Congress should consider alternative actions to advance the digital TV transition. We share with you the common goal of bringing the full benefits of digital technology to all Americans as soon as possible.

[The prepared statement of Michael S. Willner follows:]

PREPARED STATEMENT OF MICHAEL WILLNER, VICE CHAIRMAN AND CHIEF EXECUTIVE OFFICER, INSIGHT COMMUNICATIONS

Mr. Chairman, members of the subcommittee, my name is Michael Willner. I am Vice Chairman and CEO of Insight Communications, a cable company with 1.4 million customers in Illinois, Indiana, Kentucky, Ohio, and Georgia. I also serve as Chairman of the National Cable & Telecommunications Association, the industry's leading trade association which represents cable companies serving more than 90 percent of the nation's 68 million cable customers and more than 200 cable program networks.

I appreciate you giving me the opportunity to testify about the cable industry's efforts to advance the digital television transition. Since the NCTA Board of Directors, which is meeting today in New York, has not had the opportunity collectively to review the staff draft, I am testifying today in my corporate capacity.

I want to commend you and your colleagues for your leadership on this very complex and important issue. The DTV roundtable discussions held by Chairman Tauzin over the past year have been instrumental in encouraging increased cooperation between the consumer electronics industry, broadcasters, the content community and the cable industry. The progress we have achieved thus far is largely due to your steadfast determination to get the transition to digital television on track.

At the core of the digital TV transition are issues of consumer demand so it is my strong belief that marketplace solutions will bring about results more efficiently than government imposed mandates. But I appreciate your frustration that more progress has not been made. The staff discussion draft released last week sends a clear message to all of the industries involved in the digital TV transition: resolve outstanding issues through inter-industry negotiation or Congress will resolve them through legislation. The cable industry has heard your message loud and clear. We remain dedicated, and in fact are actively working to find solutions through private sector negotiations.

Before I discuss what the cable industry has done, and continues to do, to advance the transition to digital TV, it is worth taking a moment to recall the origins of the transition and how we got to where we are today.

BACKGROUND

In the late 1980s, high definition television (HDTV) was being advanced as the next great consumer electronics breakthrough. The Japanese had developed an analog HDTV system ("Muse") that promised to offer consumers crystal-clear pictures and sound. This early version of HDTV required more than 6 MHz of spectrum. Support for high definition television spread for a variety of reasons. Television set manufacturers saw HDTV as a way to sell more equipment. And the U.S. broadcast industry saw it as a way to gain access to additional spectrum that otherwise might go to other uses, particularly public safety.

In 1987, the broadcast industry petitioned the FCC to investigate the potential of high definition TV technology and urged the Commission to postpone its plans to reallocate broadcast spectrum until its study of HDTV was complete. The FCC agreed, and began to examine the many issues involved in making a transition to a new television standard.

While working on the HDTV standard, American electronics experts discovered that television programming could be digitized to transmit high definition pictures. They also discovered that digital technology could be used to send multiple signals of "standard definition" (SDTV) programming in the same amount of spectrum. This digital standard—whether used to transmit HDTV or SDTV—used just 6 MHz of spectrum. But, it was not compatible with the existing television system, meaning broadcasters' new digital signals could not be viewed on existing analog television sets.

The broadcast industry urged the government to give each TV station an additional 6 MHz of spectrum in order to make the transition to digital. They argued that if they didn't get the full 6 MHz, consumers would be deprived of one of the great benefits of digital technology—high definition television. In letters, speeches and testimony before congressional committees, broadcasters espoused the virtues of HDTV. The message was clear: they would use the digital spectrum to offer high definition television. And in the end, every broadcast TV station was granted 6 MHz of additional spectrum without having to pay for it—a scarce public resource owned by the American people worth $70 billion given away for free to the broadcast industry. Some critics labeled this spectrum giveaway as scandalous. But broadcasters responded with a promise: they would use the public's valuable airwaves to provide Americans with cutting edge new technology—high definition television.

Today, we are only four years from the 2006 target set by Congress for the end of the transition and only two percent of consumer households have purchased digital television sets. Last year, Americans purchased more than 30 million new television sets but just over one million of those sets were digital.

Why have Americans been so slow to adopt digital broadcasting? Largely because so few broadcasters are offering the compelling high definition content they promised in exchange for free digital spectrum. Not to mention that only 395 of the nation's 1,309 commercial broadcast stations are even broadcasting a digital signal, despite the FCC's deadline that all commercials stations were to be transmitting a digital signal by May 2002.

CABLE'S COMMITMENT TO THE DIGITAL TRANSITION

While the broadcast industry has missed deadlines and failed to meet its promises, the cable industry has strongly embraced digital technology. In the six years since the passage of the 1996 Telecommunications Act, the cable industry has invested more than $65 billion—or over $1,010 per upgraded cable customer—to upgrade our plant to an interactive digital broadband platform. The cable industry has been a leader in the transition to digital television and has taken on this role without government mandates or subsidies. Cable companies have invested private risk capital to create a digital platform in order to offer consumers new competitive services—digital video, high-speed Internet access, cable telephony, interactive television and high definition television. Cable has moved into the digital world with great speed, and we have done so willingly. By comparison, broadcasters have invested less than $2 billion in upgrading their facilities for digital television, a relatively small amount given the government's contribution of $70 billion of spectrum.

The cable industry believes that compelling high definition programming is the key to the digital transition. Cable program networks are leading the way in creating high definition programming and cable operators are committed to delivering high definition programming to consumers all across the country. Time Warner Cable has been aggressively rolling out HD service and has launched HD tiers in more than 45 of its markets. Charter launched its high definition service in May 2002 in five markets: Alhambra/Pasadena and Glendale/Burbank, CA; University Park/Highland Park, TX; Miami Beach, FL, and Birmingham, AL. Charter is also

on schedule to launch HDTV service later this year in Kalamazoo, MI, and St. Louis, MO. Comcast began offering high definition broadcast and cable programming in November 2001 in the Philadelphia market and will soon launch HDTV in the Washington, DC, metro area. Cox is offering high definition in Phoenix and Las Vegas, and announced last week that in November it will make high definition service available in Fairfax County, Virginia.

Mr. Chairman, there has been a great deal of misinformation regarding cable-DTV compatibility which I will address in more detail later in my testimony. But I would like to take this opportunity to make one thing perfectly clear: cable operators are providing high definition programming to their customers with NO compatibility problems whatsoever. If you go to New York or Philadelphia or Houston or Tampa, Florida, cable customers are enjoying HDTV provided by their local cable systems.

As mentioned, cable program networks are leading the digital transition by providing quality high definition programming. HBO alone currently offers more HD content than all of the broadcast networks combined. Showtime is a major producer of HD as well. In June, Discovery launched a 24-hour HDTV channel (Discovery HD Theater) providing all the popular categories of real world entertainment as offered by Discovery's networks in a theatrical format, with limited commercial interruptions. Market forces, particularly competition from the direct broadcast satellite industry, and competition between programming networks, are motivating cable operators and programmers to invest in HDTV, and over the coming months still more cable operators will begin offering HD programming.

I am proud to say that the cable industry was the first to endorse the voluntary plan proposed by FCC Chairman Michael Powell designed to accelerate the digital television transition. Chairman Powell asked the four major broadcast networks, HBO and Showtime to provide high definition or compelling new digital programming during their prime time schedules, and he asked cable operators to carry that programming. In May, the industry's 10 largest cable operators endorsed Chairman Powell's challenge by making the following commitments for systems in the top 100 markets that have been upgraded to 750 MHz and serve at least 25,010 customers:

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- By January 1, 2003, these cable operators will offer to carry the signal of up to five digital commercial or public television stations and/or cable networks that provide HDTV programming during at least 50% of their prime time schedule or a substantial portion of their broadcast week.
- As part of this digital complement, operators may offer to carry other "value added DTV programming" that would create an incentive for consumers to purchase DTV sets.
- We will also provide our customers with special HD set-top boxes with appropriate digital connections.

Despite the slow start of the broadcast industry's transition to digital television, there are reasons to be optimistic about the future of DTV. Developments in the marketplace and an increasing level of cooperation among all DTV stakeholders indicate that the transition to digital TV is beginning to take hold.

As you know, industry-wide negotiations resulted in significant progress toward the development of a broadcast-flag to prevent the unauthorized Internet redistribution of high definition broadcast content. Resolution of this and other copy protection issues are critical to ensure the availability of high-value digital content.

The cable industry earlier reached voluntary agreements with the consumer electronics industry to facilitate the manufacture and marketing of integrated digital television sets that connect directly to cable systems. And we are continuing to work with the consumer electronics industry on this important issue. Over the past several months senior executives of leading cable companies have been meeting regularly with their consumer electronics counterparts in an effort to resolve a very complex set of technical and business issues.

The price for digital television sets is clearly in decline with the average cost for a high definition digital television having dropped by over 25 percent since they were first made available at retail in late 1998. As more high quality programming becomes available, consumer demand will continue to drive down the cost of digital televisions.

Let me turn now to some of the issues which are raised by the staff draft and are also the subject of ongoing FCC proceedings.

BROADCASTERS DUAL AND MULTIPLE MUST CARRY SCHEMES SHOULD BE REJECTED

The most obvious way to expedite the DTV transition is for broadcasters to create compelling high definition programming. Unfortunately, rather than invest in high

value digital content that will both attract viewers and give cable operators a market incentive to carry them, some broadcasters are asking Congress for yet another handout. They want Congress to expropriate billions of dollars of the cable industry's spectrum and force cable operators to carry both their analog and digital signals during the transition. And that's not all. Once the transition is complete, these broadcasters want the government to require cable operators to carry multiple standard definition versions of each broadcast station rather than a high definition version of the broadcaster's signal, the functional equivalent of what cable operators do today in the analog world.

Mr. Chairman, neither of these highly regulatory proposals will advance the digital television transition and both should be rejected by Congress.

DUAL MUST CARRY

Requiring cable operators to carry a standard definition digital copy of every broadcaster's analog signal would provide nothing new for cable customers while limiting the use of cable's limited spectrum for new services our customers value. Despite the substantial investment cable has made to upgrade its plant—cable systems have finite capacity. A typical upgraded 750 MHz cable system added only 200 MHz of digital capacity. Competing uses for this additional capacity include high definition programming, new digital video channels, video-on-demand services, high-speed Internet access, cable telephony and future services like video conferencing and home networking. A dual must carry requirement would eliminate the ability of operators to effectively manage limited bandwidth in order to provide the right mix of digital services our customers want.

Nor would a dual must carry requirement do anything to promote the sale of digital television equipment. Compelling high definition content—not two copies of every analog broadcast program—will give consumers an incentive to purchase an expensive new DTV set. Compelling content will drive DTV sales up and bring prices down to a range more consumers can afford. And if broadcasters offer compelling programming, cable operators will carry it without a government mandate, as evidenced by voluntary agreements cable operators have entered into to carry broadcasters' digital signals and the cable industry's voluntary commitments under the Powell Plan.

Dual must carry would also reduce the amount and diversity of programming available to cable customers. There is no public policy reason why two signals of every broadcast station should get preferential carriage over each and every cable network. Under a dual carriage scheme, many operators would be forced to drop popular cable networks in order to make room for duplicative digital broadcast signals. Even where cable systems have capacity, a "broadcaster first" policy would deprive consumers of opportunities to enjoy numerous new cable networks that have to compete for carriage and are trying to gain a foothold in the market. These new services include C-SPAN 3, BET Gospel, Lifetime Movie Network, Noggin, Discovery en Espanol, History Channel International and the Hallmark Channel.

Rejecting dual must carry will not result in consumers losing access to the broadcast stations they enjoy today. During the transition to digital television, cable operators will continue to carry every local broadcaster as required under current must carry rules. No broadcaster's voice will be lost and no cable customer will ever lose access to his or her favorite local broadcast station.

We are encouraged that the staff draft includes a prohibition on the dual carriage of a broadcaster's analog and digital signal during the transition, recognizing that a double dose of must carry is unfair to consumers, would unfairly harm cable operators and cable programmers, and would do nothing to accelerate the DTV transition.

MULTIPLE MUST CARRY

Broadcasters also want the government to force cable operators to carry multiple streams of standard definition programming after the digital transition is complete. Like dual carriage, requiring cable operators to transmit additional channels per local broadcast station means that less cable capacity will be available for innovative advanced services consumers might prefer.

Must carry was established to preserve the availability of broadcast stations for over the air viewers, not to underwrite, at the expense of cable operators and programmers, the availability of six times as many broadcast channels. Cable operators have already committed to carry broadcasters' primary digital channel in place of broadcasters' analog channel once the transition is complete. Requiring carriage of multiple digital channels would represent a significant expansion of broadcasters' must carry rights and cable operators' must carry obligations.

As Hallmark Channel CEO Lana Corbi has testified, multiple must carry also unfairly discriminates against cable programmers. Nearly 300 satellite programming networks and 60 regional networks compete with local broadcasters for cable carriage. Guaranteed carriage of six or more digital channels per broadcast station would exacerbate the preferential treatment of broadcasters vis-à-vis cable programmers in competing for limited digital spectrum—allowing each broadcaster to claim by right up to half a dozen channel slots that might otherwise be used to carry competitive satellite programming networks.

Multiple must carry, as a concept, is constitutionally suspect. The Supreme Court has expressly held that cable operators and programmers engage in and transmit speech and therefore are entitled to protection under the First Amendment. Giving each broadcaster the right to guaranteed carriage of six or more digital channels instead of their single channel would multiply the burdens of must carry on the speech rights of cable operators and programmers without additionally advancing any government interest. Moreover, it would result in the permanent, physical occupation of a substantial portion of cable plant without just—indeed, without any—compensation, in violation of the Fifth Amendment.

Despite their demand for multiple must carry, commercial broadcasters still have not presented a viable business plan for multicasting. In the many thousands of pages of testimony on this issue that broadcasters have filed with the FCC, you will scarcely find any mention of how broadcasters, in fact would use multicasting or how it would contribute to the economic well being of over-the-air television since broadcasters would be fractionalizing their own ad supported viewership. Rather, the likelihood is that broadcasters will be warehousing this spectrum with low-budget or duplicative broadcast programming. These are questions that neither Congress nor the FCC has examined. As a matter of both law and sound public policy, cable operators and consumers should not be required to forfeit valuable channel capacity and new services to help broadcasters launch new undefined businesses while blocking competitive satellite programming networks from gaining carriage.

THERE ARE NO CABLE-DTV COMPATIBILITY PROBLEMS

The simple fact is there are **no compatibility problems** between digital TVs and cable systems. Today, cable operators are providing customers high definition programming using digital set-top boxes with **no technical or compatibility problems.** When the consumer electronics industry and broadcast industry complain about a lack of DTV "compatibility," what they are really referring to are the standards necessary for the manufacture and sale of integrated DTV sets that will work with cable systems without a set-top box.

Let me be very clear: the cable television industry strongly supports the retail availability of cable set-top boxes and "plug and play" DTV sets. It is in the best interest of our business to ensure that consumers have the ability to walk into any consumer electronics store and purchase a digital television set that connects directly to any cable system. DirecTV and Echostar currently enjoy a huge marketing advantage over cable operators because DBS customers can move from town to town and use the same equipment. A portable set-top box or "plug and play" DTV set would allow cable operators to erase this advantage.

However, while the availability of "plug and play" sets is an important part of our business, it is not a critical component of the digital transition. As evidence, one only needs to look at the incredible growth of the direct broadcast satellite industry. DBS subscribership has skyrocketed from 2 million in 1996 to over 19 million today—and virtually every one of these DBS subscribers receives service through a proprietary digital set-top box. Ironically, the principal suppliers of digital set-top boxes to the satellite industry are the very same companies who claim that there is a "cable compatibility" problem when cable companies use digital set-top boxes to deliver high definition television. The explosive growth in the DBS market clearly illustrates that consumers are willing to use a set-top box in order to receive better quality and more choices. Our desire and commitment in promoting the availability of fully functional "plug and play" digital television sets has nothing to do with the digital transition and everything to do with our ability to remain competitive with DBS.

As evidence, the cable industry, through its research and development consortium, CableLabs, has undertaken various measures to facilitate the retail availability of set-top boxes and integrated DTV sets in full compliance with FCC rules and the 1996 Telecommunications Act.

CableLabs developed a technology that enables cable operators to provide customers with a separate security module, known as a point-of-deployment or POD module. The POD is similar to the "smart cards" used by DBS systems that author-

ize the customer to receive service. Cable subscribers insert the POD into a set-top box or integrated DTV set (called host devices) purchased at retail. The Pod-Host Interface License Agreement (PHILA) provides manufacturers with the specifications necessary to make certain host devises work with operator supplied PODs. CableLabs met all of the FCC milestones for specifications and testing of this separate security technology and cable operators have committed to supporting set-top boxes and integrated DTV sets that are manufactured to these specifications.

As further evidence of our support for the retail availability of integrated DTV sets, on February 22, 2010, the NCTA and CEA reached voluntary agreements that enable manufacturers to build digital television sets that can be connected directly to digital cable systems. These agreements touted by CEA, detail the technical specification that enable these integrated "plug and play" DTV sets to work with cable systems. These basic "plug and play" sets are unidirectional and will only be able to receive one-way digital programming, including high definition content and premium services (HBO, Showtime, etc.). For that reason, we believe that equipment manufacturers should include a DVI digital connector on all integrated DTV sets. A DVI connector is an uncompressed, high-bandwidth digital connector that is necessary for a digital television set to receive and fully display all of cable's advanced services, including high definition graphics. With a DVI connector, consumers who purchase a "plug and play" digital television would have the choice and flexibility to later purchase or lease a set top box that would enable that set to receive all of the interactive services offered by cable or direct broadcast satellite providers. Otherwise these consumers would be forever stranded with a limited functionality set. Yet that is what the DTV manufacturers would like the government to require. The staff draft would require all integrated one-way digital television sets to include a digital connector, recognizing that consumers should not be saddled with sets that have built in obsolescence.

While the February 2010 NCTA-CEA agreement is a good first step in the direction of "plug and play" DTV sets, we believe it is in the best interests of the consumer to rapidly move to a world where an integrated DTV set can receive all of the interactive digital services we provide today and will provide in the future. In that regard, in January 2002, significantly ahead of schedule, CableLabs published specifications for the OpenCable Applications Platform (OCAP). These "middleware" specifications, **voluntarily** developed by the cable industry will enhance the ability of the consumer electronics industry to build and market integrated DTV sets (as well as digital set-top boxes and other navigation devices) with **nationwide** portability. Over 90 companies—including Panasonic, Philips, Samsung, Sharp, Sony, and others—participated in the OpenCable developers' conference addressing OCAP issues.

The OCAP software specification enables cable to create an interactive television delivery mechanism to provide enhanced services to cable customers that have purchased OCAP compliant integrated DTV sets and set-top boxes. OCAP-enabled devices will be able to receive services available on set-tops provided by the cable operator and can be upgraded through software downloads when new services become available.

Embracing the release of OCAP specifications and the development of an open environment for the manufacture and retail sale of digital television consumer equipment, the nation's top cable MSOs have committed that their systems will support CableLabs-certified OCAP enabled devises once such equipment becomes commercially available.

The development of specifications necessary for equipment manufactures to build and market an array of digital devices that will work with cable systems is an incredible achievement. However, our work is not complete. The consumer electronics industry has raised a number of important issues regarding our February 2010 agreement, PHILA and OCAP. As mentioned, there are ongoing negotiations between CE companies and cable companies in an effort to resolve many of these issues. Companies have had four full day negotiating sessions since July and have made significant progress on a number of issues. We intend to continue those discussions and are making every effort to come to a mutually satisfactory resolution of these highly complex technical and business issues.

PHILA AND COPY PROTECTION

Finally, I would like to address the concerns that have been raised by the consumer electronics industry and some Members of this subcommittee regarding the copy protection tools contained in PHILA.

Content owners have made it clear that they will not release high value product in a digital world without assurances that such content will not be subject to uncon-

strained copying. That is why this subcommittee has been working so diligently with the content community and the consumer electronics industry on the development of a broadcast flag to prevent the unauthorized redistribution of content over the Internet. And that is why PHILA contains tools that enable cable operators to provide the copy protection content owners demand. The DBS industry, in order to obtain the same high value content, has also included copy protection tools in its proprietary set-top-boxes. The cable industry has no incentive to restrict copying or limit the use of content provided to its cable customers. But we must be able to obtain high value content for our subscribers and we must be able to compete for that content on a level playing field with other delivery platforms.

DOWN-RESING

One particular copy protection provision in PHILA, known as "down-resing," has met with strong opposition. I would like to explain why we included that tool in PHILA and how and why we are prepared to remove it.

The "down-resing" provision was included in PHILA in order to ensure a level playing field between cable and DBS. PHILA requires a manufacturer to include in its products the capability of "down-resing" high-definition programming provided over component analog outputs, which unlike digital interfaces, are not copy protected. "Down-resing" allows high-definition programming to flow to DTVs with greater than standard definition resolution, but without inviting widespread copying. According to press reports, Echostar and DirecTV had already agreed to include within their set-top boxes the capability of "down-resing" high-definition television programming provided over component analog outputs. Content providers sent a clear signal that programming would not be made available to cable without this same capability. Therefore, while cable operators have no business reason to impede our customers' reception of high-definition or other programs, as long as content providers demand "down-resing" and our DBS competitors offer it, cable must be able to provide this copy protection option.

The better long-term solution would be for CE manufacturers to include digital connectors on all digital television sets. Digital connectors may utilize standard copy protection tools in order to assure program owners that high-value programming will not be subject to unconstrained copying or retransmitted onto the Internet. Unfortunately, while cable operators are committed to including digital connectors on their HD set-top boxes, the CE industry **refuses** to make a parallel commitment as FCC Chairman Michael Powell urged as part of his voluntary DTV transition plan. The cable industry strongly believes that the manufacturers of consumer electronics equipment should include digital connectors on all of their DTV products—DVI connectors with high definition copy protection (HDCP) to display high-definition video and graphics, and 1394 connectors with 5C copy protection to connect recording devices. Instead, the CE industry is flooding the market with sets that are only equipped with component analog connectors that cannot provide adequate copy protection. This has left the content community with no choice but to insist on "down-resing" because it is currently the only means to protect high definition content over a component analog connector. As a result, PHILA includes a "down-resing" provision in order to assure that cable operators can obtain high-value programming for their customers.

In an effort to resolve this copy protection question, CableLabs has offered to remove the "down-resing" requirement from PHILA if: (1) the capability to "down-res" is removed from existing DBS set-top box license agreements; (2) all CEA members and other consumer electronics and computer manufacturers commit not to build devices for DBS or other types of distribution networks with the capability of "down-resing" high-definition programming provided over component analog outputs; and (3) MPAA members and other program providers agree not to require the "down-resing" of any content delivered over any existing or future video distribution platform. Under such a regime, cable could compete on a level playing field with other distribution media for access to high value content that our customers desire.

SELECTABLE OUTPUT CONTROLS

The selectable output control specification in OCAP has also generated a great deal of controversy. But there is no practical reason it should be controversial. Cable operators are in the business of providing service to their customers, not "disabling" DTV devices. But the cable industry must be in position to offer the same copy protection tools its competitors can offer. Studios may be encouraged to develop new business models for the early release of high value content if appropriate copy protection is available. However, the content community could insist that this content pass only over a particular digital connector—possibly a new digital connector that

has yet to be developed—that would prevent any possibility that the movie could be copied. If competing delivery platforms can offer studios this capability, cable operators should have the flexibility to offer the same service.

The staff draft would prohibit the cable industry from including down-resing or selectable output controls in its licensing terms. It appears that such prohibition would apply only to the cable industry, leaving DBS operators and other providers of video service free to offer content owners these copy protection tools. Should Congress determine that down-resing or selectable output controls are inappropriate copy protection tools for content delivered to the home, then that prohibition should apply to all delivery platforms. The cable industry must maintain the ability to compete for high value content on a level playing field.

CONCLUSION

Mr. Chairman, Americans own 267 million analog television sets and purchased close to 30 million new analog sets last year. The challenge we face is how to get a nation of consumers to migrate from a very good analog TV environment to an even better digital environment. We believe that compelling high definition programming is the key to driving consumer demand for digital television.

Cable has invested over $65 billion to upgrade our plant to an interactive digital platform capable of delivering high definition programming. Cable operators are rolling out high definition service across the country with no compatibility problems, and cable programmers are offering an ever-expanding menu of compelling high definition content.

Broadcasters, on the other hand, have largely abandoned their promise to deploy HDTV. Instead, they are asking Congress to expropriate billions of dollars of the cable industry's spectrum by forcing operators to carry duplicative standard definition programming—something our customers don't want—while undermining our ability to utilize our new digital spectrum to offer advanced digital services such as high definition programming, video-on-demand, high speed Internet access and cable telephony—something our customers do want. We strongly urge Congress to reject the broadcasters dual and multiple must carry proposals.

We believe that Congress and the FCC have been instrumental in much of the progress made thus far by encouraging cooperation between the consumer electronics industry, broadcasters, content community and the cable industry. As an active participant in Chairman Tauzin's roundtable discussions and the first industry to endorse the Powell plan, cable remains committed to working with Congress and the FCC as we move forward. All industry stakeholders will continue to work together because it is in our best business interest to do so. In the end, marketplace solutions will continue to achieve results more efficiently than government imposed mandates.

Mr. UPTON. Thank you.

Ms. Corbi, we will hear from you, and then we will take a brief break because we have got a vote on the floor again.

STATEMENT OF LANA CORBI

Ms. CORBI. Thank you and good morning. My name is Lana Corbi. I am president and CEO of Crown Media United States. A little more than a year ago, Crown Media launched the Hallmark Channel, a cable network featuring high-quality entertainment programming appropriate for the whole family. The purpose of my testimony this morning is to describe some of the successes Hallmark channel has enjoyed in its first year of operation, to outline our plans for growing the channel in the future and to express our deep concern that these plans will be seriously jeopardized if the government-mandated carriage preference already accorded the broadcast industry is expanded through heavy-handed, digital, must-carry regulation.

Since commencing operations last year, Hallmark Channel has achieved carriage on DBS and cable systems serving nearly 48 million subscribers. An independent research indicates that where Hallmark Channel is not yet offered, it is one of the channels most

desired by viewers and cable operators. The reasons for our success is that in the very rich tradition of Hallmark, we are committed to satisfying the public's demand for compelling family friendly programming. Moreover, as much as any broadcaster, Hallmark Channel believes in serving the public interest. Last year, Hallmark Channel, together with the Jim Henson Company, authorized the FCC to use the Kermit the Frog image in the agency's literature promoting the v-chip. This year we are working with local cable operators and other businesses to sponsor community outreach initiatives centered on the issue of adoption and foster care, the subject of an original series currently presented on the channel.

Looking ahead, Hallmark Channel continues to invest in a substantial number of original productions. We are also actively pursuing opportunities presented by the digital revolution. For example, we are currently demonstrating a Hallmark-branded interactive product and are discussing the presentation of high-definition programming for cable and satellite subscribers. We are proud of our accomplishments and optimistic about the future, but we are also very concerned that our ability to grow our business and launch new ventures will be compromised if broadcasters are given expanded must-carry rights that relegate all non-broadcast programmers to second-class status.

Notwithstanding our impressive growth, Hallmark Channel is still not available in over 42 million satellite and cable homes. A dual carriage requirement that would essentially double the number of channels dedicated to broadcast carriage would place many of these homes out of our reach for the foreseeable future, particularly in the larger markets that are critical to the success of a national program service. I commend Chairman Tauzin for indicating that dual must-carry will not be required under this proposal but believe some clarification is needed in the staff draft to accomplish this goal.

Equally threatening to our future plans is the broadcast industry's demand for multicast digital carriage rights. While I understand the government's interest in protecting existing broadcast stations, to help them each launch a half a dozen new channels is inexplicable to me. Unlike broadcasters, we do no have over-the-air access to viewers nor do we have any mandatory carriage rights. We are not looking for government handouts. We are willing to make our case for carriage at the bargaining table based on the merits of what we are offering the public. We are prepared to compete for carriage not only against 300 other cable networks and a host of new services, such as high-speed Internet and cable telephony but also against nearly 1,700 broadcast stations. All we ask is that the government not place its thumb on the scale in a way that favors carriage of one set of speakers over another.

We are all interested in the success of the digital transition. Digital is the wave of the future. But consumer demand is created and met more efficiently by the operation of market forces than by government dictates. In the end, if broadcasters are given yet another advantage over cable networks in a competitive to reach the viewing public, it will be the public that suffers. Consumer choice will be reduced as duplicative and time-shifted broadcast programming displaces diverse cable programming. Compelling digital program-

ming ultimately will motivate customers to buy new digital television sets. And as a former broadcaster, I assure you that the broadcast industry will have a much greater incentive to produce diverse, high-quality programming if they have to compete with all other programmers for carriage. Thank you for inviting me to testify today.

[The prepared statement of Lana Corbi follows:]

PREPARED STATEMENT OF LANA CORBI, PRESIDENT AND CHIEF EXECUTIVE OFFICER, CROWN MEDIA UNITED STATES

Thank you and good morning. My name is Lana Corbi and I am President and CEO of Crown Media United States. A little more than a year ago, Crown Media launched the Hallmark Channel, a new, 24-hour satellite-delivered programming network that carries forward the legacy of the acclaimed Hallmark Hall of Fame and Hallmark Entertainment productions by featuring high quality entertainment and information programming suitable for viewing by the entire family.

The purpose of my testimony is to describe some of the successes the Hallmark Channel has enjoyed in its first year of operation, to outline some of our plans for growing the channel in the future, and to express our deep concern that our past successes and future plans will be seriously jeopardized if the government-mandated carriage preference already accorded the broadcast industry is expanded through heavy-handed digital must carry regulation. I should note that while my testimony draws on the experience of the Hallmark Channel, it is my belief that the views I express today are shared by dozens of other cable program networks.

First, let me tell you a little about Hallmark Channel's achievements over the past year. Since commencing operations in August 2001, Hallmark Channel has obtained carriage on DBS and cable systems serving nearly 48 million subscribers, making it one of the industry's fastest growing services. And independent research indicates that where Hallmark Channel is not yet offered, it is one of the channels most desired by viewers and cable operators.

The successful launch of the Hallmark Channel is attributable to our commitment to satisfying the public's demand for compelling, family friendly programming through a mixture of high quality archival programming and original productions featuring some of Hollywood's top performers. Some of the programming highlights of the past year include our 25th Anniversary encore presentation of Alex Haley's "Roots"; the four-hour original miniseries "Mark Twain's Roughing It" starring James Garner and an all-star cast; and the original epic western movie "Johnson County War" starring Tom Berenger, Burt Reynolds, and Luke Perry. In addition, in June, Hallmark Channel launched its first original series, the critically acclaimed and award-winning "Adoption." Our concentration on masterful storytelling and compelling entertainment has resonated with viewers. Hallmark Channel finished first among all cable networks in growth for primetime and total household viewership this past summer.

Moreover, like many cable programmers, Hallmark Channel does not regard the presentation of top drawer programming as its sole mission. As much as any broadcaster, Hallmark Channel believes that there are a variety of ways that it can and should serve the public interest. For example, last year, Hallmark Channel, together with the Jim Henson Company, made a gift to the FCC of a license to use the Kermit the Frog image in the agency's literature promoting the V-Chip. And this year, we have been working with local cable operators and other businesses to sponsor community outreach initiatives centered on the issue of adoption, in conjunction with our new "Adoption" series. One such outreach initiative partnered Hallmark Channel with Cox Communications and other local merchants to sponsor an event benefiting Raintree House, a New Orleans foster care facility.

Looking ahead, Hallmark Channel continues to invest millions of dollars in new productions, commissioning 24 new original movies for presentation over the next two years. Even more significantly, we are actively seeking to be a leader in the use of digital technology. For example, we currently are demonstrating a Hallmark-branded interactive suite of services that includes video-on-demand programming, an interactive "arts and crafts" service (called "Crayola Kids") for children and their parents, and digital video greeting cards. Hallmark Channel also is engaged in discussions regarding the presentation of high definition programming for cable and satellite customers.

At Hallmark Channel, we are proud of our accomplishments and optimistic about our future. Our success has come despite the existing regime of must carry regula-

tion that creates a governmental preference for broadcast signals over cable networks. But we are very concerned that our ability to continue to grow our service and to launch new ventures will be compromised if, as a result of additional government interference with the free market, broadcasters are given expanded must carry rights with respect to their digital signal, thereby exacerbating a regulatory scheme that effectively relegates all non-broadcast programmers to second-class status.

One such form of government interference would be the adoption of a "dual must carry" requirement mandating simultaneous carriage of broadcasters' analog and digital signals during the digital "transition" period. Notwithstanding our impressive growth, Hallmark Channel still is not available in over 42 million cable and satellite homes. The reality is that as much as many cable operators would like to add Hallmark Channel to their line-ups, they are unable to do so because of channel capacity limitations. Simply put, even as systems upgrade to add capacity, the demands on that capacity, including demands for broadband and other advanced services, are growing even faster. A "dual carriage" requirement, that would essentially double the number of channels dedicated to broadcast signal carriage, would place carriage opportunities on many systems out of our reach for the foreseeable future, particularly in larger markets that are critical to the success of a national program service. Such a requirement could even threaten our existing level of carriage. I commend Chairman Tauzin for indicating that dual must carry will not be required under his proposal, but believe clarification is needed in the staff draft to accomplish that goal.

Just as threatening to our future plans as dual must carry is the broadcast industry's demand for "multicast" digital carriage rights after the transition is completed. What broadcasters want is a guarantee that if they choose to transmit multiple channels of standard definition programming, cable operators will carry all of those channels without regard to consumer demand. In contrast, cable networks like Hallmark Channel have no guaranteed carriage of even a single channel of programming, much less multiple programming streams and, in fact, we incur a substantial financial cost in the form of launch fees and other marketing expenses associated with our carriage.

Like other independent, satellite-delivered program networks, Hallmark Channel does not have over-the-air access to viewers nor do we have any mandatory carriage rights. But we are not looking for any government handouts. When it comes to convincing cable operators to carry our new services, we are willing to make our case at the bargaining table based on the merits of what we are offering and consumer demand. Broadcasters should be willing to do the same.

We are prepared to compete for carriage not only against more than 300 other national and regional cable networks and a host of new services such as high speed Internet and cable telephony, but also against nearly 1700 broadcast stations. All we ask is that the government not place its thumb on the scale in a way that favors carriage of additional broadcast programming above everything else.

We're all interested in the success of the digital transition. Digital is the wave of the future. But consumer demand is created and met more efficiently by the operation of market forces than by government dictates. Thus, without any guarantee of carriage, it is cable programmers who have taken the lead in developing digital product. I previously mentioned Hallmark Channel's work in developing interactive and high definition programming. Other cable programmers are taking similar steps. For example, HBO, Showtime, Discovery and the Madison Square Garden Network are among the programmers already producing high definition programming. But the progress that we are making will be stymied if we are not allowed to compete for carriage on an equal footing with broadcasters.

I will leave it to the lawyers to cite chapter and verse as to why multicast must carry regulations would be unconstitutional. I understand the policy rationale for the government's desire to protect existing broadcast stations. But to help them each launch a half dozen new channels is inexplicable to me. Protecting existing broadcast stations does not justify, in a world in which hundreds of cable program networks are investing heavily in original programming and are competing for access to viewers, expanding must carry into a vehicle to launch or guarantee the success of new business ventures for broadcasters over other content providers.

The fact is that giving broadcasters multicast carriage rights will disadvantage cable networks (who once again will be put at the "back of the line" when it comes to seeking carriage of their new services) and interfere with the editorial independence of cable operators who are seeking to provide a diverse choice of programming to their customers. Such carriage of standard definition programming won't do anything to advance the digital transition, nor will it preserve or promote the availability of over the air programming from diverse sources.

In the end, if broadcasters are given yet another advantage over cable networks in the competitive struggle to reach the viewing public, it will be the public that will suffer. Consumer choice will be reduced as duplicative or time-shifted broadcast programming displaces high quality, diverse, and original cable programming. It is compelling digital programming that ultimately will motivate consumers to buy new digital television sets. And as a former broadcaster, I can assure you that the broadcast industry will have a much greater incentive to produce compelling programming if they have to compete with all other programmers for carriage.

I urge you to be wary of the potential unintended consequences of the broadcasters' demands. While the highly competitive programming marketplace already is skewed against cable networks by analog must carry, I believe Hallmark Channel can succeed if the best ideas and the best programming are allowed to flourish. But if we are not given a fair chance to compete due the adoption of dual or multiple must carry regulation, the potential offered by digital technology may never be fulfilled.

Thank you again for inviting me to testify today.

Mr. UPTON. Thank you. Take a brief break and return in 15 or 20 minutes.

[Brief recess.]

Mr. BASS [presiding]. The subcommittee will be in order. When we recessed for the vote, the committee had just heard from Ms. Corbi.

The Chair will now recognize Mr. Gleason for an opening statement.

STATEMENT OF JAMES M. GLEASON

Mr. GLEASON. Thank you, Mr. Chairman. My name is Jim Gleason, and I am the president and chief operating officer of Cable Direct, an independent cable business currently serving 40,010 customers and more than 250 rural communities in 9 States, including Colorado, Illinois, Iowa, Mississippi, Missouri and Texas. I also serve as chairman of the American Cable Association.

As a smaller market cable operators, we know the transition to digital broadcast television will not take place in the same way in all markets across the country. The distinction is critical because a forced transition without regard to the impact on smaller markets in rural areas threatens to disenfranchise thousands, if not millions, of television viewers today.

As we see it, there are four challenges. First, important technical and market issues must be resolved to accomplish the transition to digital broadcast television. The key facts about the transition to digital broadcast carriage are these: Uniform standards among broadcasters, cable providers and consumer electronics manufacturers must be developed for the carriage of digital broadcast signals. Assuming such standards can be developed, television sets with digital receivers that can receive both cable and broadcast signals must be made available at an affordable cost to the everyday consumer. In addition, significant digital broadcast programming does not exist on the many digital channels that broadcasters want us to carry. Finally, the transition to digital broadcast television cannot be achieved until digital equipment is available at an affordable price.

Second, the substantial cost of paying for a forced transition to digital in smaller markets will impede the development and deployment of other equally important communication services like high-speed Internet. These advanced services and their required system upgrades are costly. For example, my company is buying cable sys-

tems in rural Missouri and Tennessee where it will cost nearly $15 million simply to upgrade and launch digital cable and high-speed Internet that will close the Digital Divide. Imagine repeating those costs in thousands of very small rural communities in each of your states.

Third, in order to minimize the economic impact on consumers, digital broadcast television must be built on the current backbone of cable systems that exist today. Carriage of DTV signals will require each small cable system to completely replace its antennas and signal processors. This will cost tens of thousands of dollars. Compared to large systems with many more customers, these costs are so burdensome that hundreds of very small systems will most likely be forced to turn off their customer service. Therefore, ACA and its members strongly support the prohibition of dual must-carry obligations, as contained in Section 6 of the chairman's DTV legislative proposal.

In addition, ACA supports the chairman's desire to ensure compatibility between cable television systems and digital television receivers, as contained in his DTV proposal if achieved in a manner that is sensitive to the needs and concerns of smaller markets in rural areas.

Fourth, the abusive conduct of a handful of media conglomerates is threatening the ability of cable systems, particularly in smaller markets, to support the DTV transition. While customers and local franchise authorities don't see it, their choices on what they watch are controlled by five programming cartels. For example, ESPN has raised its rates to our members by up to 20 percent each year for the past 5 years. Obviously, some of our customers want ESPN, but ABC/Disney will not let us just buy ESPN. Oftentimes, in order to get the local ABC affiliate, Disney will force us through a retransmission consent to take other channels we know our customers don't want. These programming cartels also embed into their contracts various non-disclosure terms. These provisions prohibit cable operators from telling any customer, even the local franchising authority or your committee, what terms or rates are for their programming. The irony here is that at a time when Congress wants our small cable businesses to provide our customers with more choice and greater value, media conglomerates are taking away choice and raising costs.

Thus this committee should act in two specific areas. First, it should ensure that programming cartels cannot force consumers to take bundled services or to require that these services be carried on the lowest levels of service. Moreover, Congress should prohibit any retransmission consent provision from a cartel programmer or broadcaster that requires carriage of any new programming service outside a local broadcast network's market.

Second, Congress should require programmers to annually notify local franchise authorities and the FCC the true programming rates they charge to cable businesses and consumers.

In conclusion, if you want to make sure that the transition to digital broadcast television happens, then make sure it happens in the smaller markets and rural areas we serve and it will happen everywhere. Thank you.

[The prepared statement of James M. Gleason follows:]

PREPARED STATEMENT OF JAMES M. GLEASON, CHAIRMAN, AMERICAN CABLE ASSOCIATION

I. INTRODUCTION

Thank you, Mr. Chairman.

My name is Jim Gleason, and I am the president and chief executive officer of CableDirect, an independent cable business currently serving 40,010 customers in more than 250 rural communities in nine states—Alabama, Colorado, Illinois, Indiana, Iowa, Mississippi, Missouri, Oklahoma and Texas.

I also serve as the chairman of the American Cable Association, which represents nearly 1,010 independent cable businesses serving almost 8 million customers primarily in smaller markets and rural areas across the United States. In fact, our American Cable Association members serve customers in every state and U.S. territory and also in nearly every congressional district represented by the members of this committee.

Unlike big companies you hear about, ACA members are not affiliated with programming suppliers, television networks, big cable, broadcast, satellite and telephone companies, major ISPs or other media conglomerates. We focus on smaller market cable and communications services, often in markets that the bigger companies choose not to serve. Because we live and work in these rural communities, we know how important it is to have advanced telecommunications services available to these communities.

Like other ACA members, my company, CableDirect, specializes in serving customers in smaller markets and more rural areas. Our company today is on the forefront of providing advanced telecommunications services to customers in these markets. In fact, ACA members are now providing digital cable service and high-speed cable modem Internet services to many of our communities, and this continues to grow.

We also look forward to providing newer, advanced services to our customers in rural America too. Advanced services like digital broadcast television, which we're here to talk about today, and other services such as video-on-demand and cable telephony.

As you know, most of today's headlines in the communications world are about the large companies—the EchoStar-DirecTV merger and the media giants created by the mergers of the 1990s. Being on this panel makes me feel like a David among many Goliaths, because the American Cable Association represents no Goliaths. We're here to speak for the millions of small-town customers and thousands of small-town businesses that are represented by nearly every member of this committee.

II. THE TRANSITION TO DIGITAL TELEVISION

We're here today to share our collective views on the transition to digital broadcast television. But what we're really talking about is how, together, we can improve the viewers'—our customers' and your constituents'—experience.

As independent cable businesses in smaller markets, we want to be on the leading edge of this technology just like any other business. To that end:

- Many of our members are currently negotiating marketplace solutions with smaller market broadcasters for carriage of HDTV signals;
- ACA and its members continue to work with the National Association of Broadcasters, the DTV Standards Committee of the Society of Cable Television Engineers and other industry, technical and vendor representatives to find efficient and workable solutions for the DTV transition in smaller markets and rural areas; and,
- ACA supports legislation that speeds the transition, so long as that legislation accommodates the different circumstances and cost structures in smaller markets.

As smaller market cable systems, we know firsthand that the transition to digital broadcast television will not take place in the same way in markets all across the country. It will occur in a much different way in places like Shenandoah, Pa., Machias, Maine, or Belhaven, N.C., where smaller market customers and ACA members' small businesses are from, compared to how it will occur here in Washington, D.C., New York, or other major markets.

This distinction is critical, and it is relevant to the issues this committee must consider as it develops national policy to implement digital broadcast television. A forced transition without regard to the impact on smaller markets and rural areas threatens to disenfranchise thousands, if not millions, of television viewers today.

It's important to note here at the outset that my company and the members of the American Cable Association are rapidly deploying digital cable. It is a service

our customers want, and it is a service we like. As of last December more than half of our nearly 1,010 members have launched digital service, and the remaining half had plans to do so within the next 12-to-18 months. By now, the launch to digital is almost universal.

We like the technology, because it is an efficient use of bandwidth. It allows us to provide a better service to our customers, and it helps us to offer a more competitive service in our marketplace.

Our hope is that the transition to digital broadcast television can be just as smooth and positive. My testimony here today is designed to highlight for you the challenges that remain and to show you how we believe these challenges can be overcome. We are committed to working with you and the other affected industries to ensure that the viewer experience is enhanced and improved in all areas—even smaller markets and rural areas—without the loss of a single viewer. In addition, we are committed to doing so in a way that is as seamless as possible and as economically efficient as well.

Let's review then the challenges that must be overcome in smaller markets and rural areas to ensure a smooth transition to digital broadcast television.

There are four challenges:

1. Important technical and market issues must be resolved to accomplish the transition to digital broadcast television.
2. The substantial costs of paying for a forced transition to digital in smaller markets will impede deployment of other equally important communications services, like high-speed Internet.
3. In order to minimize the economic impact on consumers, digital broadcast television must be built on the current backbone of cable systems that exist today. As a result, the DTV transition in smaller markets must address equipment costs and channel capacity for smaller cable systems.
4. The abusive conduct of a handful of media conglomerates is threatening the ability of cable systems, particularly in smaller markets, to support the DTV transition. Congress must act to address the worsening structural programming problems that now affect digital and analog programming at large.

III. KEY ISSUES

1. Important technical and market issues must be resolved to accomplish the transition to digital broadcast television.

As we see the situation in the smaller markets we serve, the marketplace is unprepared to know what it wants. Why? Because it is the lack of resolution on the technical underpinnings of the digital television market that has denied consumers even a glimpse of what benefits lay ahead. Without any concept of how their experience might be better in a digital world, consumers lack any reason to engage in this matter. That indifference then deflates industries' interest in the subject, and the entire thing grinds to a halt.

The key facts about the transition to digital broadcast carriage are these:

Uniform standards among broadcasters, cable providers and consumer electronics manufacturers must be developed for the carriage of digital broadcast signals. Without such uniformity, there will be no easy transition, and consumers will be unaware of the opportunities that have passed them by.

Assuming such standards can be developed, television sets with digital receivers capable of receiving cable and broadcast digital signals must be made available at an affordable cost to the everyday consumer. Right now, that is not the case.

Today, the current DTV adoption rate is about at 2.5%. In order to reach the status of a mature and universal service, we will need to see that increase to about 85% penetration. To put this in perspective, consider that it took the market 22 years to achieve 85% penetration of color television sets and 15 years for 85% penetration of video cassette recorders. I doubt many of you are willing to wait that long.

Finally, significant digital broadcast programming does not exist on the many digital channels that broadcasters want us to carry.

In our smaller markets, the transition to digital broadcast carriage cannot be accomplished until there is a widespread demand for a product that customers want at an affordable price and with technology that is readily available. None of these conditions are present today.

Furthermore, neither my company nor my fellow members in the American Cable Association can achieve the transition to digital broadcast television until digital head-end equipment, digital boxes and digital television sets are widely available at an affordable price and until the bandwidth concerns of cable systems are met.

2. The substantial costs of paying for a forced transition to digital in smaller markets will impede deployment of other equally important communications services, like high-speed Internet.

Right now smaller, independent cable businesses all across the country are locked in a competitive race to improve our systems through the use and deployment of digital cable services and high-speed Internet. These services are a reality today. They are available now. They are helping us improve our systems and provide advanced higher quality telecommunications services to our customers today, and these services are the cornerstone to our economic survival.

My company is using these services to close the so-called "Digital Divide" in smaller markets now. But these services and the required system upgrades are costly. For example, it costs hundreds of thousands of dollars to install a digital cable head-end that will enable our customers to receive digital services. I can tell you that this is a lot of money if you only have 500 or fewer customers on a cable system, as many of our ACA members do.

In addition to the digital head-end, expensive digital set-tops must be purchased for each home, and significant technical work must be completed to take a 35-channel analog cable system to 70 or more digital channels.

But not all customers take these digital cable services right off, and the return on investment for a digital head-end like this one is lengthy. As a result, you can see how difficult it is to economically spread that cost across a system that may only serve 500 customers as is typical of ACA's members.

Similarly, there is a substantial per home cost to our ACA members to make available an advanced high-speed cable modem Internet service. It's expensive, and the return is a long one.

However, these services are available now because we believe they are essential to our future and satisfy the demands of our customers. To be sure, they are not on the drawing board or potentially available sometime in the future. My company is doing right now what policymakers want and the marketplace demands —improving our service, enhancing competition in the marketplace, and closing the "Digital Divide" by providing advanced telecommunications services. Moreover, if we do not do this, our competitors in the satellite business and elsewhere will gladly take each of my customers.

The fact remains that even at the best run systems the significant funds that it takes to launch digital cable or high-speed Internet could not be spread to also cover the costs of digital broadcast carriage. But we are being asked to support the transition to DTV, and we want to. However, unless equipment costs come down or there are other accommodations made in smaller markets, something will have to give. Internet? Digital cable? DTV? Who makes the choice? Broadcasters? Cable operators? Congress? The FCC? Consumers?

The transition to digital broadcast television must be balanced to ensure that all consumers—particularly in those areas where our members are, across the so-called "Digital Divide"—have available to them other advanced services, especially broadband Internet access.

In smaller markets, Congress and the FCC must recognize that the DTV transition could result in the unintended consequence of impeding deployment of other advanced services. In our marketplaces, this truly would be an unacceptable consequence.

3. In order to minimize the economic impact on consumers, digital broadcast television must be built on the current backbone of cable systems that exist today. As a result, the DTV transition in smaller markets must address equipment costs and channel capacity for smaller cable systems.

As I have discussed, without measures tailored for smaller markets, a forced transition to DTV would have significant negative consequences on our smaller cable businesses.

Carriage of DTV signals will require each small system to completely replace its antennas and signal processors. At current equipment costs for a typical small cable system, this will cost tens of thousands of dollars. Systems serving less than 1,010 customers will have a far more difficult time supporting this investment than would a large cable company where the same equipment at the same cost might serve 100,010 customers or more.

Similarly, cable set-top boxes will need to be replaced or retrofitted to allow customers to view DTV signals without a DTV-compatible set. This will add substantial additional cost to the transition.

We believe these costs will ultimately come down, but not before the DTV transition is required. Companies like Motorola, Scientific-Atlanta and others have a strong incentive to develop lower cost solutions for cable-carriage of DTV signals.

But small cable systems in smaller markets will be forced to make the transition before those equipment costs come down, threatening our ability to deploy other advanced services.

There is no glut of channel capacity on cable systems, particularly our members' smaller market cable systems. On average, our ACA members' smaller market systems have substantially less channel capacity than their major-market counterparts. As a result, a forced DTV transition would cause the loss of important existing analog and digital programming and high-speed Internet services. It would create a significant chilling effect on the development and deployment of new advanced telecommunications services to these markets.

These new services have been essential to attracting the capital necessary to upgrade our smaller market systems in response to marketplace demand.

Forcing digital broadcast on smaller market cable systems would also force other existing important services off our systems in order to accommodate digital broadcast signals, which few of our customers could watch now anyway.

We as smaller market cable systems have to pay for our additional bandwidth through costly system upgrades. We can only pay for these upgrades by carrying services our customers want and choose to pay for.

In our smaller market cable systems, we are either spending capital now to update to digital cable and high-speed Internet or seeking the capital to do it, because of the demand for the product and the revenue that can be derived from it.

But if the DTV transition is forced in smaller markets before our customers want it and choose to pay for it, it will cause smaller cable systems in smaller markets and rural areas to shut down. When this happens, our customers will be left a long distance away from broadcasters. These broadcasters may not be able to get good television signals at all to smaller market viewers leaving them, quite literally, in the dark.

Great challenges exist to accomplish the transition to digital broadcast television in smaller markets and rural areas. But we pledge to work together to help remove the barriers to DTV, one of which has already been lifted.

ACA and its members strongly support the prohibition of dual must-carry obligations as contained in Section 6 of the Chairman's draft DTV legislative proposal.

In addition, ACA supports the Chairman's efforts to ensure compatibility between cable television systems and digital television receivers as contained in Section 8 of the DTV proposal. Given the unique and challenging circumstances of smaller market cable systems, we look forward to working with the Committee to ensure that such compatibility and interoperability takes place in a reasonable manner that is sensitive to the needs and concerns of smaller markets and rural areas.

Within the constraints of small company resources and system capacity, our ACA members are eager to support the DTV transition. Equipment cost remains a critical constraint. Because of limited channel capacity of many small systems, forced transition to digital broadcast television would impose substantial burdens and could result in the loss of other important services. For those reasons:

- Many of our members are currently negotiating marketplace solutions with smaller market broadcasters for carriage of HDTV signals;
- ACA and its members continue to work with the National Association of Broadcasters, the DTV Standards Committee of the Society of Cable Television Engineers and other industry, technical and vendor representatives to find efficient and workable solutions for the DTV transition in smaller markets and rural areas; and,
- ACA supports legislation that speeds the transition, so long as that legislation accommodates the different circumstances and cost structures in smaller markets.

4. The abusive conduct of a handful of media conglomerates is threatening the ability of cable systems, particularly in smaller markets, to support the DTV transition. Congress must act to address the worsening structural programming problems that now affect digital and analog programming at large.

From our standpoint, this hearing also provides an important and appropriate opportunity to highlight how little customer choice exists today in the multichannel video services market, especially in rural America. The fact is that the status of competition and customer choice today, especially in rural areas and small towns, is already significantly diminished because it is governed by an unlikely cast of players that does not live in rural America, nor does it focus on rural Americans' needs.

This unlikely cast includes several major media conglomerates that are mandating the cost and content of most of the services we provide in smaller markets. For smaller markets cable systems, this is a fundamental problem that directly impacts our ability to support the DTV transition. These major media conglomerates,

which we call programming cartels, have found through media consolidation the means to use market power to extract ever-increasing earnings from all Americans.

Unless there is significant congressional and regulatory action to address these issues, the situation is not likely to improve. Consumer choice and competition, not to mention the transition to digital broadcast television, may be wiped out in the wake of the mighty merged communications giants.

A vitally important question here: Who controls what your constituents see on their TV sets? Not a small cable business like mine or any one of our ACA members. While customers and local franchise authorities don't see it, their choices on what they watch are controlled by five programming cartels—Disney/ABC, CBS/Viacom, Fox/News Corp., General Electric/NBC, and Time Warner/AOL.

Over the past five years we have seen an explosive consolidation in the programming industry that has led to sharply increased prices, less freedom to offer popular content, and little customer awareness as to why they are forced to buy the channels they do.

For example, ESPN has raised its rates to our members by up to 20% each year for the past five years. Obviously, some of our customers want ESPN. But ABC-Disney will not let us just buy ESPN. Oftentimes, in order to get the local ABC affiliate, Disney will force us through retransmission consent to take other channels we know our customers don't want relative to other programming options.

This abuse of retransmission consent goes so far as to subject operators with multiple systems in multiple states to be forced into carriage of many such undesired programs on systems not even within the market involved. Adding to the absurdity of the situation, these conditions for carriage often outlive the terms of the retransmission consent agreements by many years, thus leaving cable systems with bad, artery-clogging programming long after the desired programming has disappeared. To be clear, this situation is being repeated by Fox/News Corp., GE-NBC and CBS-Viacom.

And the reality is that once such a programming cartel forces a new cable program onto the television dial, it's virtually impossible to take it off, leaving the public with a service they never wanted or asked to receive.

This might not be so bad if we could offer the cartels' programming on a tiered or a la carte basis to allow the consumer to choose to pay for these services or not. But all of the cartel programming companies force their tied and bundled programming onto the lowest, basic levels of service, making independent cable pay for every customer and pay punitive prices if we do not carry many of their services in a bundle, just like they dictate. The consumer also is forced to pay for services in this bundle they neither asked for nor wanted.

Consolidation has turned retransmission consent into extortion. These same programming cartels go so far as to dictate channel locations and other terms. Even more appalling is that fact that these programming cartels also embed into their contracts various "non-disclosure" terms. These provisions prohibit cable operators from telling any customer, even the local franchise authority or your Committee, what the terms or rates are for their programming. Thus, rate increases and unfair bundling practices are kept hidden from the public and even from Congress. That is not the definition of an open, functional and fully competitive marketplace, or one that is constructed to best serve customers.

I am sure you all watched the retransmission consent showdown between Time Warner and Disney over this very issue. Imagine the odds that a small system like mine has when negotiating with the programming cartels.

The four or five major programming cartels control the broadcast networks and at least 50 other of the most popular stations. More than 90% of cable systems offer 30 to 90 channels, which, as you can see, are dominated by the programming cartels.

In order to assist your review of this situation, I have attached several charts that depict the realities a small ACA member faces with regard to programming and channel capacity, and I hope you will take a moment to look them over at your convenience.

The irony here is that at a time when Congress wants our small cable businesses to provide our customers with *more* choice and *greater* value, media conglomerates like Disney/ABC, Fox/News Corp. and others are *taking away* choice and *raising* costs.

As a result of the hammerlock of control the programming cartels have on what consumers see on TV, it naturally affects what gets on TV, how much consumers pay for it, and when it gets on TV.

This is especially true for rural communities and smaller markets served by the members of the American Cable Association.

If the transition to digital broadcast television is to occur more smoothly, then more control must be put back into the hands of consumers who watch television and the businesses that serve them.

The members of the American Cable Association and independent cable's buying group, the National Cable Television Cooperative, have for years sought meaningful dialogue with the programming cartels on the issues faced by independent cable and how the programming cartels are harming these businesses and smaller market consumers. To no avail.

More than a decade of debate and discussion on these issues has led to no meaningful change in any of the behavior of the programming cartels or how they treat smaller market consumers and cable businesses.

The hammerlock of control gained by ever-increasing and consolidating programming cartels threatens to undermine the very businesses our members have fought so hard to maintain in smaller markets and rural areas. As a result, with this situation as bad as it is and getting worse, we have no alternative but to seek action from Congress to break the hammerlock of the programming cartels.

To break the hammerlock of control by the programming cartels and to give consumers and independent cable businesses more choice and control, and to increase resources available for the DTV transition, Congress should act in three specific areas: *ensure the unbundling of services, require the disclosure of programming terms and conditions, and apply federal anti-trust laws to programming practices.*

Unbundling: Today the programming cartels tie and bundle their services in such a way that to get one service, you must take, and pay for, many. Or, to get your local broadcast network stations, you must take, and pay for, other programming services sold by the programming cartel.

If the transition to digital broadcast television is going to occur, then consumers and the providers who serve them must have greater control to the larger pipe.

This means Congress should act to ensure that the programming cartels cannot force consumers and cable businesses to take bundled services or to require that these services be carried on the lowest levels of service.

If the programming cartels had exercised any self-discipline to stop this conduct, we wouldn't be here today asking Congress to act. But the abuse goes on.

Congress should amend telecommunications laws to provide that no programming provider can require that its services be carried on either the basic or expanded basic level of service. Rather, to give consumers choice and to allow the market to determine what gets on TV, programmers should be required to sell their services as part of a separate programming service tier, or even a la carte.

Moreover, *Congress should prohibit any retransmission consent provision from a cartel programmer/broadcaster that requires carriage of any new programming service outside of a local broadcast network's market.* This action will prevent frequent scenarios where consumers all over the country are required to take an unlikely new programming service in return for retransmission consent in one television market.

Disclosure: What consumer, local franchising authority or congressional office knows what it costs to watch TV? The answer is *not one.* That's because the programming cartels have dominated the marketplace with their massive content streams of programming. The cartels have put consumers and cable businesses over a barrel by tying services and raising programming prices without any regard to the consumer or the local companies that serve them.

Who gets the blame? Not the programming cartels. Conveniently enough for the programming cartels, each time they raise their programming rates they insulate themselves from criticism by requiring the cable business through strict confidentiality provisions to be silent about the rates or terms charged or required by the programmer.

Programming prices continue to rise far in excess of the rate of inflation. One way to rein in this out-of-control programming cartel behavior is to require programmers to annually tell local franchise authorities and the Federal Communications Commission what they charge cable businesses and consumers to watch television.

Consumers can go on the Internet to learn how much it will cost them to buy a new car, but they can't find out how much it costs to watch ESPN or how much a programming service has increased from one year to the next.

To restore control to the marketplace, *Congress should act to require programmers to annually notify local franchise authorities and the FCC the true programming rates they charge to cable businesses and consumers and to also notify these entities whenever they raise rates.*

Moreover, *Congress should direct the FCC to compile every year a comprehensive Programming Price Index to show Congress and consumers how much they are truly being charged to watch television. Every three years the FCC should also compile and*

publish a Retransmission Consent Index to show consumers what it truly costs them to receive their local network television stations, which—ironically—were supposed to be free!

Until there is transparency in the programming marketplace, consumers and their local providers of service will have little control over what is seen on TV, when it is seen on TV, or how much it will cost.

Anti-Trust: The actions of the programming cartels to tie and bundle and to coerce the price of their services implicate core anti-trust principals. Current federal anti-trust laws are designed to prohibit contracts and combinations in restraint of trade, and to prohibit price discrimination where it has an anti-competitive effect.

If it were any other business, the tying, bundling and price fixing that goes on year after year in the programming business would have been squashed on anti-trust grounds by either Congress or the Department of Justice.

Why then are the programming cartels allowed unfettered ability to perpetrate the same actions on consumers without consequence? There is no good reason.

As a result, *Congress should carefully and comprehensively scrutinize the conduct and behavior of the programming cartels to examine their conduct toward providers and consumers and to apply federal anti-trust to cartel behavior.*

Just because we can't touch a programming service on TV doesn't mean that it's not bought or sold like any other good or commodity consumers purchase. It is a "good" for anti-trust purposes that is tied and bundled just like oil was in the past.

IV. CONCLUSION

Each one of the foregoing issues directly affects the ability of independent cable companies and also consumers to have any control over what they see on television, how much it costs and when it gets on TV—including digital broadcast television.

The transition to digital broadcast television is more than just a series of technical issues. It also involves a series of marketplace reforms that must take place before consumers and their local providers—like my company and the members of the American Cable Association—can accomplish the transition to digital broadcast television.

Without these marketplace reforms, it is not too strong to say that the future of advanced services in smaller markets and rural areas hangs in the balance.

My company and the members of the American Cable Association are here today amidst the giants of the television, cable and telecommunications world. Why should anyone here listen to what we have to say?

Because we are 1,010 small businesses serving 8 million consumers in smaller markets and rural areas in every state and in nearly all congressional districts—virtually all of the districts covered by this committee. Our companies and our consumers in these smaller markets and rural areas are where the rubber meets the road in solving these telecommunications issues. If you want to make sure that the transition to digital broadcast television happens, then make sure it happens in the smaller markets and rural areas we serve, and it will happen everywhere.

We know what our customers want to watch on television and how much they'll pay for it. We are the vital link in the chain that will determine whether the digital broadcast television transition occurs in smaller markets and rural areas or whether it won't.

The irony here is that the impact of these issues, if not addressed by Congress, will do exactly the opposite of what Congress wants us to do—provide advanced new services, competition and choice for consumers in the smaller and rural marketplaces.

The American Cable Association and its members are committed to working with the Committee to solve these important issues.

I would like to sincerely thank the Committee again for allowing me to speak before you today.

Must Have TV

Who Controls Your TV Set?

Did you know that more often than not, if you want one of these channels you **MUST** take the whole package?

CBS/VIACOM/UPN (13):

*BET *BETJazz
*TVLand *CMT
*TNN *TMC
*Comedy *Flix
*VH1 *MTV
*MTV2 *Showtime
*Nickelodeon

AOL/Time Warner/WB (12):

*Cartoon *CourtTV
*Cinemax *HBO
*CNN *Headline News
*CNNfn *TBS
*CNNSI *Turner Classics
*Comedy *TNT

GE/NBC (10):

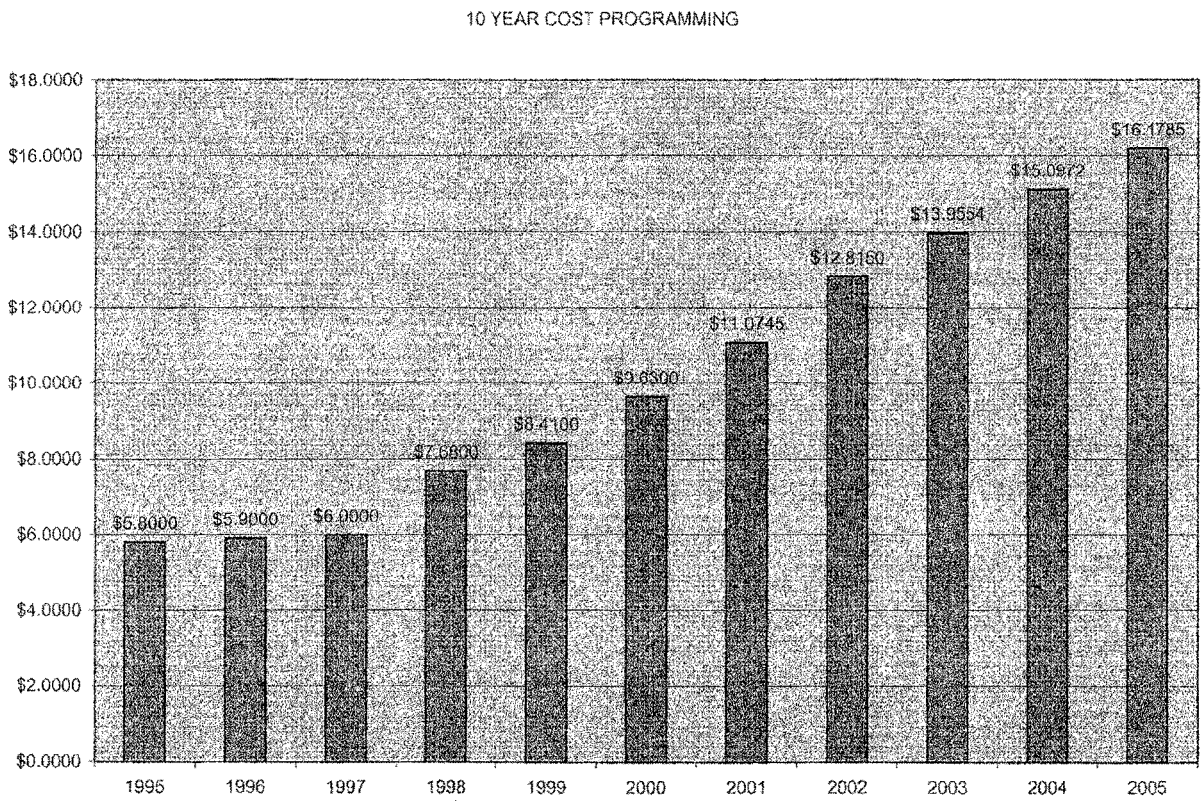
*AMC *A&E
*Bravo *FAXTV
*CNBC *Telemundo
*History *MSNBC
*WE
*Independent Film Channel

NEWS CORP/FOX (8):

*Fx *FoxSportsNet
*FxM *Outdoor Life
*FoxNews *HealthNet
*Golf *SpeedVsn

Disney/ABC (10):

*Lifetime *Disney Channel
*ABC Family *History Channel
*ESPN *ESPN2
*ESPN News *ESPN Classic
*Toon *SoapNet


10 YEAR COST PROGRAMMING
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Mr. BASS. Thank you very much, Mr. Gleason.

The Chair now recognizes Mr. McCollough.

STATEMENT OF W. ALAN McCOLLOUGH

Mr. MCCOLLOUGH. Thank you, Mr. Chairman. On behalf of the Consumer Electronics Retail Coalition, I appreciate the invitation to appear today. Every member of CERC supports this committee's efforts to move the digital transition forward in a way that actually serves customers. Although as a retail group we have no vested interest in any particular technology, we clearly have an interest in promoting, displaying and demonstrating products and services that take advantage of the latest developments in technology. We operate in a highly competitive industry, and we understand our success is tied directly to our ability to give customers what they want. I believe the transition to digital television shares the same challenge.

The transition can only succeed if we honestly give the customers what they want and not try to force them to take what others want them to have. CERC members speak daily to thousands of customers. I believe retailers have a pretty good idea about what customers want and what drives adoption in new technologies and services.

Mr. BASS. Excuse me, sir, can you pull the microphone closer to you? Apparently——

Mr. MCCOLLOUGH. Yes.

Mr. BASS. Thank you. Please continue.

Mr. MCCOLLOUGH. Just to repeat, I think retailers have a pretty good idea as to what customers want and what drives adoption of new technologies and services. Four things stick out: content, value, simplicity, flexibility. In terms of content, while much of this hearing is devoted to devices and technical specifications, we need to keep in mind that the customer is excited about access to high-quality content. We absolutely respect the right of content owners to protect that content and believe the draft proposal regarding the use of flags to be directionally correct, although it will require some further work, we believe, by the FCC. We also support the proposal that would require local affiliates to pass through content at the same resolution as distributed to them and believe this same requirement must be extended to cable operators as well.

In terms of value, we began with the premise that it is simply un-American to pay too much. Customers also expect consumer electronics products to work predictability and reliably, and in the case of television sets, for a very long time. They understand that improved products will come to market, but they expect that their products will maintain the capabilities they had at the time they were purchased. If the product words today, it had better work the same way tomorrow. Understanding this, we believe it would be impractical to completely eliminate the use of analog outputs from products necessary to support existing display devices.

In terms of simplicity, customers don't like anything requiring multiple operations if it can be done in one. They want a single remote control and where possible a single box. For many, the ultimate in simplicity only comes when a digital cable tuner is included in the TV set so as to require no box at all. We applaud the

staff draft for establishing this as a clear priority. In light of the FCC's recent dual tuner order, we also think it makes great economic sense as well as being greatly appreciated by our customers.

Flexibility, we clearly don't live in a one-size-fits-all world. The expectations of your 13-inch TV set in the kitchen are vastly different from the 55-inch set that may be in your den. Therefore, it should be up to the television manufacturers to understand their customers' needs, be able to choose a mix of features to offer in a DTV receiver. Again, we think the staff has the right idea in telling the FCC to assure that technical straightjackets are not imposed on product design by provisions and license agreement that serve the business needs of others.

Whether the customer expects high-quality content, great value, simple operation, ultimate in flexibility, we know that those expectations are always best met by vigorous competition. We are concerned, therefore, about the proposal in the draft that would remove the obligation that cable operators be required to follow the same rules that they established for others. It would seem that any system that allows the home team to set the rules for the visitors and then not follow those rules themselves would be fundamentally flawed. Would you really expect true and fair competition to be the result of that, and do you really expect that the score at the end of the game would ever be in doubt?

We appreciate that the staff has gone to great lengths in the proposed legislation to establish different but equal circumstances under which the various entrants may compete. This is a noble effort but ultimately an impossible effort. Impossible to cover every circumstance, every obstacle, every roadblock to legitimate competition that may come up along the way. The only sure way to ensure a level playing field is to have one set of rules for all participants.

You may hear many arguments as to why cable operators shouldn't be required to rely exclusively on the same rules they developed for others, whether cost or technical complexity or feature limitations, all such arguments have to be viewed for precisely what they are: A decision to avoid competition. All you have to do is ask, if it is too expensive, too difficult, too limiting for the cable operator, why isn't the same true for other competitive entrants?

If you do nothing else in the proposed legislation when providing guidance to the FCC, we would ask that you please decide in favor of competition and please insist that the folks who have the opportunity to make the rules also have to live by the rules.

[The prepared statement of W. Alan McCollough follows:]

PREPARED STATEMENT OF ALAN MCCOLLOUGH, CHAIRMAN, PRESIDENT & CEO, CIRCUIT CITY STORES, INC. FOR THE CONSUMER ELECTRONICS RETAILERS COALITION

Chairman Upton and Members of the Subcommittee: On behalf of my colleagues in the Consumer Electronics Retailers Coalition ("CERC"), I very much appreciate your invitation to appear today. Although as retailers, we have no vested interest in any particular technology, we clearly have an interest in promoting, displaying, and demonstrating products and services that take advantage of the latest developments in technology. We operate in a highly competitive industry. We understand that our success is tied directly to our ability to give our customers what they want, and that demonstrating the benefits that advances in technology convey to our customers is a critical component of our offer. I believe the transition to digital television shares the same challenge. *The transition can only succeed if we honestly give the consumers what they want, and not try to force them to take what is in the interest of any particular group.*

CERC includes general and specialty retailers and retail trade associations. Our members include Best Buy, Circuit City, Good Guys, RadioShack, Sears, Tweeter, and Ultimate Electronics, plus the International Mass Retail Association, the North American Retail Dealers Association, and the National Retail Federation. Among us, we speak directly with many of your constituents every week.

I believe we have a pretty good idea as to what consumers want and expect out of consumer electronics products in general, and television in particular:

- **Content.** Close to ninety percent of our customers are cable or satellite subscribers, which means they pay to acquire movies, sports, and special programming, as well as news and the prime time lineup. *While much of this hearing will be devoted to devices and technical specifications, we need to keep in mind that what the customer is excited about is access to high quality content.*
- **Value.** With every purchase, the consumer is making a judgment about the value received. We begin with the premise that it is simply un-American to pay too much. Customers also expect consumer electronics products to work predictably and reliably, and *our customers expect to use televisions for a very long time.* They understand that improved products come to market, but they expect that their products will maintain the capabilities they had at the time they were purchased. If the product works today, it had better work the same way tomorrow.
- **Simplicity.** Consumers don't like anything requiring multiple operations if it can be done in one. They want a single remote control and, where possible, a single box. When two mainstream products, DVD players and VCRs, were combined in a single box with a single remote control, the product became so popular last Christmas, we could not keep them on the shelves—despite the fact that you can't copy movies from the DVD drive to the VCR, and the combination product was more expensive than the two purchased separately. *When confronted by complexity the normal customer reaction is inaction.*
- **Flexibility.** We do not live in a one-size-fits-all world. Every room in the house may as well be a different household with a different consumer. *The expectations of the 13 inch TV in the kitchen are vastly different from that of the 55 inch TV in the den.* A 27 inch TV serves a different purpose when, a few years after purchase, it is moved from the den to the playroom, where it becomes a secondary viewing location in the household.

Today I am pleased to endorse this Committee's efforts to move the digital television transition forward, and, based on our frontline experience with consumers, to comment on your staff's draft of legislation that would do so. We are very glad and appreciative that this Subcommittee is holding today's hearing; that Chairman Tauzin and ranking Member Dingell of the full Committee have joined you, Mr. Chairman, in holding a series of roundtable meetings on the digital transition; and that the leadership of this Committee has asked us for our comments. We pledge our full cooperation.

WHAT CONSUMERS ARE CONCERNED ABOUT

Among your reasons for trying to complete this transition must be the opportunity to put the existing analog broadcast spectrum to other uses as soon as possible. Most consumers are not aware of this objective. *They* support the transition because by now many have seen displays of HDTV. More than three million of them own HD-capable displays, but are still driving them with standard-definition DVD discs and analog broadcast or cable signals. Millions of others have seen the price of the new digital displays come down, but they remain distracted by the questions and concerns I mentioned at the outset:

- **content**—when and how will I get HDTV over cable?
- **value**—will the HD-ready product that I buy today hold its value and, at a minimum, operate properly well into the future, or will it be abandoned in the transition?
- **simplicity**—how do I hook everything up? How many boxes and remote controls will be necessary; will they operate seamlessly together?
- **flexibility**—can I acquire the right DTV product for my need, as I am accustomed to doing, or will they all have features that I don't need in some rooms, but lack the features I want in other rooms?

Unfortunately, as this Committee is well aware, we are a long way from satisfying these consumer concerns. We know this Committee wants to move forward. So do we. So do our customers.

MOVING THE CABLE DTV TRANSITION FORWARD SHOULD BE A TOP PRIORITY

CERC applauds and endorses the emphasis in the staff legislative draft on achieving "plug and play" nationally portable cable compatibility, and accomplishing this as soon as possible. The staff clearly appreciates that it is only through legitimate and broad competition that we can give consumers the necessary incentive to move the digital transition forward. About seventy percent of our customers are cable subscribers. Yet today, no CERC member can provide them with the products that they want and need. Indeed, *no CERC member is able to offer a consumer a product of any sort that works directly, nationally, and interoperably on digital cable television systems.*

Cable television remains the last bastion of the monopoly distribution of customer premises equipment. Telephones were deregulated in the 1970's, opening the door to, among other things, the Internet. Cable is the *only* high-capacity broadband wire that enters most peoples' homes. Yet, as to receipt of video programming, the proprietary, non-portable, non-interoperable, leased set-top box sits on the landscape as a monolith, blocking out every ray of competition.[1]

THE LONG STRUGGLE FOR CABLE COMPETITION

In the late 1950s, cable industry pioneers saw that there was a potential business in supplying consumers with higher value programming, such as movies and non-broadcast channels. To be able to charge the consumer separately for this more expensive programming, they had to assure that they would be paid separately for providing it. Therefore they started *scrambling* some of their channels, and building so-called "addressable descramblers" into the converter boxes that they continue to rent to their subscribers.[2] They insisted, for security purposes, on hard-wiring the descrambling circuitry into the box, to try to avoid theft of service. Thus, their monopoly on addressable set-top boxes—known later as "conditional access" devices, or "navigation devices"—was an outgrowth of their *own vulnerability, and the failure of anyone to devise a feasible security alternative.*

Times changed, but, over the next five decades, the cable monopoly did not. Television tuners were upgraded to tune all channels. The telephone monopoly was dismantled as to services and devices. The personal computer and the Internet were invented. Competitive markets were developed as to every other consumer device that acquires or receives information, communications, or entertainment. But because, in the cable set-top box, five percent of the product controls access, the other ninety-five percent has remained immune from competition. And two suppliers control about ninety-five percent of the market.

Senator Leahy brought this situation to the attention of the Congress in 1991. The Cable Act of 1992 instructed the FCC to work on achieving competitive entry into the markets for both set-top boxes and their remote controls (which were then also monopolized by the cable industry). This was still the analog era, however, and inter-industry attempts at devising a security alternative for the set-top box did not succeed.

In 1995, as the DTV transition approached, this Committee acted clearly and decisively in crafting legislation that was ultimately included in the Telecommunications Act of 1996. Then-Chairman Bliley and Rep. Markey drafted a provision that instructs the FCC in its regulations to assure the competitive availability of "navigation devices" from manufacturers and retail vendors that are not affiliated with any Multichannel Video Programming Distributor. Recognizing that this job would entail new technical standards, the law instructed the FCC to draw on the resources of recognized standards-setting organizations.

Some in the cable industry told the FCC that they should be allowed to comply merely by locating second sources for the manufacture of existing converter boxes, and authorizing one additional channel for selling or leasing proprietary, system-specific boxes. Fortunately, the FCC realized that this approach would maintain, rather than deregulate, the monopoly on cable devices. Instead, the Commission decided that only new technical standards, separating the "conditional access" function from other cable navigation functions, would comply with Congress's intention to

[1] About fifty percent of our cable subscriber customers choose not to lease a set-top box—some because they don't need the extra services; others because they engender confusion, complexity, and expense.

[2] Originally, the purpose of converter boxes was to enhance the limited tuning ranges and features of some televisions.

foster a competitive market. CableLabs, a cable industry consortium, offered to devise all necessary standards, and the FCC accepted the offer.[3]

More than four years later, however, no CERC member or other retailer, and no manufacturer, can participate in a competitive consumer market for cable devices. Here is my formulation of a "competitive market" as to cable devices:I22*A market, open to all manufacturers and vendors, for "plug and play" devices that will operate on any cable system in the country in a way that is fully competitive with the devices distributed by the cable operators themselves.*

Judging from the letter from the Chairman and ranking Member of this committee to Chairman Powell,[4] and the staff draft of legislation, I trust this definition is shared by the leadership of this Committee.

This market can and should include HDTV receivers; multi-purpose consumer electronics products such as the combination DVD/VCR; personal computers; and, yes, set-top boxes offered by new competitors.

WHY THE STRUGGLE FOR COMPETITION IN CABLE DEVICES HAS NOT YET SUCCEEDED

The FCC published its regulations, in its CS Docket 97-80, in June of 1998. Since then, about *twenty-five million* digital cable devices have been acquired for distribution—all by cable service operators. According to cable operators themselves, these proprietary, system-specific set-top boxes have rolled out at the rate of *135,010 per week. The competitive score thus far is monopoly 25 million; competition zero.*

What has gone wrong? According to NCTA filings with the FCC, it is all retailers' fault: satisfactory products are available, but every retailer in the United States passed on acquiring them, for greedy and nefarious reasons. This explanation—that in the world's most competitive market, not a single participant, large or small, CERC member or not, has embraced a product that consumers would find useful and want to buy—strains common sense and credulity. We have dealt with it fully and repeatedly in several FCC filings.[5]

The actual reason goes far deeper, to a key element that has been missing from the cable industry's interpretation of FCC regulations. CERC believes the core problem is:

> *No cable operator has ever promised to, been required to, or been given any incentive to, rely exclusively on the same technical standards and license that they have undertaken to devise for prospective competitive entrants.*

More history: After the FCC declared that technical standards must be written so as to enable true competition, the Commission focused on the three technical obstacles that CERC members and others had identified:

(1) **Digital transmission.** The local cable systems were in danger of adopting conflicting digital transmission formats, which could have precluded national interoperability.

(2) **Embedded conditional access systems.** Cable operators insisted on distributing the conditional access circuitry themselves. Therefore, it was necessary to concentrate this circuitry on cards or modules, that could be separately furnished by each operator. *A common, national security interface would be needed to accept these locally provided modules.*

(3) **Headend support.** Cable "headends" (which control signal distribution and activate interoperable features) had been configured to support only locally procured devices. A competitive national market in interoperable devices would require that equal means of *support for competitive devices be implemented in all cable headends.*

Obstacle (1) was solved in the standards world, as the MPEG family of standards emerged into common usage. Obstacles (2) and (3), however, still loom over the landscape. Progress has been made recently, but ultimate success is still not assured.

In its *Report & Order* of June 24, 1998, the FCC set two dates by which hallmarks of support for competitive entrant products were supposed to be achieved by cable operators, or they could lose the right to distribute their own leased devices:

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[3] It is still, however, the official position of the National Cable and Telecommunications Association ("NCTA") that retail distribution of proprietary, system-specific set-top converter boxes would fulfill any and all of their obligations under the existing FCC rules. *See* NCTA *ex parte* filing of June 4, 2002. All FCC filings referred to are in CS Docket No. 97-80 and all will be available on CERC's new web site, www.ceretailers.org.

[4] Letter of July 19, 2002, from Chairman Tauzin and Rep. Dingell to Chairman Powell.

[5] *See, e.g.,* CERC *ex parte* filing of August 1, 2002, and previous CERC filings cited therein.

July 1, 2010, for cable operators to furnish security ("Point Of Deployment," or "POD") modules for competitive entrant devices, and to support the operation of the competitive devices on their systems; and

January 1, 2005, for operators to rely themselves on the national security interface in the products that they distribute. (The FCC saw, presciently, that a technology not relied upon by its developer may not be adequately supported by that developer.)

Consumer electronics manufacturers and retailers, in reconsideration petitions, told the FCC that the 2005 date was too far in the future to compel meaningful reliance by cable operators or CableLabs. We urged that this date be moved up to 2001. In its *Reconsideration Order* of May 14, 1999, the FCC declined to do so, but observed that *if competition had not bloomed by the year 2010, the Commission would hold a review, and might move the 2005 date up to 2003.*

The 1998 *Report & Order* also failed to specify the level of support that must be afforded competitive devices, either in the device specifications themselves, or at the cable headend.[6] The NCTA and CableLabs have taken the position that while consumers have a *right to attach* competitive devices to their systems, they do *not* have a right to expect reasonable, competitive, and interoperable performance of these devices. In fact, CableLabs has declared that national portability via the OCAP specification (or otherwise) is not a legal or regulatory requirement. This statement can still be found on the CableLabs "OpenCable" web page.[7]

Given the lack of either mandated technical specifications or any requirement that cable operators rely themselves on whatever they develop for use by competitive entrants, what happened seems, in retrospect, all too predictable:

- Technical specifications to support even rudimentary cable products, not nationally portable as to key features (and hence not competitive with existing, operator-provided set-top boxes), were developed far too late for competitive manufacturers to develop any product whatsoever by July 1, 2010
- Technical specifications that *would* support nationally competitive products have not neared completion until recently. Still, however, there has not been a single pledge from a cable operator to rely exclusively on these specifications in its *own* products. Nor has there been any date certain promised as to when entrant products would be supported, adequately or otherwise, by any cable system headend.
- Attempts by entrant manufacturers to develop interim specifications for DTV and HDTV receivers that work on cable—even in ways not fully competitive with existing set-top boxes—have bogged down in disputes over product standards, testing, certification, and licensing. *In our view, most of these disputes could have been avoided had cable operators pledged, or been required to, rely on the same specifications and license provisions that they provide to the entrant manufacturers.*
- The 1996 Telecommunications Act has been interpreted as allowing a subsidy to the deployment of digital cable devices, based on revenues from the rental of existing analog set-top boxes. A subscriber that chooses a competitive device in preference to a leased, proprietary one would lose the benefit of this subsidy. *Not a single MSO has offered to extend this benefit to their own subscribers who choose competitive devices.*[8]

In summary, six and one half years after Congress acted, there has yet to be a single POD-reliant product introduced into the marketplace, either by any CERC member or by any of the retailers that are not CERC members.

WHAT CERC HAS PROPOSED TO THE FCC

In September, 2010, the FCC opened its "Year 2010 Review" as to what else the Commission needs to do. Even before the commencement of this review, CERC proposed to the Commission a direct and simple approach that would rely on marketplace incentives, rather than on intense regulation, to accomplish Congress's objectives. CERC proposed, and continues to advocate, a single, simple addition to the Commission rules:

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[6] The *Report & Order* stressed the importance of nationally portable operation of devices if a truly competitive market, that embraced products such as HDTV receivers, was to be supported. But it also said that it was not, at that time, prescribing any specific requirements for achieving national portability.

[7] *See* www.opencable.com/ocap.html and NCTA *ex parte* filing of June 4, 2002.

[8] In fact, NCTA has cited the fact that CERC has raised this issue, on behalf of NCTA's own members' cable subscribers, as "proof" the retailers are not interested in a competitive market unless they can capture this subsidy themselves! *See, e.g.,* NCTA *ex parte* filing of June 4, 2002.

76.1204(a)(1)... **Commencing on [July 1, 2003], any multichannel video programming distributor subject to this section, or affiliate thereof, shall place in service for sale, lease, or use only such new navigation devices as rely, for their operation, solely on whatever OpenCable specifications and licensing terms, to implement services, features, applications, and conditional access support, as are required by the distributor with respect to the licensing, manufacture, certification, attachment or use of navigation devices provided by unaffiliated manufacturers or vendors pursuant to Section 76.1201.**[9]

LESSONS FROM OUR EFFORTS THUS FAR

While consumer electronics manufacturers and retailers have filed paper after paper with the FCC, we have seen approximately $10 billion in commerce evade the competition that Congress ordered in 1996. In this period I think we have all learned that support for competitive devices is as much a matter of *economics, self-interest, and incentives,* as it is one of regulation:

- If a developer of a technical specification does not contemplate distributing reliant products himself, the quality, reliability and efficiency of products made to that specification will be assigned a lower priority by the developer.
- If the standard or product in question is competitive with the developer's own product, these attributes will be assigned a still lower priority.
- A system operator will care primarily about supporting the products he distributes himself, rather than those of competitive entrants, unless given an incentive to the contrary.

These three factors explain a lot:

- Why, after ten years, not a single cable headend is equipped to support the standards developed for competitive entrants.
- Why not a single cable operator has made an unconditional pledge to support these standards.[10]
- Why detailed and prescriptive regulations—trying to force cable operators to support technologies they don't intend to rely on themselves—invite further frustration and controversy.

CRUCIAL ITEMS THAT STILL MUST BE ADDRESSED: THE "OPENCABLE ACCESS PLATFORM" ("OCAP"), THE "POD-HOST INTERFACE LICENSE AGREEMENT" ("PHILA"), POD RELIANCE AND COST

Despite all these delays and problems, we are at the point where several key technologies have, in fact, become industry standards. The "OCAP" technical specification—the best hope for products that are nationally portable yet fully competitive with devices designed for individual systems—may also finally be nearing completion. In our view, on behalf of our willing but anxious customers, there are three crucial issues yet to be resolved, on which we urge this Committee to focus its legislative and oversight attention:

Headend Support. You can have the most sophisticated consumer devices, and the most sophisticated cable headends, but if they are not designed to interoperate, the consumer is the loser. At present, cable headends are designed to support 25 million proprietary, system-specific set-top boxes, rather than competitive products. *Some* cable operators are recognizing that migrating to a common "middleware" platform, such as "OCAP," may be in their own long-term interests, as well as that of their subscribers. But unless *all* cable headends make this migration by a date certain, this Committee's efforts to support products that are both competitive and nationally portable will continue to fail.

In my view, it will be in manufacturers' interest to offer OCAP functionality when (1) OCAP will work reliably in consumer products when supported at the cable headend, and (2) OCAP is in fact supported by all cable headends. These objectives—technical reliability and operator support—will be accomplished *only* when

[9] CERC members first made this proposal in an *ex parte* letter of April 16, 2001, with a proposed compliance date of January 1, 2002. CERC now proposes a compliance date of July 1, 2003. CERC also proposes a regulation as to subsidy practices. CERC's full proposal is reproduced as an Appendix to this statement.

[10] In cases of both the "POD" module and the "OCAP" standard, statements by some cable MSOs have pledged support when reliant products are on the market. This proved a "Catch-22" as to PODs, because entrant development of POD-reliant products has not been adequately supported in the first place. Similarly, an HDTV manufacturer is not likely to offer consumers a $5,010 OCAP-reliant product if major cable headends are still years away from supporting OCAP—so the "pledge" would never have to be honored.

the devices that cable operators distribute *themselves* must also rely exclusively on OCAP.

The "PHILA" License. Competitive entrants have been frustrated in their attempts to procure a license for "POD" security modules *without* having to agree to a passel of provisions that would impose serious burdens on consumer use of display and recording products, and other provisions that seem at variance with FCC regulations. Chairman Tauzin and Rep. Dingell made a tremendous contribution by simply demanding that this draft license be taken out from under non-disclosure agreements, and aired publicly. Recently, Rep. Boucher wrote to Chairman Powell, proposing that competitive entrants provide the FCC with a version of the PHILA license that does comply with FCC regulations, and does not harm or burden consumer use of present and future products. He also proposed that the FCC then oversee negotiations on an expedited basis. Two weeks ago, CEA filed such a draft license with the FCC.[11] We are very hopeful that negotiations will succeed on this basis.

"POD" Cost And Support. Although the cable industry has been specifically aware of the need for a national security interface since 1998, in the last few months it has filed documents with the FCC claiming that each module and interface, together, would cost almost $100, and asking to be excused from compliance as to their own products. CERC responded that the cost complaint is a self-fulfilling prophecy, because the industry has resisted manufacture in any volume. We filed supporting documentation to show that, at cable industry deployment rates, after a few months the price would drop to under $15, and keep dropping.

Again, the issue here is one of *reliance.* If cable operators never have to rely on PODs but their competitors do, where is the market incentive to make them operate better and cost less? If only competitive entrants use PODs, how long will it take to reach one million units of production? As in the case of OCAP, incentives work better than regulation. *You can't reasonably* **order** *costs to go down* when the volume isn't there to support the reduction. You can order "full support" for poorly or inefficiently engineered products, but enforcing your order is, and has been, a nightmare.

What you can, and should, do is tell the cable operators simply that what's good enough for their competitors is good enough for them.[12]

It seems ironic that the FCC has now (in the "dual tuner" order) ordered all TV manufacturers essentially to build a computer into their products, and expects volume production to bring costs down from the hundreds to the tens of dollars. Yet the benefits of volume production are ignored by the cable industry as to a far simpler device—one as to which it has already been demonstrated around the world that mass production can bring the price down to single digits in a year or two.[13]

SPECIFIC CERC COMMENTS ON THE STAFF DRAFT OF H.R. ——

Much of the staff legislative draft on which you have invited comment today is music to our ears, but we think the words still need some work. We would be pleased to join with other interested parties to work with the staff on fine tuning. As I have concentrated on the "cable compatibility" issue today, I will address that section first, though we do have comments on some of the other sections, as well.

"DIGITAL TELEVISION CABLE COMPATIBILITY."

The goals stated and implied in this provision provide a strong step forward. We applaud the Committee for recognizing that cable compatibility is a key—perhaps *the* key—to the digital transition. The Committee staff also recognizes that it involves support for multi-purpose consumer electronics products, as well as for DTV and HDTV receivers.

While consumer enjoyment of digital television is the ultimate goal of cable compatibility, achieving this goal for consumers involves compatibility of more than the DTV receiver itself. Just as telephone deregulation helped spawn many new products (modems) and services (the Internet) that are not telephones, true cable compatibility can enhance, even create, entire new generations of products that are not DTV receivers. The draft recognizes this, but not in enough places. Today I can only

[11] *See* CEA *ex parte* filing of Sept. 11, 2002.

[12] FCC regulations do this, although the 2005 date is too far in the future. CERC respectfully and strongly disagrees with the staff draft provision that would remove this regulation.

[13] *See* CERC *ex parte* filing, August 15, 2002, Declaration of Jack W. Chaney. At the deployment rate of 135,010 per week, the volume milestone of one million units would be reached in less than 2 months. Reaching this volume level based on competitive entrant products alone would, unfortunately, take much, much longer.

touch on the particulars of our concerns, and how we think they might be addressed.

- **"Nationwide interoperability and portability."** This specific requirement and expectation is long overdue. Emphasis on receiving, recording, and display devices is very welcome.
- **"Uniform family of technical standards."** With respect to PHILA, we think it is a step forward to distinguish, as this provision does, between specifications controlled by CableLabs, and uniform standards, that are not. However, we are concerned that in present form (d)(2) appears very prescriptive as to technology that is less than leading edge; pertains primarily to DTV receivers but not the other products cited in (d)(1); and does not mention OCAP.

We understand some of the reasons for focusing here on near-term solutions. Manufacturers do not wish to be subject to legal mandates as to which features to offer to consumers. But, as I discuss above, this cannot be the end of the story. For more advanced services (that are already offered in proprietary set-top boxes) to be supported as to competitive entrants, there must be some *incentive* for cable operators to support these products. Rather than try to achieve support for these advanced services by strict mandate, yet avoiding oppressing manufacturers, we recommend the CERC solution: **a simple requirement that cable operators' products must also rely exclusively on the technologies that they develop for their competitors.**

• **POD Modules.** Paragraph (2)(B) mandates, by July, 2005, standardization of POD modules that has in fact already been achieved, without requiring any improvements. Section 10 of the bill, which would eliminate cable operator deployment of the national security interface in their own devices, goes in the wrong direction, for the reasons I've pointed out above. It would remove incentives for (1) improvement of POD modules, and (2) dramatic decreases in cost, and improvement in efficiency, through immediate mass production and deployment.

In theory, it should not matter to competitive entrants and retailers whether the cable operator set-top requires a POD module, because the cost of the module is a network cost that they must bear. But look at the economic incentives: already, it is a device to support competitors; how good should cable operators and their entrenched suppliers want to make it? The change wrought by Section 10 would also ensure that for years, this device would remain in low volumes, as competitive entrants battled their way into the market. Operators and CableLabs would have every incentive to keep efficiency, reliability and volumes low.

In its Reconsideration Order, the FCC recognized that this kind of foot-dragging could occur, and said that if it did, it would consider moving up the reliance date, to 2003. That is what the Commission should do. Therefore, if we hope to avoid more years of endless debate over standards and move toward real and legitimate competition, and if we hope ever to see cable functionality integrated into television sets, Section 10 must be omitted.

• **Equipment compliance with standards.** Having mandated specific technical standards, the draft would first impose compliance obligations on manufacturers, then list exemptions. If adequate incentives or regulations exist as to cable support, a specific mandate on manufacturers should not be necessary.

The "exemptions" from the mandate clearly are meant to be *restrictions as to obligations that can be imposed on manufacturers via the PHILA license.* As such, they are vitally pro-consumer, very well founded, and should help resolve outstanding PHILA issues:

- allowing manufacturer self-certification;
- robustness and compliance rules that do not impair functionality of consumers' reception, recording, and display equipment (ruling out, e.g., "selectable output control" and "downresolution");
- limitation to provisions that address only theft of service and physical harm to the network (rather than cable operator business objectives or market advantage); and
- that OCAP implementation need not be mandatory with manufacturers, as not all consumers will need this facility built into their TV receivers.

Some elements that we think should be included, or more clearly stated:

- While there is some reference to "encoding rules," to protect consumer expectations as to the viewing resolution and ability to record received content, the requirement of such rules in license or regulation should be more explicit, adopting for digital television the provisions of Section 1201(k) of the Digital Millennium Copyright Act of 1998 ("DMCA").
- Based on our experience with consumer expectations, manufacturers need some assurance that their products will have adequate access to *electronic program*

guide information, without forcing the consumer to pay twice for the receipt of this information.

Generally, this important "exemption" provision would be clearer if stated primarily in terms of what terms *cable operators* may not impose via license, rather than in terms of what the *regulations* may mandate. Imposition by license is the real issue at hand.

• **Upgradeable to successor digital interfaces.** While this requirement is a laudable goal, I see several potential problems in terms of the core consumer concerns I described at the outset:

(1) **value**—manufacturers today cannot know what "successor" systems will be or entail, so they cannot within any reasonable cost ensure "upgradeability" to unknown, or even to some known, systems.

(2) **flexibility**—this requirement, even if achievable, may not be necessary for some or many products meeting the staff's definition of "television display."[14]

(3) **content**—the only way I can imagine meeting this requirement would be through some plug-in involving digital-to-analog-to-digital ("D-A-D") conversion. In addition to degrading the signal, it would likely be considered insecure by content providers. Any purely digital means for providing a secure "handshake" with an unknown system, even if feasible, would likely require extensive multi-industry technical standards discussions as to preserving signal security from one system to another, possibly *delaying* the entry of any new display products, or any new digital protection technologies, into the market.

DIGITAL TELEVISION BROADCAST FLAG RULEMAKING

As I noted at the outset, a core consumer concern that drives the acquisition of new products is to receive compelling content for enjoyment at home. Therefore, CERC members endorse the goal of the "broadcast flag" initiative, which is, I believe, correctly stated in the staff draft: to curb the *unauthorized redistribution to the public of content over the Internet,* in competition with the original authorized distributor.

We also endorse the other core goal of the draft, which is to do this *without* depriving consumers of the functionality of any of the products already in their home, or on their home network. Accomplishing both of these core goals—as the private sector Broadcast Protection Discussion Group ("BPDG") participants found in six months of discussion—is no easy task. Some of these complications are evident in the staff draft as well.

One provision that we think simply does not work, and poses (depending on how it is interpreted or applied) unacceptable hardship for *either* consumers or content providers, is the provision in Section 5(b)(3), that would "terminate the manufacture of equipment [capable of demodulating DTV broadcasts] that has analog outputs by July 1, 2005." Depending on how interpreted or enforced, it seems that this provision would either (1) largely destroy the utility of 300 million TVs and VCRs, plus millions of PCs and their displays, already in consumers' homes, *or* (2) create a huge market for D/A converters, necessary to fulfill the *other* laudable obligations of this Section—that the utility of devices already in consumers' homes be preserved. Moreover, content providers would likely regard such cheap and prolific D/A converters as "circumvention devices." At present I see no way of saving this provision from one or the other consequence. Our specific comments:

(b) regulation requirements, criteria. We endorse the ideas of an expedited process, self-certification, and objective criteria. We endorse the goals of (B), that regulations not impose unnecessary or unreasonable product burdens, (C) that they protect full functionality of earlier consumer equipment, and (D), that they provide for technological and market neutrality.

We understand, however, that in BPDG discussions, many felt that goal (b)(C) (protecting all possible functions of products already in the home) could not feasibly be satisfied while still meeting goal (a) (preventing the unauthorized redistribution to the public). In such case, I fall back on my description, at the outset, of core consumer requirements: that legitimate consumer expectations *at the time of purchase* of the product must be protected. Application of this principle means, in my opinion:

As to display devices, not constraining the availability of, or downgrading the resolution of, signals in formats for which the display has inputs.[15]

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[14] This term, not defined in the staff draft, is, I believe, not found in statute or regulation. These refer to a "television receiver," which has an off-air tuner. Television-capable displays would seem to include all computer monitors, and, nowadays, many PDAs, mobile telephones, and other products.

[15] This implies *not* cutting off or degrading any inputs to these products, including the analog inputs—which for most existing products, is all they have.

As to recording devices, not constraining reasonable and customary consumer expectations as to recording through the device's inputs.

As to playback devices, not constraining the ability to play back programs according to consumer expectations as to formats existing at the time of purchase.

For any "broadcast flag" implementation to be accepted rather than resisted by consumers, these must be considered immutable concerns.

• **(b)(3), termination of analog outputs.** If this provision means what it seems to mean, it would impose unacceptable hardship on consumers, at variance with principle 1., above. This provision seems to say—notwithstanding the obligation that functions of in-home devices be protected—that no device with a DTV tuner may output an analog signal of any sort—not on channel 3, not via composite, component, or "S" video—after July 1, 2005.

This provision seems to say that the 300 million TVs and VCRs in consumers' homes—including the 3 million HD-ready displays recently purchased by DTV transition pioneers—could no longer acquire *any* broadcast signal off the air, or through a DTV broadcast converter, after January 1, 2006. Even in homes served by cable or satellite services, some televisions are not hooked up to such services, so upon return of spectrum would have no way, other than through a DTV broadcast converter, to acquire signals. Even those existing sets that are hooked up to cable and satellite service have no digital inputs, and most have no integrated DTV tuner, so must rely on *some* analog input from an external device. The same is true as to the hundreds of millions of PC monitors in use today, which would rely on tuner cards in PCs.

Presumably—though this is not entirely clear—this provision applies only to outputs of products that themselves contain DTV broadcast demodulators, and not to outputs of products that receive flag-protected signals from DTV tuners by digital means. Therefore, relying on the requirements stated in (b)(2), requiring protection of the full functionality of devices already in the home, one can assume that digital protection technology systems, such as DTCP, HTCP, and others, would be *required* to provide analog outputs serving every analog input in the marketplace on January 1, 2006—component, composite, "S," and "RF" video—at all resolutions for which devices in homes today have inputs. One must also assume that cable and satellite set-top boxes carrying flag-protected signals would also be obliged to offer all of these analog outputs. This interpretation is essential to avoid turning 300 million TVs and VCRs, and most existing PC monitors, into useless furniture. The problem with it, however, is:

- Consumers would, even so, be obliged either to subscribe to cable or satellite, *or* to buy an add-on converter, in addition to the add-on DTV tuner, to support an existing TV, VCR, or PC monitor.[16]
- Content providers would likely regard the millions of D/A converters that support all analog outputs in all resolutions as potential "circumvention devices," as to other protections built into the secure digital transmission systems.

Alternatively, subsection (3) could be read as outlawing *any* analog output, in *any* product capable of receiving, converting, or carrying a flag-protected signal. This would include cable boxes, satellite boxes, and add-on D/A converters. This interpretation would mean that the hundreds of millions of TVs, VCRs, and PC monitors in homes today would become entirely useless as to *any* broadcast, cable, or satellite programming—broadcast, pay cable, pay-per-view, video-on-demand, etc. We doubt that, given the regard otherwise shown for consumer products and expectations, this is a result intended by the Committee staff.

• **(b)(5), safeguards.** CERC endorses this provision. But see above.

DIGITAL TELEVISION TUNER REQUIREMENTS

CERC has not taken a position on the FCC's order as to "dual tuner" requirements, *per se*. However, CERC agrees with and endorses the observations of several FCC Commissioners, the Media Bureau staff, and Members of Congress that the public interest is served by this requirement if nationally portable and interoperable cable tuners can be deployed in all affected products on at least the same deployment schedule. My own estimation is that this would require:

- immediate product planning by manufacturers, and,
- resolution of the outstanding compatibility, regulatory, and license issues, that I have discussed, within an accelerated time frame.

CERC has stressed that incentives, efficiency, and consumer expectations are the key to breaking through the barriers to the digital transition. It is widely accepted

[16] This existing product may still provide vital service to the home, but be worth less than the value of the two add-on converters.

that, whereas the dual tuner obligation serves primarily the 10-15% of households that do not have cable or satellite access, the components necessary to implement this obligation are largely the same ones that can support operation of these television receivers as nationally portable and interoperable DTV cable navigation devices. It would ill-serve consumers to miss this opportunity.

PASS-THROUGH OF NETWORK DIGITAL SIGNALS

We agree with the staff draft that consumers are entitled to receive, from local broadcasters, content that was originated as HDTV. We think, however, that the same obligation, for the same reasons, should apply to local cable operators, with respect to (1) all broadcasts, and (2) non-broadcast, nationally distributed cable channels or programs.

CONSUMER NOTICE REQUIREMENT

We agree in principle that (1) consumers should not be disappointed in their reasonable expectations as to products already in their homes, and (2) to the extent they are about to be disappointed in a purchase, they should be forewarned. We have concerns, however, about the labeling scheme laid out in the staff draft.

First, quality control should mean doing it right the first time, not trying to fix it later. If the FCC does its job right in implementing regulations, it should not be necessary to have labels about what works with what. Second, requiring labels on *both* media and devices invites hopeless confusion. The consumer risks being trapped in a circle of warnings that, ultimately, makes no sense.

Third, the labeling requirement on equipment seems a moving target. At the time of manufacture, one cannot hope to keep up with all developments in media deployment—particularly if discretion remains with local cable companies. Updating labels could become a weekly, local, and futile job for retailers.

Finally, it may be counter-productive to require labels on, for example, movies, as to the devices they will play on and the ones they won't. There's only one *Lion King.* The media label that is meant to embarrass the producers, as to which home device is locked out of enjoying the *The Lion King,* would simply depress the market for the device on which *The Lion King* does not play. So, perversely, the labeling imposition on content providers could in fact *empower* them to drive certain consumer electronics and computer devices off the market.

We think initial quality control, guiding the FCC to enact fair and balanced regulations, that respect the consumer and provide appropriate marketplace incentives for content providers, content distributors, and device manufacturers and vendors, is superior to any *ad hoc* labeling patch.

On behalf of Best Buy, Circuit City, Good Guys, RadioShack, Sears, Tweeter, Ultimate Electronics, the International Mass Retail Association, the North American Retailer Dealers Association, and the National Retail Federation, I would like to thank the Subcommittee for inviting us here today, and congratulate the leadership of this Committee for everything it has done to move this transition forward on behalf of the consuming public. CERC pledges its full cooperation in your efforts.

APPENDIX

Regulation Revisions First Proposed By CERC members, April 16, 2001
additions in **bold**
deletions in [brackets]

76.1204(a)(1). A multichannel video programming distributor that utilizes navigation devices to perform conditional access functions shall make available equipment that incorporates only the conditional access functions of such devices. Commencing on January 1, [2005] **2002**, no multichannel video programming distributor subject to this section shall place in service new navigation devices for sale, lease, or use that perform both conditional access and other functions in a single integrated device. **Commencing on January 1, 2002, any multichannel video programming distributor subject to this section, or affiliate thereof, shall place in service for sale, lease, or use only such new navigation devices as rely, for their operation, solely on whatever OpenCable specifications and licensing terms, to implement services, features, applications, and conditional access support, as are required by the distributor with respect to the licensing, manufacture, certification, attachment or use of navigation devices provided by unaffiliated manufacturers or vendors pursuant to Section 76.1201.**

76.1204 Availability of equipment performing conditional access or security functions.

(g) Effective January 1, 2002 and until the regulations adopted under this subpart cease to apply as determined in accordance with Section 76.1208, cable system operators must:

(1) provide annual written notification to their subscribers that subscribers may purchase or lease navigation devices from unaffiliated vendors that are capable of receiving the same services, content, programming, features and functions accessible through navigation devices provided by the subscriber's cable system operator, without the need for any additional equipment from the cable system operator and without degrading the ease of use of such navigation devices or the quality of such services, content, programming, features and functions;

(2) provide oral notification and written confirmation, at the time when a subscriber orders cable television or related services, that the subscriber may (A) already own consumer electronics equipment that is capable of receiving the same services, content, programming, features and functions accessible through navigation devices provided by the subscriber's cable system operator, without the need for any additional equipment from the cable system operator and without degrading the ease of use of such navigation devices or the quality of such services, content, programming, features and functions; and (B) purchase or lease navigation devices from unaffiliated vendors that are capable of receiving the same services, content, programming, features and functions accessible through navigation devices provided by the subscriber's cable system operator, without the need for any additional equipment from the cable system operator and without degrading the ease of use of such navigation devices or the quality of such services, content, programming, features and functions; and,

(3) The notification and confirmation required by subsections (g)(1) and (2) shall indicate clearly that the conditional access function equipment required to access certain services, content, programming, features and functions using a navigation device purchased or leased from an unaffiliated vendor is the same as the one required for navigation devices provided by the cable system operator, and that the price for such conditional access function equipment is identical regardless of the subscriber's choice.

76.1206 Equipment sale or lease charge subsidy prohibition.

(a)(1) Multichannel video programming distributors offering navigation devices subject to the provisions of Section 76.923 for sale or lease directly to subscribers [shall adhere to the standards reflected therein relating to rates for equipment and installation and shall separately state the charges to consumers for such services and equipment] **shall not use any service revenues to subsidize the sale or lease prices or rates of these navigation devices until the regulations adopted under this subpart cease to apply as determined in accordance with Section 76.1208.**

(2) Effective January 1, 2002, a Multichannel video programming distributor offering navigation devices subject to the provisions of subsection 76.923 may elect to pool the costs of devices covered by subsection 76.1204(a)(1) with the costs of all other navigation devices provided by the MVPD if it:

(A) maintains on its publicly accessible web site and files with the Commission and the applicable franchise authority a report disclosing:

(i) the price or prices for each navigation device offered by such multichannel video programming distributor;

(ii) the amount of any subsidy reflected in the price for each such navigation device, and

(iii) the methodology by which such subsidy was calculated; and

(B) provides to subscribers the same subsidy for navigation devices purchased or leased from unaffiliated vendors as that reflected in the price for navigation devices provided by such multi-channel video programming distributor.

(3) The report described in subsection 76.1026(a)(2)(A) shall be amended within ten days of the offering of any new navigation device or any revision in the price or terms for any existing navigation device. The Commission may review and direct changes in the methodology described in subsection 76.1206(a)(2)(A)(iii).

(b) The requirements in subsections (a)(2) and (3) shall remain in effect until the regulations adopted under this subpart cease to apply as determined in accordance with Section 76.1208.

Mr. BASS. Thank you very much, Mr. McCollough.

The Chair recognizes Ms. Bradshaw.

STATEMENT OF THERA BRADSHAW

Ms. BRADSHAW. Thank you. Mr. Chairman and members of the committee, thank you for the opportunity to appear before you today. We commend the efforts of Chairman Upton, Mr. Markey, Chairman Tauzin and Mr. Dingell for including public safety in this particular discussion.

I am Thera Bradshaw, and I am president of APCO, the Association of Public Safety Communications Officials. I am also the assistant general manager for Policy and Public Services for the city of Los Angeles Information Technology Agency. I appear before you today on behalf of APCO as well as the coalition of the national organizations that have a direct stake in radio spectrum for police, for fire and for emergency medical, along with other public safety agencies.

These organizations include the International Association of Fire Chiefs, International Association of Chiefs of Police, the National Sheriffs' Association, National League of Cities, the U.S. Congress of Mayors, NATOA, National Association of Counties and others.

We call upon Congress to immediately set a final date for completion of the digital television transition. The decision this committee and Congress makes regarding DTV will impact public safety agencies and their ability to protect life, health and property. The current administration noted specific gaps that must be addressed in order to ensure a secure homeland. We submit that the lack of radio spectrum for public safety is one of those gaps. We strongly support legislation establishing completion of DTV transition in the near term or, at worse, December 31, 2006. Such legislation permits police officers, fire fighters and emergency medical personnel to communicate effectively with each other directly. We need spectrum to alleviate channel congestion, to implement new communications technology and also to facilitate interoperability.

In 1996, on, incidentally, September 11, a joint FCC and NTIA Committee recommended additional spectrum to be made available for public safety use within 5 years. Unfortunately, exactly 5 years later, on September 11, 2001, the spectrum was still not available in most of the Nation. Unless Congress revises existing law, spectrum will not be available until far into the future. The Balanced Budget Act of 1997 allocated additional radio spectrum. The FCC did its part and reallocated to public safety the spectrum from television channels 63, 64, 68 and 69. Today, in most metropolitan areas, the spectrum is still not available. Certain television stations continue to occupy those channels. Under current law, these television stations can remain on the air until December 31, 2006 or until 85 percent of households can receive DTV signals, whichever is later.

The map shows, that is displayed here and attached to your testimony, geographic areas currently blocked by the television stations. Those areas representing the highest level of conflict are in the most densely populated areas of the country with the most significant demand, I might add, on public safety resources. It is unlikely that the 85 percent benchmark will be met until long after 2006. Consequently, public safety personnel will be waiting indefi-

nitely for additional radio spectrum required today, not at some future undefined date. State and local governments need a firm and early date to proceed in the planning that is necessary, the design, the funding and the construction of new radio systems and lives, frankly, depend on it.

We applaud the commitment of Representative Jane Harman who, together with Representative Curt Weldon, have introduced H.R. 3397, the HERO Act. This bill addresses the spectrum issue and has the support of all of the organizations that I am representing here today. We also strongly support Section 3 which eliminates the 85 percent requirement in the existing law and terminates broadcast operations on channels 60 through 69 by December 31, 2006.

Since September 11, the need for radio spectrum is more critical than ever. APCO is certified by the FCC to coordinate public safety frequencies. We have far more requests for channels than we can possibly accommodate. In many cases, the only option is to rely on crowded or shared channels and to risk interference to life-saving operations. Those of us who work actually in public safety know all too well the ongoing issue of interoperability. In my written testimony, I referred to communications difficulties that were experienced in 1995, Oklahoma City bombing. Multiple responders from agencies surrounding and communities couldn't talk to each other and lacked the ability to coordinate effective communications. Frankly, that very situation exists today as a fire burns out of control in over 18,010 acres in Angelos National Forest outside the city of Laverne, California. It threatens over several hundred homes with 40 homes that have actually burned. Multiple agencies are on the scene with 2,010 fire fighters from southern California now, and their radio systems are on different frequencies and they can't talk to each other. The lack of spectrum forces the agencies to operate in different bands, and we are experiencing that in southern California as they are in the Nation.

Mr. BASS. If you would please conclude.

Ms. BRADSHAW. I understand. Thank you very much. I appreciate the opportunity for public safety to be before you. Again, life, health and property are at stake and at risk. Thank you.

[The prepared statement of Thera Bradshaw follows:]

PREPARED STATEMENT OF THERA BRADSHAW, PRESIDENT, ASSOCIATION OF PUBLIC-SAFETY COMMUNICATIONS OFFICIALS-INTERNATIONAL

Thank you, Mr. Chairman. My name is Thera Bradshaw. I currently serve as President of the Association of Public-Safety Communications Officials-International, Inc. ("APCO"), and I am also Assistant General Manager, Policy and Public Services, for the City of Los Angeles Information Technology Agency. I appear before you today on behalf of APCO and other national organizations that have a direct stake in the provision of adequate radio spectrum for police, fire, emergency medical and other public safety agencies. These organizations include the International Association of Fire Chiefs, International Association of Chiefs of Police, National League of Cities, National Association of Counties, National Association of Telecommunications Officers and Advisors, Major Cities Police Chiefs Association, National Sheriffs' Association, and Major County Sheriffs' Association ("Public Safety Organizations"). I note that the City of Los Angeles is a member of several of these organizations.

Mr. Chairman, most of the witnesses appearing before you today will discuss issues related to the deployment of digital television throughout the country. Those are important matters. However, I am here today to discuss a closely related issue

which has a far greater impact on the safety of life, health, and property for every citizen of this great nation.

In particular, I want to state the *Public Safety Organizations' strong support for legislation that would establish December 31, 2006, as the firm date for completion of the digital television transition,* at least as it related to television channels 60-69. That would allow *nationwide public safety use of radio spectrum already allocated for its use,* but blocked in most metropolitan areas by ongoing television station operations.

In the year since last September 11, there has been much attention here in Washington on improving homeland security and public safety operations across the country, primarily from a Federal Government perspective. However, it is important to remember the *first line of defense* against domestic terrorism, and the *first response* to terrorist attacks and other emergencies, is by state and local public safety agencies, not the Federal Government. State and local governments, therefore, must have the necessary tools, including communications capabilities, to protect the safety of life, health and property. That is why the legislation being discussed today is of such critical importance to public safety.

This legislation would have a direct impact on the ability of police officers and sheriff's deputies to call for assistance on their portable radios without waiting for an open channel; the ability of a firefighters from different departments to communicate with each other at the scene of an emergency; and the ability of local governments to implement state-of-the art communications tools necessary to support police, fire, emergency medical and other public safety personnel.

Effective, efficient, and interoperable radio communications capability is essential for both day-to-day operations that protect the safety of life, health and property, and for major emergencies such as winter storms, hurricanes, forest fires, the earthquakes and wildfires that we in Los Angeles must face on a regular basis, riots, train and plane accidents, major building fires, and—especially since last year—the increasing threat of terrorist attacks.

Public safety agencies have long had a critical need for additional radio spectrum to accommodate their increasingly complex communications requirements. Spectrum is needed to alleviate dangerous congestion on many existing public safety radio systems, to provide capacity for new "interoperable" radio communications networks, and to permit implementation of new communications tools such as wideband mobile data capability.

Six years ago, on September 11, 1996, the joint FCC/NTIA Public Safety Wireless Advisory Committee documented public safety spectrum requirements and recommended that approximately 24 MHz of spectrum be made available for public safety use within five years. Unfortunately, exactly five years later, *on September 11, 2001, that 24 MHz of new spectrum was not available for public safety use* in most of the nation. Furthermore, unless Congress revises existing law, that spectrum will not be available until far into the future.

The Balanced Budget Act ("BBA") of 1997 did, in fact, require the FCC to allocate an additional 24 MHz of radio spectrum for public safety services. The 1997 BBA provided that the spectrum would be in the 746-806 MHz band, now occupied by television channels 60-69. The FCC then did its part and reallocated to public safety the spectrum from TV channels 63, 64, 68, and 69 (764-776/794-806 MHz).

The 1997 BBA allows these television stations to remain on-the-air until December 31, 2006, OR until 85% of households in the relevant market have the ability to receive DTV signals, whichever is later. Unfortunately, for the reasons that you are discussing here today, it is highly unlikely that the 85% benchmark will be met until long after 2006, and probably not until well into the next decade. As a result, *police, fire, emergency medical and other public safety personnel must wait indefinitely* for the additional radio spectrum and communications capabilities that they need today, not at some future, undefined date.

Attached to my testimony is a map which depicts the geographic areas in which existing TV stations are blocking the reallocated public safety spectrum. As you can see, it includes most of the densely populated Northeast from Boston to New York to Washington, large portions of the Great Lakes Region, the Southeast including the Atlanta, Orlando, and Miami metropolitan areas, Dallas, San Francisco and most of Northern California, as well as my home City of Los Angeles and surrounding areas of Southern California.

I want to emphasize that merely speeding up the deployment of digital television to meet the 85% requirement is not enough. *Public safety needs a firm and early date* for television stations to vacate the channels allocated for public safety use, as well as the adjacent channels. Without a firm date, state and local governments cannot proceed with the planing, design, funding, and construction of new radio sys-

tems. Under current law, local governments are uncertain when, or even if, the spectrum will ever become available.

Therefore, we urge that Congress establish December 31, 2006, as a firm and final date for television stations to vacate the channels blocking public safety use of this new radio spectrum. Representative Jane Harman of this Subcommittee, and Representative Curt Weldon, who has been leader in helping our nation's first responders, have offered a bill, H.R. 3397, the Homeland Emergency Response Operations (HERO) Act, which is aimed at addressing this issue, and which has the support of all of the organizations on whose behalf I appear today.

The Public Safety Organizations also strongly support Section 3 of the draft DTV legislation recently distributed by your committee staff to the extent that it would eliminate the 85% "loophole" in the existing law and terminate broadcast operations on channels 60-69 by December 31, 2006.

Since September 11, 2001, the need for new radio spectrum has become even more critical, as reflected in the attached letter from the Los Angeles Police Department. More and more state and local governments realize that their current public safety communications systems are often overcrowded and lack sufficient "interoperability" with other agencies and jurisdictions. For example, in the New York City area, APCO which is certified by the FCC to coordinate public safety frequencies, has far more public safety agency requests for channels than it can possibly meet from existing spectrum allocations. Similar problems occur throughout the country. In many cases, the only option is to rely upon crowded "shared" channels and risk interference to life-saving operations.

The radio spectrum that television stations are currently blocking would also play a critical role in addressing a long-standing problem facing public safety communications. All too often, "first responders" from different agencies arriving at an emergency cannot communicate with each other. This occurs on both a day-to-day basis, and at major emergencies that draw responders from widely scattered agencies. For example, in the immediate aftermath of the Oklahoma City bombing in 1995, *personnel attempting to coordinate life-saving activities had to rely on hand signals and "runners"* because their radios were incompatible.

While this lack of "interoperability" has many causes, it is often the result of public safety agencies being forced by spectrum scarcity to operate in different, incompatible, radio frequency bands. At any one time, the police officers, firefighters, emergency medical personnel and others at an emergency scene may be operating on VHF, UHF, or 800 MHz radio systems, none of which can work together in the field.

The solutions to interoperability are complex, but the most effective long-term solution is for public safety agencies in the same geographic area to operate in the same portion of the radio spectrum. In some cases, wide-area, multi-agency, and multi-jurisdictional radio systems covering a large city, county, region, or state can provide interoperability among participating agencies (and more efficient use of scare resources). However, most heavily populated areas lack sufficient spectrum to develop new wide-area radio systems. Where such systems already exist, additional spectrum capacity is needed for new users and operations.

The spectrum from television channels 60-69 that has already been allocated for public safety will greatly improve interoperability. The band is immediately adjacent to, and will be interoperable with, the 800 MHz band where many relatively new wide area public safety systems already exist. The FCC has also designated certain channels within the newly allocated 700 MHz band for nationwide interoperability, and adopted a technical standard for those channels. Once again, however, this nationwide interoperability will only exist once the current television stations vacate channels 60-69 and new public safety systems can be implemented.

While interoperability is primarily a state and local government agency issue, interoperability with federal agencies is increasingly important, especially with regard to new homeland security issues. The creation of a new Department of Homeland Security, which will bring over 170,010 federal employees and 20 agencies under one roof, heightens the need for improved and better coordinated communications between all levels of government. The events of September 11, 2001, have also placed new demands on all public safety communications. State and local governments must add additional personnel and tasks both to prevent and, potentially, to respond to terrorist attacks. For these reasons, we believe Congress should also consider expanding the existing public safety allocations beyond the current 24 MHz mandated in the 1997 BBA. In any event, none of that public safety use will be possible on a nationwide basis until existing broadcasters vacate the spectrum.

Mr. Chairman, on behalf of the nation's Public Safety Organizations, I thank you for the opportunity to appear here today, and I urge you and your colleagues to act

quickly to establish a firm and final date for additional radio spectrum to be made available for public safety communications throughout the country.

Mr. UPTON. Thank you very much, Ms. Bradshaw.

Mr. Kimmelman.

STATEMENT OF GENE KIMMELMAN

Mr. KIMMELMAN. Let us see if the mike will reach here.

Mr. UPTON. It better. Otherwise we will really be in trouble.

Mr. KIMMELMAN. I will scream. I have been called a screamer before. Mr. Chairman, on behalf of Consumers Union, the print and online publisher of Consumer Reports Magazine, I appreciate the opportunity to testify on the transition to digital television. I want to follow the model that Chairman Tauzin laid before the committee that he expects legislation coming out of this committee to live by, which is a consumers' expectation test. I think that is an appropriate model where consumers get the TV signals they want. They can really see them, they can connect their television to their cable system, they get exciting new content, and they continue to be able to record at home their favorite TV shows, movies as they have in the past. You have a very difficult task here in accomplishing that with a transition to digital television, but, unfortunately, I think the path you are headed on may be the wrong one at this time.

As with many pieces of legislation, you have conflicting goals and conflicting interests, and you attempt to balance them. And the pattern here is an extremely dangerous one. It is a pattern we have seen many times in the last decade. It is one of saying, "Oh, my gosh. Let us split the baby," and technology that is just over the horizon will save the day. Technology will get us there. Costs will come down. They will come down so dramatically, so quickly that they will be negligible, and consumer inconvenience, we will deal with that later.

Just think about what is at stake here. We are talking about a Nation moving toward 300 million television sets, 40 million DVD players, probably double that many VCRs, that many computers out there. But we are saying in 5 years we are going to have all new hardware, digital, across these industries, and we are going to thread the needle and interlace that with software that protects only piracy, only prevents piracy, only prevents theft, even though that software with that hardware can prevent every bit of consumer copying that goes on today. But it won't. We are going to guarantee that in legislation.

We are going to dictate this through manufacturing and software standards, and we are going to make sure that all of that old equipment, the 300 millions sets, the 30 million that are bought every year, each year until the 5 years when this clicks in, the new DVD players, the new VCRs, they are going to all work, they are going to all interconnect, even though the legislation eliminates the possibility of producing equipment with analog outlets so it is hard to quite understand how any of this work, but it will work, according to this legislative approach.

And what happens if it doesn't? Well, the consumer is probably paying a lot more. The consumer is probably getting a lot of hassles in connecting home recording equipment, in just making the tele-

visions they bought work. And what they do? Who do they complain to? Is it possible it won't work? Well, let us look at the history of legislating this way. In the last decade, we have said technology was there to produce competition to the cable television industry. We could deregulate. Well, today rates are up 45 percent from what they were in 1996 when you started down that path. Satellite is there offering more but not lower prices.

And we did the same for the telecommunications industry. We said technology is here, costs are coming down, people will build networks. They haven't. No one's built hardly anything, and where prices are lower it is all because of regulating a monopoly network. We have made these mistakes before and the consumers are paying in those areas. We want to make sure they don't have to pay again in this area.

So, Mr. Chairman, I suggest that in continuing work on this legislation you really think about going back to the drawing board, and before you craft a new version of this get the hardware and the software industry to show us the equipment and show us how we can copy just our favorite TV shows, our movies. Show us how our computers won't be disabled to do a little video streaming for personal use. Show us the equipment that will connect all of the old things that we have bought with all the new things that will be mandated in 2007 or whatever. Tell us the price. Just show it to us. Once you have that on the table, then this all makes sense. Then there is a real broadcast flag, then there is a real set of software that fits with hardware that prevents theft and allows recording. Until that date, this is all conjecture until someone produces the real hardware and the real software and shows us the price.

So we urge you to go back to the drawing board and flip the burdens here. Rather than placing all the burden on the consumer for costs, for hassle, for a blank screen or sitting in front of a set and saying, "I thought I could copy this because Chairman Tauzin said I could," figuring out who to sue in court and what agency to go to, flip that around and let us make the companies that stand to benefit, the industries that will benefit from high-definition television, from programming, from production, from distribution bear those burdens of making it work. Then I think it will be time to legislate. Thank you, Mr. Chairman.

[The prepared statement of Gene Kimmelman follows:]

PREPARED STATEMENT OF GENE KIMMELMAN, SENIOR DIRECTOR OF PUBLIC POLICY AND ADVOCACY, CONSUMERS UNION

Consumers Union[1] is extremely grateful to Chairman Tauzin and members of the Committee for their leadership on digital television issues. As the Chairman's Draft suggests, we also agree that the transition to digital has been a failure. From a consumer's perspective, the current incentives to make the jump to digital television

[1] Consumers Union is a nonprofit membership organization chartered in 1936 under the laws of the State of New York to provide consumers with information, education and counsel about goods, services, health, and personal finance; and to initiate and cooperate with individual and group efforts to maintain and enhance the quality of life for consumers. Consumers Union's income is solely derived from the sale of *Consumer Reports,* its other publications and from noncommercial contributions, grants and fees. In addition to reports on Consumers Union's own product testing, *Consumer Reports* (with approximately 4.5 million paid circulation) regularly carries articles on health, product safety, marketplace economics and legislative, judicial and regulatory actions which affect consumer welfare. Consumers Union's publications carry no advertising and receive no commercial support.

are small. Digital televisions are extremely expensive, and only a small portion of all broadcast programming is available digitally.

Consumers will not thank Congress for digital television if it also means they have Congress to thank for higher prices and inconvenience when they buy new TVs and new computers, or integrate their home entertainment systems. Neither will they thank Congress for rolling out digital content if they cannot do the kinds of routine personal copying under the "broadcast flag" scheme that they have grown to expect in the analog television era.

We certainly agree with the Chairman and the committee that it is unacceptable to have two incredibly valuable blocks of spectrum—for which the broadcast industry paid nothing—remain underutilized. It is high time to make more spectrum available to promote competition to cable television, local telephone monopolies, and to promote new services.

Digital television is a positive technology that can benefit consumers and it should be rolled out in accordance with competitive market principles. Freeing up the analog spectrum would allow that spectrum to be auctioned for innovative uses that would serve consumers, and some of the revenue from auctions could also be used to meet local programming needs. Where Consumers Union respectfully disagrees with the staff discussion Draft is over the manner in which we should accomplish such a transition.

The Draft legislation mandates the transition to digital by 2007, and ends all analog transmissions at that time. Such a requirement would place the digital changeover squarely on the backs of consumers. Consumers would have to own digital televisions by then or they would be forced to buy new ones, or they would have to purchase converter boxes for existing analog TVs. Otherwise they would be out of luck. Old TV sets—regardless of how many features they have or how much they cost—would simply not receive TV signals.

Requiring consumers to purchase additional TV sets or additional digital tuner hardware may have the benefit of allowing economies of scale to bring down the price of these electronics in the long run, but it is undeniable that this mandate will impose significant new costs on consumers in the short run.

It has been argued by some that the transition will not be overly costly for consumers to convert to digital because the transition could be made by purchasing an inexpensive converter box. But the plain language of the Draft provides the "termination of the manufacture of equipment that has analog outputs by July 1, 2005." This seems to eliminate the very possibility of a converter box because by definition such a converter would have to have an analog output.[2] In addition, this termination of analog outputs seems to have the effect not only of forcing consumers to buy new television sets, but also could force them to buy new home entertainment systems.[3]

The Draft would ignore existing legal requirements that 85 percent of the country own digital televisions BEFORE analog transmissions are ended. Why does it makes sense to turn this concept on its head and require consumer to buy fancy equipment designed for High Definition television if High Definition isn't worth it to them? How much will consumers be forced to spend to make this transition possible? Is it fair to place the burden of this transition on consumers when it is broadcasters who received an enormous public benefit when Congress gave them this spectrum, and broadcasters will reap financial benefits should the transition finally occur? Why not have the broadcasters and others who will benefit from the shift to digital share the expense of the digital conversion?

The Draft also attempts to deal with the serious problem of Internet piracy, which some argue has slowed the transition to digital television. The Draft language gives broadcasters content protection in both their signal and the hardware that receives that signal in order to prevent piracy. Unfortunately, such a "broadcast flag" may prevent quite a few of today's practical uses, such as taping programming and watching it on another device, in another place, or at another time.

Consumers Union cannot support any legislation involving a broadcast flag that dictates equipment manufacturing specifications and software compliance standards unless it can be demonstrated that before Congress imposes such standards:

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[2] This raises enormous jurisdictional concerns, given that personal computer equipment commonly has analog outputs, such as speakers which provide better multimedia quality. This Draft would apparently assert FCC jurisdiction over all personal computers, surely a result not intended by the drafters.

[3] Consider a consumer who spends several thousand dollars on a home entertainment system that integrates her television with a high quality sound system, which requires an analog input from the TV set. By banning analog outputs, the draft will force her to replace her sound system after the digital transition.

1. Consumers will be able to use current television and recording equipment, without excessive complication or cost, to continue to make personal copies and record broadcast programming as the equipment was designed to;
2. Congress can demonstrate that the price of television sets will not increase appreciably as a result of such mandates;
3. The open architecture of innovation for consumer electronics and computers will not be harmed; and
4. The imposition of a broadcast flag will not be overbroad, sweeping into its reach, for example, general purpose personal computers, and other devices that should remain open and unburdened by such copyright controls.

The Draft would have Congress regulate the manufacturing process of consumer electronics, micromanaging this industry to meet the supposed goals of getting broadcasters to use digital spectrum and return analog for other uses. The professed aim is to protect copyright, but we fear that the Draft may go too far in restricting day to day enjoyment of broadcast programming that involves neither copyright infringement nor piracy of any sort.

As the Committee contemplates burdening consumers with additional costs and complexity in their uses of electronic products, policymakers should ask themselves what the consumer benefit is to this course of action. Again, it was the government, driven by an industry seeking free spectrum, that promoted the digital transition. At no point was there a consumer outcry for High-Definition or digital television.

Until recently, public policy for telecommunications involved handing out public benefits or assets, such as the airwaves or local cable and telephone monopoly franchises, in return for commitments to meet public needs. Broadcasters were to meet local civic and educational needs, and telephone companies were to ensure universally affordable telephone service. This straightforward quid pro quo left companies that were dependent on public assets obligated to meet public needs that market forces failed to satisfy.

Now, in the era of deregulation, public benefits or assets have increasingly been handed out in return for nothing more than corporate promises—promises to deliver High Definition television, promises of cross-industry competition, and promises to expand availability of open platforms providing broadband services. Unfortunately, this new approach has resulted in many broken promises, inadequate industry accountability, anti-competitive behavior and consumer and investor abuse. Clearly, we need to restore accountability by reinforcing the principle that the distribution of public assets or subsidies requires significant public benefit in return.

Unfortunately, this Draft goes in the opposite direction. Congress let the broadcast industry dig a deep public policy and marketplace ditch by giving away an enormous amount of valuable spectrum for free, while imposing no meaningful penalties for failing to deliver digital television to the public.

Let's not dig a deeper ditch. The Draft—while attempting to deliver on the promise of digital TV—places the burden not on broadcasters who received this valuable subsidy, but instead on consumers.

Please consider several possible scenarios if this draft becomes law.

First, suppose a few years from now your daughter's game-winning soccer goal was broadcast on a local television station (which is neither news nor "public information programming," both of which would be exempt from flag protection in the staff Draft). If you record it on a television in your living room, will you be able to view it on the upstairs television? Can you show it to your colleagues in your office?

Second, if you recorded a copy of your mother's favorite show on your home VCR (or one of the devices that will eventually replace VCRs), would you be able to take that copy and watch it with her at her house? Is there technology that would allow you to do this that is not invasive of privacy?

Third, let us suppose that you are adept with computers; you buy an off-the-shelf computer and download the GNU project's open source digital television demodulator. This makes your computer a "digital device capable of demodulating an incoming modulated digital terrestrial broadcast signal." According to the Draft, it would require your computer to recognize the flag. Does the Committee really intend for that device to contain copyright policing hardware and software? Could the GNU project's tuner and other open source initiatives possibly meet the technical standards for the broadcast flag?

At several points in the Draft, staff were careful to try and ensure that the implementation of the flag does not result in diminished functionality of consumers' electronic equipment; we are extremely appreciative of the staff's effort to protect consumers in this manner. However, the mere implementation of the broadcast flag

makes this an unsolvable—or at least unsolved—paradox.[4] If the flag exists to protect digital television content, how can it allow for customary and legitimate consumer uses, such as the time-shifting and space-shifting described above, while denying pirates the ability to distribute their content over the Internet, without invasions of users' privacy?

In summary, Consumers Union wishes to work with the committee in stimulating a rapid transition to digital television broadcast, but we believe that the onus of the digital transition properly rests on the broadcast industry, not on consumers. Instead of simply shutting off analog broadcast by a date certain, policymakers should consider charging broadcasters who fail to relinquish their analog spectrum by 2007 an annual spectrum fee in order to promote their transition to digital. And perhaps the cost of the digital tuner mandate should be borne by the broadcasters, through revenues received by charging broadcasters an annual spectrum fee for their use of digital spectrum.

Furthermore, in our opinion, industry has not yet made a compelling case that the sweeping broadcast flag mandate would expedite digital television rollout. We fear that the flag will not hit where it aims, stopping potential redistribution of digital television content on the Internet, nor is it clear that such technology can be deployed without disrupting consumers' and other public entities (especially libraries) ability to use digital content in a flexible manner. We believe that further analysis of the consumer impacts of such legislative mandates should be completed before Congress puts consumers at risk of paying higher prices and faces greater inconveniences in using electronic equipment.

We have attached more detailed questions and comments regarding the broadcast flag (submitted to Committee earlier this year in conjunction with Public Knowledge and the Center for Democracy and Technology) as Appendix A. We hope to continue working with the Committee to craft legislation that will resolve these important issues for both consumers and affected industries.

APPENDIX A

Date: July 10, 2002
To: House Commerce Committee Staff
From: Center for Democracy and Technology, Consumers Union, and Public Knowledge
Re: Consumer Policy Questions and Issues Regarding the BPDG Proposal for Protecting DTV Content

We have been asked by Committee staff to provide a preliminary analysis from a consumer perspective of the Broadcast Protection Discussion Group's (BPDG) Final Report on the protection of digital television. We also have been asked to suggest questions that the Committee should consider with regard to the broadcast-flag standard and related legislation and/or regulation.

INTRODUCTION

We support the goal of promoting DTV[5] and recognize that the resolution of certain copyright issues could be important to achieving that goal. Further, we are committed to the protection of copyright, and we support creators' and publishers' prerogative to protect their copyright interests through technical means. Consumers have valid interests in this issue as well—in rewarding artists to ensure the availability of a rich variety of content, and also in the cost and convenience of new DTV technology and its impact on other media, like the Internet.

From a consumer perspective, key issues posed by the broadcast-flag proposal include—

- *How will the proposed solution affect consumers?* Will they have to buy substantial new equipment? Will they be able to exercise the fair use rights they have reasonably come to expect?
- *Are there downstream impacts on other computing technologies?* For example, will the BPDG's restrictions have a negative impact on innovation and the growth

[4] Please see the attached appendix for more detail. To date, most of these questions have not been answered to our satisfaction from companies supporting the broadcast flag or those that will be asked to implement the flag scheme.

[5] "DTV" can be a confusing term, since "digital television" can mean anything from current digital delivery systems (e.g., satellite and cable digital transmission) to high-definition television schemes ("HDTV") to implementation of digital-transmission technologies as a way of using broadcasting spectrum more efficiently, resulting in higher-quality broadcasts. We take "DTV" as used in the context of the broadcast-flag discussion to refer primarily to HDTV and secondarily to any digital "high-quality" television content.

of the Internet? Will it set a precedent for broader government standard setting?

- *Will it be effective?* Will the proposal sufficiently diminish the copyright infringement at issue, or will additional steps be needed? Can it be implemented fast enough to promote greater DTV adoption?
- *What are the costs for consumers?* How much will implementing the BPDG proposal add to the economic and convenience costs of DTV and of other consumer technologies?
- *Do the likely benefits of the proposal outweigh the likely costs?*

In general, we believe that serious questions remain as to whether the broadcast flag proposal will be sufficiently effective. Congress should seek assurance that it will not have adverse consequences on consumers, including their ability to use their existing products, their ability to exercise legal and reasonably expected fair uses of content, and their access to future innovative technologies that might allow them to manipulate content in creative ways that are legal under copyright law.

Broader dialog is in order. The Committee should seek more information and use its standing to promote a fuller exploration of the consumer implications of implementing a broadcast flag, and to ensure protections for consumers in any legislative or regulatory endorsement of a solution like the broadcast flag. We believe that all sides in the debate would benefit from developing much clearer answers to these questions. We are eager to work with you, your staff, and the affected stakeholders to ensure greater involvement of the consumer perspective in these important deliberations.

I. CONSUMER IMPACT ANALYSIS

The BPDG Final Report represents the deliberations of a group that was expressly limited in its mission, which was to "evaluat[e] **technical** solutions for preventing unauthorized redistribution"[6] of digital TV content (emphasis added). By intention, the Report did not seek to present a comprehensive means of controlling copying and transmittal of DTV content. By and large, we think that is a good thing—Congress should be highly skeptical about comprehensive solutions, and prefer incremental approaches undertaken by the private sector.

Over time, however, as other technical and policy issues are dealt with, a broader consideration of consumer concerns will be needed, and this process must include consumer organizations as well as industry. Such a broader assessment of consumer impact would:

- Address the question of impact on **legitimate consumer uses** and **compatibility** of the proposal with home entertainment and computer equipement that consumers have already bought and will want to buy.
- Consider the **impact on innovation and on computing technologies,** and particularly whether a precedent is being set for government involvement in setting standards.
- Estimate the **cost** to consumers and other users of the new devices that may incorporate this standard.
- Fairly appraise the **effectiveness** of such a standard.
- Identify **alternatives** that may serve copyright and consumer interests.

As we recommend below, the Committee is now in a position to encourage broader dialog with consumer groups and other stakeholders about these impacts.

II. COMPATIBILITY, CONSUMER INCONVENIENCE AND FAIR USE

The Report does not fully address the potential inconvenience and disappointment that implementation could visit upon consumers. In fairness, it would have been difficult for the Report as conceived to discuss fair use in detail. A copyright protection system should not deprive consumers of the ordinary, commonly accepted uses of their current products. People should not be expected to be required to go out and buy new products in order to conduct the legal activities they are currently able to conduct. And such a system should not limit innovation, especially innovation in rapidly evolving technologies such as the Internet.

- For example, if the proposal were implemented, could the Chairman record a show over the weekend at home and ask a staffer to watch it on Monday at work? Could the Chairman's staff record a DTV news show on which the Chairman appeared and send it electronically to the Chairman's district office, so he

[6] See Final Report of the Co-Chairs of the Broadcast Protection Discussion Subgroup to the Copy Protection Technical Working Group (hereafter "the Report") at Sec. 0.1.

could watch it there? Could the staffer burn a news program onto a CD and give it to the Chairman to watch on his laptop computer in an airport?

- Today, a consumer can record a DTV show with her DTV-equipped computer on a recordable DVD, then watch it at night in her bedroom on a popular DVD player purchased years ago. She could also bring it to the home of a friend or family member and watch the show there. Will these instances of "fair use" be curtailed under the BPDG proposal?
- Is legacy equipment protected? That is, will consumers be able to get full use of their old TVs and VCRs? Will enforcement of the Requirements Document limit consumers' use of equipment they already own?
- To what extent will compliance with the Report conflict with reasonable consumer expectations about fair use, such as the ability to time-shift, play a recording on multiple devices, play a recording on device either inside the home or outside the home, etc?

In terms of future equipment, although a variety of different Authorized Technologies for output and recording would be permitted under the Requirements Document, it is not clear how they would interoperate. Issues that need clarification include:

- How will devices with different Authorized Technologies interoperate, e.g., a DTCP-equipped DTV set-top receiver and an OCPS recorder? (See proposed Authorized Technologies.)[7]
- Will there be converters between different Authorized Technologies and, if so, what will they cost?

Congress ought to have a clear understanding of whether existing devices owned by consumers will work under the proposal, whether reasonable expected fair uses will be allowed, and whether technologies will interoperate. Overall, how much work needs to be done to understand how consumers will be educated as to these new requirements when, throughout the history of commercial television, interoperability and integration of television systems has been relatively seamless?[8]

III. IMPACTS ON OTHER TECHNOLOGIES

In order to fully protect DTV content across a range of future platforms, the BPDG plan necessarily impacts a broad variety of devices that might someday receive and distribute DTV broadcasts. Importantly, these include general-purpose computers and the Internet.

For example, a PC today could receive DTV signals and store them on its hard drive for playing, manipulation, and redistribution. Under the BPDG plan, computers would have to guarantee that such files were treated differently from the other files a user creates.

- What impact will implementation of the Report have on general-purpose computers? Will compliance require substantial changes to computing architecture, or diminish future innovation in technologies not contemplated in the BPDG model?
- What impact would compliance have on open source systems?
- Will the report set a precedent for government mandates of security standards with broad applicability, and with ramifications for future Internet development? The Internet's growth and development took place with relatively few government constraints—especially technical constraints. The result of that policy choice has been unexpected growth in applications of the Internet, including the World Wide Web, and rapid adoption of Internet technologies and applications by the public.

The Committee ought to have a clear understanding of whether substantial changes are contemplated in computing architecture, and whether the BPDG proposal would be viewed as setting a precedent for government involvement in setting computing standards.

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[7] Under the Requirements document, the only permitted digital outputs and recording technologies are those that the "enforcement body" (possibly the FCC) places on Table A. DTPC and OCPS are two mutually incompatible protection technologies proposed for inclusion on Table A. If both technologies are ultimately included in Table A, this raises the prospect of interoperability problems. These problems would only multiply as additional incompatible technologies were approved for Table A.

[8] We note that the FCC, one of the possible enforcement bodies for the proposed broadcast-flag scheme, historically has been concerned with promoting ease of use and ease of integration for television viewers purchasing new equipment or maintaining legacy equipment.

IV. EFFECTIVENESS

Any Congressional action on the BPDG report would appear to have two primary goals: protection of DTV content from certain illegal copying and redistribution, and accelerating the rollout of DTV by providing such protections.

To what extent will the BPDG proposal diminish the copyright infringement in question? Implementation will no doubt deter many users of compliant equipment from massive redistribution of DTV content. But questions remain about the extent to which illegal copying will be curtailed.

Analog Hole: Section 2.5 of the Report states that it does not address the so-called "analog hole"—the copying of DTV content after it is sent to an analog component. If the BPDG proposal is adopted, illegal copying could continue through the analog hole.

- In terms of quality, is there really a significant difference in quality between DTV content captured from digital receivers and DTV content captured from analog receivers and redigitized? (Generally speaking, the quality degradation of single digital-to-analog-to-digital conversion is unlikely to be to significant, and the degradation in quality of content currently traded on the Internet typically occurs not in the copying, but in the compression necessary for most Internet transmissions, whether captured from analog or from digital sources.)

The Report and the Requirements Document also do not mention peer-to-peer networking, one of the key problems listed in the studios' April and June reports to Congress.[9]

What precedent does the broadcast flag set for the peer-to-peer problem? Will the content providers be pushing to close all the holes and address all these issues before releasing DTV content?

Legacy products will also diminish the effectiveness of the proposal:

- DTV receivers sold today do not have restricted outputs, and will not unless some protection system is implemented in coming years. Millions of unprotected legacy receivers—all allowing digital redistribution—will be in the public's hands before this system can be implemented.
- Within a few years it will be possible to do software-based demodulation of the DTV signal on a PC, potentially allowing millions to access DTV signals on computers without the broadcast flag requirements.

Together, these factors would appear to leave substantial possibilities for copying of protected DTV content, including allowing bad actors to obtain content and then redistribute it globally or over P2P networks. Congress should have a clear understanding of whether efforts to address these issues will be sought—either by negating the use of legacy products already owned by consumers, or by somehow retroactively addressing issues of the "analog" hole.

Security: A related question is the security of the proposal. A proposal is less desirable if it can be easily defeated, especially if it can be defeated in ways that allow large scale violations while the average consumer is still inconvenienced.

Even on systems for which the Report is implemented, computer security experts commonly believe that most copy protection systems can and will be broken, and that 'marking'-based systems such as the broadcast flag are comparatively weak, in general. Footnote 3 in the Report states that "a more effectual technical and enforcement solution would be to encrypt DTV content at the source (i.e., the transmitter)." We are not suggesting that encryption would be more desirable, but footnote 3 reminds us that a system that fails to protect content adequately at the source is fundamentally vulnerable. Moreover, current DTV receivers do not have protected outputs today and will not in the future—unless some additional protection system is retrofitted for those legacy devices some years from now. By then, it is possible that millions of unprotected DTV receivers will be in the public's hands.[10] Accordingly, the Committee should consider the following:

- How will this system prevent unauthorized redistribution of content when: potentially millions of unprotected DTV receivers will be in the public's hands before

[9] "Content Protection Status Report," filed by the Motion Picture Association of America with the Senate Judiciary Committee, April 25, 2002. The same point was made in the MPAA's subsequent "Content Protection Status Report II," submitted in June.

[10] It is hoped that ATSC will improve the 8VSB signal and that many more broadcasters will be transmitting full power DTV signals in the next few years, spurring sales of DTV receivers.

this system can be implemented[11] and, within a few years it will be possible to do software-based demodulation of the unprotected DTV signal in PCs?[12]

- How else can the flag be defeated or evaded?

Impact on DTV Rollout: The Committee should explore in greater depth the premise behind the broadcast flag proposal—that DTV adoption will increase as high-value programming is put on DTV, and that this will happen once content is protected from unauthorized redistribution through systems such as that proposed by the BPDG.[13] The Committee should pursue the following question related to this premise:

Can it be shown that the BPDG scheme will deter enough illegal copying to expedite the deployment of DTV, given that a significant amount of illegal copying will occur even if the proposal is implemented?

- Allowing for an FCC administrative process required by law and sufficient time for implementation, it seems unlikely that the first "compliant" and secure devices would be distributed before mid-2006.[14] Will adoption of the Report result in additional DTV content being released in time to aid in a transition by 2006?

The key question seems to be this:

- Does the Committee feel it has adequate assurances that adoption of the Report proposal via law and regulations will result in the timely release of DTV content that will impact the rollout of DTV, even if the analog hole and peer-to-peer issues have not been resolved?

The answers to these questions could help the Committee evaluate the extent to which the BPDG proposal would be effective in moving this nation to transition from analog over-the-air television to digital television. The consumer benefits from this transition (not just in better pictures, but also from the release of spectrum for important public-safety, technological, and economic benefits) could be significant. If, however, the BPDG proposal will not result in a significantly accelerated DTV transition, this casts the proposal in a different light.

IV. WHAT IS THE MONETARY COST TO CONSUMERS?

The Committee should evaluate the impact of the BPDG proposal in terms of the additional expense it may entail for the 107 million American TV households, both in terms of the cost of DTV products and in terms of the costs of other digital products. Those costs may be felt by consumers both directly (in terms of the need to buy new products) and indirectly (in terms of various ways increased product-development costs may be passed along to consumers). These costs may well delay rather than expedite the transition to DTV. For these reasons, the Committee should ask the commercial stakeholders to provide cost estimates for implementing the solution evaluated in the Report. These questions here are for the consumer-electronics companies (CE) and information-technology companies (IT).

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[11] It seems possible that, subsequent to an announcement that future DTV receivers will have built-in limitations in compliance with this proposal, consumers may rush out to purchase the remaining stock of non-compliant DTV devices.

[12] At least one programmer has created an ATSC-compliant software demodulator that ran on a dual processor PC using two Athelon 1900-Megahertz CPUs. Today's Pentium high-end CPU runs at 2.53 GHz. Assuming the continued applicability of Moore's Law, we should see a 5 GHz CPU in consumer PCs within 18 months—sufficient to accomplish "soft" demodulation of an ATSC signal.

[13] It is important to note that most experts cite numerous reasons for the slow rollout and adoption of DTV. At a recent Cato Institute Conference, Richard E. Wiley, former Chair of the FCC's Advisory Committee on DTV, listed seven "hurdles" other than the lack of copy protection, including: 1) the debate over "progressive" versus "interlaced" scanning; 2) the problems with VSB modulation standard and the effort to replace it with the COFDM standard; 3) the lack of DTV monitors that also include DTV receivers; 4) the lack leadership of the broadcast networks in providing HDTV programming, including programming for which there are minimal copy protection concerns (e.g., sporting events); 5) the inability of cable set-top boxes to pass through HDTV programming and the lack of cable ready digital television receivers; 6) the FCC's decision not to require cable systems to carry both analog and digital broadcast stations during the transition period, along with the related decision to require cable systems only to carry a digital broadcaster's "primary video" program stream; and 7) the lack of consumer awareness about the transition and its ramifications. Remarks of Richard E. Wiley, "A Progress Report on the DTV Transition," Cato Institute, May 1, 2002, found at http://www.cato.org/events/020501pf.html.

[14] This assumes legislation sometime in 2002, 18 months to two years for a notice of proposed rulemaking and complex rulemaking proceeding (assuming no legal challenge in the Federal Court of Appeals), and two years to design, build and deploy products following promulgation of the rule. "Such products may also have to be designed to include a technological measure, such as watermark-recognition technology, aimed at blocking 'the analog hole'—see the Motion Picture Association of America's "Content Status Report II," Sec. 1.2, June 26, 2002.

- Section X-3 of the Requirements Document details a number of requirements for protecting Unscreened DTV data. Section X-4 provides similar requirements for protecting Marked Content.[15] The Committee should seek:
  - 4• a block diagram for implementing the Section X-3 and X-4 requirements for protection in a typical DTV device (e.g., a set top DTV receiver, receiver in a DTV set, or DTV receiver card in a PC).
  - 4• an estimate of the cost to engineer such protection in a typical product family.
  - 4• the total estimated engineering cost for such protection for all company's current and planned DTV products.
  - 4• An estimate of the cost that will be passed on to consumers in order to comply with Sections X-3 and X-4.[16]
- In addition, we understand that technologies proposed as Authorized Technologies are governed by license agreements and require the payment of licensing fees both by implementers and Studios. (See Report Section 6.6.1 and Tabs F-1, H-1, and H-2.) The Committee should seek answers to the following questions regarding licensing fees and related costs:

What are the estimated annual costs of license fees for DTV product lines assuming adoption of the BPDG-evaluated technology and Authorized Technologies?

- What other costs associated with adopting and utilizing Authorized Technologies are not included in the questions above?

V. WHAT ARE THE ALTERNATIVES?

The Report is silent with respect to alternatives.[17] Value-added, competitively priced video distribution systems may well stem the need to deploy a complex broadcast protection system. With an eye to preserving trade-secret and other confidential information, we suggest that the Committee ask MPAA to confidentially survey its members and answer the following questions as completely as possible without revealing individual company plans:

- Are Studios planning to roll out digital distribution systems on the Internet and elsewhere, apart from their DTV plans?
- Will these systems include content slated to be protected under the system contemplated by the Requirements Document?
- If few digital distribution launches are planned, why not?

VI. CONCLUSION

More dialog must be had with stakeholders, including consumer representatives, to determine the costs and inconvenience of the proposed broadcast flag system, and to determine whether it can be structured in such a way that responds to consumer interest in flexibility and backwards compatibility. Such a dialog will contribute to another crucial goal: evaluating the Report within a broader context. Some of these larger questions include: what is the precedent for the computer and the Internet; how could a broadcast flag evolve in ways that more deeply constrain consumer control; how does the broadcast flag fit with other DRM ideas, and what are the reasonable alternatives for protecting copyright interests, both in terms of business models and in terms of technology?

In summary, then, we seek to raise the following three sets of issues regarding the BPDG proposal:

- What impact will it have on consumers' ability to use their existing and future electronic equipment in ways consistent with copyright protection, including

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[15] We understand the term "Marked Content" to refer generically to content that has been marked with the broadcast flag, or with any other technological mark designed to function similarly. See, e.g., the Report Sections 4.6 and 4.7.

[16] We understand that Section X-3 is not complete, but these questions can be answered on the basis of company 's best estimate based on how it believes Section X-3 will be finalized.

[17] There are, we believe, already alternative protected digital delivery systems that could efficiently deliver high-quality digital video content to consumers through channels other than digital broadcasting, reserving the broadcast channel for "ordinary" digital-television content.. In addition, scheduled secure content-delivery systems such as Microsoft's "Palladium" initiative may reach consumers before the "compliant" products called for in this proposal do so. Without either endorsing Palladium or assuming its effectiveness, we note that, as described in recent reports, the Palladium initiative has the potential to deliver the kind of protection of content sought by the Content companies, but without requiring potentially expensive and slow-to-implement government-imposed technology mandates. Our team of technical experts is divided on the question of whether Palladium will deliver all the protection it promises, but unanimous in believing it more likely to be effective than the broadcast-flag schemes under consideration here.

time shifting and moving legally acquired content from one device to another as they go about their daily lives? To what extent will it affect the development and deployment of new consumer and information technologies?

- There needs to be a realistic assessment of the cost-benefits: (a) how effective will the measure be at solving an identified and documented problem compared with (b) the costs in terms of product costs, limits on legitimate consumer activity, and convenience?
- Finally, from a consumer perspective, what assurance is there that the proposal, if implemented, would lead to the substantial release of digital content and the greater availability and affordability of DTV?

We hope that the Committee will ask the above questions and carefully consider whether enough is yet known about the possible impacts on consumers of implementing the proposal described in the Report. We do not stand in opposition to the principle of content protection for digital television, and we embrace the general principle of the need to protect copyright in the digital age. But we also believe that Congress, in its factfinding and legislative role, must vet and consider the impact on consumers of any content-protection system imposed by regulation. We stand ready to help address these questions.

Mr. UPTON. Thank you all very much for your testimony, particularly in advance, as a number of us were able to read it last night and work on some questions as well.

Mr. Willner, as we debate continually the issue of multicast must-carry, I am sometimes reminded of the riddle, which weighs more, a pound of feathers or a pound of bowling balls, and before you get nervous and try to figure out which one is different, of course they weigh the same. And putting aside——

Mr. WILLNER. I got it.

Mr. UPTON. I know you would have had that answer.

But putting aside those constitutional questions, if a cable company is in fact willing to carry six megahertz of the broadcaster spectrum, if it is a high-definition video stream, then why shouldn't it follow that the cable company shouldn't have to carry six megahertz of multicast spectrum, because isn't six megahertz really six megahertz?

Mr. WILLNER. Well, I don't think that must-carry was ever intended to be a frequency management tool. It was really a rule that was put into place to protect the interests of local broadcasters, which, frankly, I support and I think the entire industry supports. I think local broadcasters do a terrific job in providing news, information and entertainment to local communities throughout America. We live in an entirely different world today, and these networks that we are building, despite the study that I have read portions of that 86 percent of the country's cable systems are 750 megahertz, well, let me tell you about a 750-megahertz system in Louisville, Kentucky that we own that has about 2 or 3 channels left, because we are doing all the things that Congress intended for us to do when we built that system and started delivering analog cable, interactive digital cable, video-on-demand, high-speed access to the Internet and local telephone service—one of the markets in the United States that now has competition in the local telephony business. These all take tremendous amounts of bandwidth.

And as we convert into the digital world, we have to remember the intent of must-carry was to protect local broadcasters. I agree with that intention, and the industry supports continuing to protect the local broadcasters' primary signal. What they want to do with the additional streams is to create new businesses, and I don't think that our cable networks should be disadvantaged against

broadcasters because they get a government-granted right to be carried on cable systems without accountability on content to our consumers.

Mr. UPTON. Mr. Fiorile, would you like to respond to that?

Mr. FIORILE. Yes, thank you. What the ability of high definition will mean to consumers, for instance, by means of example, is this past March, through our CBS television network, we were able to provide during the playoffs multicasting of regional games on our high-definition signal. Of course, it culminated with the Final Four which was then broadcast in high definition, but because those multicast signals were not available on cable carriage, our cable customers were denied the ability to pick and choose which games they wanted to see. And, frankly, they are not new businesses. We didn't make any money on those carriages. That was provided more than anything else as a service to viewers. That is the interest in multicasting. We provide in our market of Indianapolis a 24-hour weather channel on one of the high-definition multicast positions. That, too, is not available to a good part of the market.

Mr. UPTON. Let me just ask you about—you know, I——

Mr. WILLNER. Mr. Chairman, can I just say one thing?

Mr. UPTON. Go ahead.

Mr. WILLNER. That very example that was used by Mr. Fiorile, last year, not this past year, but last year , the cable operators in the Indianapolis market, which we are one of them, carried those signals. And this year when we went to them and asked if we could carry them again, we were denied the carriage.

Mr. FIORILE. We don't own the CBS affiliate in Indianapolis, so I can't comment. It was not on in——

Mr. UPTON. But you wish you did, right?

Mr. Wright, any of your stations, do they have any business plans to do multicasting at all?

Mr. WRIGHT. I think our focus, Mr. Chairman, at the present time is on HDTV. And as one of those few people that can remember the discussions of how this all came about, apropos to your last question, there were many people from all points of view that thought that in that six megahertz, that six megahertz is six megahertz discussion, that digital offered an opportunity for multicasting which in some respects would be more attractive to consumers than high definition. And the thought was that all uses should be considered under the theory that these are essentially free offerings and that the consumer with a digital set would then, if one service or one channel chose to have weather and have local sports or high school sports and things of that nature in addition to their regular format, then that might prove to be quite popular. Whereas another might decide, in another time period perhaps, that it could all be done in high definition, and that might be more attractive.

I think we still feel that—we would feel that same way, but at this stage most of our emphasis is on getting ready for the high definition because it requires the most cost and it has the most change of equipment and is clearly the most difficult one to wrestle with. But I can make a case for all of those. They all have features that in certain of our stations they might opt, for instance, in the

daytime to go local channels, which really cover things that we don't have the room to cover today.

Mr. UPTON. I know my time is expired and what is good for the goose is good for the gander, so I will yield next for questioning to Mr. Stupak from the great State of Michigan.

Mr. STUPAK. Thanks, Mr. Chairman, and thanks to everyone on our panel. We have been back and forth, a lot going on today, but I appreciate your patience as we look at this very important issue. Mr. Lewis, if I may, consumers—and it was brought up in my opening and also in some of the other opening statements—consumers have made a substantial investment when they purchased the new integrated DTVs. The initial generation of those televisions will not have that two-way capacity. As I understand it, it is for this reason that the discussion draft contains a provision for manufacturers to include digital connectors. Having a digital connector on these DTVs would allow consumers to take advantage of interactive television services, such as those that cable may carry—but that won't happen until the next generation of two-way televisions is developed.

Are consumer electronic manufacturers willing to put in digital connectors on all integrated DTVs for consumer use?

Mr. LEWIS. Well, I think what we are saying, and we don't speak necessarily for the industry, but from Zenith's perspective what we are saying is that we don't feel it necessarily makes sense to put them on all integrated DTVs. Just as today, in a kitchen or in a bathroom application you wouldn't attach to a set-top box to that. You might want to watch just over-the-air television, catch the news while you are cooking dinner, those types of things.

Mr. STUPAK. But wouldn't you want to give the consumer more options? I mean what you would buy today then is outdated in, what, two, 3 years?

Mr. LEWIS. Well, certainly, over the air we would expect to go on for the next 50 years, as analog has. What we are saying is there will be range of options. So a 13-inch set, a high-end set may have those digital connectors, and we would include them. A low-end one where it is all price and all they want to do is receive an over-the-air signal or a digital cable signal, then in that case it may not require a connector.

Mr. STUPAK. But even the one that may be in the kitchen or wherever it may be, some of the options available then would be denied. I just think it would better that you include it right now no matter what the size of the set is. Let the consumer make that decision.

Mr. LEWIS. Well, I guess we would agree with you, let the consumer make the decision. If we put out two into the marketplace and one has the connector and one doesn't and they start to buy all the ones with the connector and they don't buy it without, then quickly that model would be dropped.

Mr. STUPAK. Yes, but even in my district, I mean we don't have a lot of digital up there, but they are always saying, "I am going to skip this generation and wait for the next one so I have all the connectors." Why buy one when it is going to be obsolete in a year or 2? We would rather wait that year or 2, and I think it is delay-

ing the deployment of digital. I guess that is where I am coming from.

Mr. LEWIS. I understand. Well, certainly, anything that you would buy today is a higher end set and probably would have those connectors.

Mr. STUPAK. Okay. Mr. Gleason, as I mentioned in my opening, I appreciate the efforts of the ACA to serve smaller, more rural markets, such as those in my district. And you noted that you support legislation to speed the transition so long as the legislation accommodates the different circumstances and cost structures in smaller markets. So my question would be what changes would you make in the discussion draft in order to provide such accommodations?

Mr. GLEASON. Well, I really think that we come from the perspective that the cost structures in our kinds of cable systems, those being cable systems largely less than 2,010 or 1,010——

Mr. UPTON. I know this is a TV-ready room, so we have got to use the mikes, even though we can hear you.

Mr. GLEASON. Through the high-tech nature of all this.

Mr. UPTON. The people in Michigan may not hear you.

Mr. GLEASON. Most of our member companies are serving cable systems that serve far fewer than 1,010 customers on a head-in. And our concern, obviously, is that the DTV implementation on a cable system with 100,010 customers is relatively the same as on a smaller system. And I don't know that I have the answer today. I think that we are working within our group, our member companies don't have teams of engineers, but we are working with our board to have people work with the Society of Cable Television Engineers, we have worked with the NAB Standards Committee to come up with solutions that make sense for small systems as well.

But I guess our point is that we want to caution everyone to be cognizant that one size doesn't fit all here and the DTV implementation has got to be affordable in rural areas. And if we speed it too quickly, what will happen is we won't be able to afford or we won't be able to go get the money from our local banker to launch those new products or services because we can't make a case of a payback.

Mr. STUPAK. Thanks. Mr. Wright, I also mentioned in my opening about the analog hole, if you will, and I understand that dealing with the analog hole is very important to the broadcasters. Could you comment on the draft bill's provision on this issue or any other proposals that you or the broadcasters would support in this area with the analog?

Mr. WRIGHT. Are you referring to the termination of the analog service? I think that can be done if it is really—but we all have to really work very hard to do that, and I am not so sure that the price there may be so great for everybody, Congress included, because it is going to require legislation, it is going to require a lot of things that may be very difficult to do. I don't think realistically we can afford to end up in a situation where we have thousands if not millions of people who are going to be disenfranchised on a given date and then told that they have to buy a television set at a particular cost, no matter what it is, just because of some legislation. They are just never going to get that. So the only way that

I think you can do that is you have to have a really parallel track going on for quite some time where there is pressure on everybody. There is pressure on the cable broadcaster to put out programming that maybe nobody is watching or nobody can. There is pressure on the cable operator to make sure that programming gets on the cable system. There is pressure on the satellite operator to get that programming on. There is pressure on the consumer electronics companies to get the devices in the homes that are compatible early enough. There is pressure to be able to buy a tuner in a television and not just from a cable company from the top so that people can go either way. All that has to be done very early now, and it isn't probably going to happen naturally. Although I would say that the development of this is happening pretty quickly given historical standards of VCRs and things like that, digital television is not out of pace with other historical electronics. But if we are going to try to make a deadline of 2006, we have got to go about it all differently, and that is going to be, I think, a big strain on everybody, but that could be done.

Mr. STUPAK. So would you go—the chairman is gaveling me, I will catch you later.

Mr. UPTON. I am told the opening statements downstairs are going to be at least an hour, so we really have until 3 o'clock, not 2 o'clock, so we will maybe get to a second round. Mr. Fossella.

Mr. FOSSELLA. Thank you. Ms. Bradshaw, with respect to the public safety community, can you confirm for us if in fact there is a need for additional spectrum for public safety? And if so, is the 24 megahertz that will be provided from the transition enough or is the actual need potentially even greater?

Ms. BRADSHAW. I can confirm the need for additional spectrum, especially with the events that are under the auspices of life, safety and health in communities. We are a consumer product as well on the public safety side, and we have people that are depending upon us. This spectrum that we are talking about here would greatly contribute to the necessary needs of public safety today. Would it be enough? It depends on the continued demand that public safety has and spectrum being a very viable commodity and a very important resource. So I can answer part of the question, not all of the question.

Mr. FOSSELLA. And what are the real-life implications if that is not deemed to be sufficient or more is needed?

Ms. BRADSHAW. The real-life implications aren't just on activities like September 11. The real-life implications are like what is happening in southern California today with a fire in Angelos National Forest where we have several hundred homes that have been threatened and 2,010 fire fighters on the scene that do no have the ability to effectively communicate. Those are the real-world today activities that are far beyond the September 11 or the terrorist attacks that this Nation faces as well.

Mr. FOSSELLA. Well, I am going to ask you two final questions, and you can answer them both as you see fit. In terms of interference issues between public safety and other services, the 800 megahertz band and the congestion, would the cleared spectrum of the 700-megahertz ban help to open the door for the generation of public safety communication services. And as a result, would that

allow for those systems to be developed interoperable from day one and to limit interference?

Ms. BRADSHAW. The answer is yes. It is important. Some of the designs of the system date back many years, and these are mission critical systems that are dependent upon the ability to be redundant, to be utilized when absolutely necessary, to be reliable, to be secure, and the answer is, yes, we are looking for the ability, for Public Safety to be able to talk to each other, and some of these things make those solutions possible.

Mr. FOSSELLA. And, again, in layman's terms, how do you characterize or how would you characterize what it means potentially to the human life or public safety if this were to proceed as we would like as opposed to what is in place today?

Ms. BRADSHAW. What it means to human life is on both sides. It is on the people who are depending on emergency response and it is dependent also on those emergency responders for police, fire and medical.

Mr. FOSSELLA. Thank you, Mr. Chairman.

Mr. UPTON. Mr. Boucher.

Mr. BOUCHER. Well, thank you very much, Mr. Chairman. I want to express my appreciation to this panel of witnesses for being here today and providing very helpful testimony to us on this set of challenging issues on which I think we are making substantial progress with the draft put forward by Chairman Tauzin and others.

Mr. McCollough, I would like to ask you a couple of questions about several provisions in the staff draft. I am somewhat troubled by the provision that says that after July 1, 2005 new digital devices could not have analog outputs. What do you think the practical effect of that provision would be on consumers who own devices today?

Mr. MCCOLLOUGH. I think it is difficult to talk about analog outputs as one thing. There are a number of analog outputs. I believe the issue of greater concern of the content owners is high quality analog outputs, typically here referred to as component analog outputs, as opposed to the standard RCA that has been in use for years driving from a VCR to the television set. Looking at the draft, we couldn't tell whether they are referring to just component or the entire analog group. It is clearly problematic if you were to turn off all analog outputs and have those sets. You wouldn't be able to get a DVD player, VCR and so forth or even a tuner to drive your existing displays of which a lot of folks have many.

So I think for starters we would have to understand the real definition. Is this just component, which will matter less to the 13-inch TV we were talking about in the kitchen or some of the others that were small sizes, or is this all analog outputs?

Mr. BOUCHER. The language is pretty straightforward. It says no analog outputs may appear in new devices manufactured after this July 1, 2005 date. It doesn't say component analog outputs, it says all analog outputs. So let me ask the following question really in two levels. Let us assume the language means what it says and it really is all analog outputs. Would that have the effect of essentially stranding the 300 million or so television sets, VCRs, and computers today, given the fact that the only means of getting a

signal that is viewable from those devices to the monitor is through an analog connection? Would they, in effect, be stranded?

Mr. MCCOLLOUGH. Ultimately, yes, sir, that would in fact be the case.

Mr. BOUCHER. Let us assume that the definition is interpreted as only applying to component analog outputs. Is any equipment stranded in that version? And if so, what is it?

Mr. MCCOLLOUGH. The equipment in that case that would be made less functional would be some of the digital-ready sets that are being sold today, the earlier versions of digital-ready sets that the best connector on the back was a component video connector.

Mr. BOUCHER. Do you have any estimate of how many sets that meet that description are in the market today?

Mr. MCCOLLOUGH. I would be guessing, but I would suggest 2 or 3 million probably at this point.

Mr. BOUCHER. So either way, no matter how it is interpreted, we wind up stranding a lot of existing equipment.

Mr. MCCOLLOUGH. Yes. If it——

Mr. BOUCHER. This provision needs some more work, doesn't it?

Mr. MCCOLLOUGH. Correct. No, absolutely it does. As we tried to point that out, that I don't think really turning off analog outputs is a real option.

Mr. BOUCHER. Okay. Another question that I have for you relates to electronic program guides. Do you believe it is important that device manufacturers and retailers be able to make and sell appliances that have the same access to the electronic schedule of programs that is available to people who opt to buy a cable set-top box?

Mr. MCCOLLOUGH. Sure. Access to an electronic program guide is critical. We talked a lot about simplicity. We have to make things easy for the customer, because in the absence of simplicity inaction is what happens. And then when you are dealing, particularly today, you are not talking about 3 or 4 channels, you are talking about hundreds of channels, and it is absolutely critical that the customer have access to an easy way to tune to the channel of their choice. The only way to do that is through a great electronic program guide.

Mr. BOUCHER. Now, there is no provision in the legislation that addresses this need. I take it that you and those on behalf of whom you are testifying would urge that a provision assuring that manufacturers and retailers have the opportunity to market these electronic program guides be included in subsequent revisions.

Mr. MCCOLLOUGH. That is correct, and that is also why we tried to stress the need to have one set of rules. To the extent that you have the incumbent operator deciding on the rules for new entrants and not following those rules themselves, invariably you are going to have things like EPG come up along the way. We will just never be able to think of all the things that we are going to need today. It just doesn't happen. You will continue to evolve. And so it is critical that we have EPG, but it is critical that we have one set of rules. If everybody is playing by the same set of rules, the chances for this kind of thing in the future is much diminished.

Mr. BOUCHER. All right. Mr. Kimmelman, I see you nodding your head. Would you care to put a period on this conversation?

Mr. KIMMELMAN. I totally agree with Mr. McCollough, and I would also say that in addition to looking at the number of sets that are out there today, even if you fix this analog language, you need to think about the ones that are out there next year and the following year and the following year before a mandate kicks in and consumers are continuing to buy better equipment which is not compliant yet with the ultimate standards in the legislation.

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

Mr. UPTON. Thank you. Mr. Walden.

Mr. WALDEN. Thank you very much, Mr. Chairman. I would like to continue to pursue this issue, because aren't what we are really telling consumers is if this deadline were put in effect and the year it is cutoff, if I had a storehouse of videotapes, would I be able to actually go get a new videotape player that produces analog outputs and connect in through my analog stereo system, through my analog speakers?

Mr. MCCOLLOUGH. We are assuming that if the legislation is passed and interpreted literally, that as of that date you wouldn't, and the devices you owned prior to that date would continue to operate but that you wouldn't be able to acquire new devices to take advantage of old content.

Mr. WALDEN. And so how long does the average video cassette player operate?

Mr. MCCOLLOUGH. I am not sure I know the useful life. Obviously, it depends on use, but they seem to hang around, like a lot of consumer electronics, for quite some time.

Mr. WALDEN. And flash 12 o'clock.

Mr. MCCOLLOUGH. They don't go away, they just get passed from room to room to room and then eventually to your kids.

Mr. WALDEN. Well, and I think that raises the other issue, if we are going to have set-top boxes to make these work in the future, we are looking at enormous costs for individuals, maybe $75 somebody said. But still if you have got a set in 4 or 5 rooms, then that is the only way you will be able to get the signals then, right? Is there a plan to do one box you could wire all the other sets?

Mr. MCCOLLOUGH. There is no plan I am aware of at this time to do that.

Mr. LEWIS. I think your question is a good one. The home networking issue is one that is intertwined with the copy protection issues. When you have one box and you try and have that one box as a central piece to distribute signals throughout the home, then a lot of these issues of how do we protect that distribution of content, how do we keep it within the home and we don't know that it is going outside of that. And so it is a complicated issue from that standpoint. I think, in summary, if the analog outputs are disabled in 2005, no one will be able to have new devices that will service those units. Anything that they have laying around the home would still work, but it would be a problem for consumers going forward with this installed base or legacy issues.

Mr. WALDEN. Be a problem for our landfills too if we have got to junk every TV that is out there, wouldn't it?

Ms. Corbi, I was intrigued by—you have a wonderful network, by the way. The Hallmark network is very professionally done. But as I listened to your testimony about the importance of the program

and all and your comments about must carriage for broadcast signals, they really aren't apples and apples, are they, what you do and what over-the-air broadcasters do, are they, programs, requirements?

Ms. CORBI. Programs are programs.

Mr. WALDEN. But you don't have a community interest standard requirement to serve the community you are in, correct?

Ms. CORBI. We don't have the community interest requirement; however, as a programmer who is looking to be successful has to serve the needs of the communities that we serve. And, therefore, we have taken it upon ourselves to provide 24 hours a day of family friendly programming to reach out——

Mr. WALDEN. Oh, I understand that. The programming is good. As I say, I am a fan, but there is a difference, isn't there, between over-the-air broadcasters and their requirement under Federal law to provide for emergency communication, for example, in the case of emergency. You don't have that requirement, do you?

Ms. CORBI. No, we don't have that requirement. And, actually, what I was saying in my statement is that broadcasters will continue to have the same must-carry rights that they have today. We are not arguing that. What we are saying is that those rights should not be expanded, because we have invested a significant amount of money, hundreds of millions of dollars, to provide what we believe is an alternative to viewers that is quality diverse programming. We don't have must-carry rights, we don't have——

Mr. WALDEN. Understand.

Ms. CORBI. [continuing] any other mandated right to carriage, nor do we have over-the-air opportunities for viewers to find our product. And so the——

Mr. WALDEN. You could if you invested over-the-air broadcast facilities, though.

Ms. CORBI. If we purchased an over-the-air broadcast station which that is a different business than the one that we are in.

Mr. WALDEN. Right.

Ms. CORBI. But we as a programming service our goal is to provide rich, quality programming to the consumer. So our goal is to then get that product to the consumer, and it is virtually impossible, because we are almost exclusively advertise supported, to launch a national service without reaching the major markets. And there is such pressure in the major markets from multiple must-carry requirements, there are 25 in Los Angeles, something like 23 in New York, and so that amount of space is already taken, plus the other requirements that the cable operators have. And so if there is a further impediment, if there is multicast must-carry, if there is dual must-carry, we are impeded from distributing our network and providing what has been very desirable to the public.

Mr. WALDEN. Can I ask just one more to Mr. Willner? The bandwidth capacity, the six megs, how much of that is consumed if broadcasters are broadcasting HDTV?

Mr. WILLNER. Well, there are different standards of how we can retransmit that. It could be three megahertz, it could two megahertz, but right now it is probably three.

Mr. WALDEN. About three.

Mr. WILLNER. Yes. But if I could also expand on your last question, just very briefly, cable operators have emergency override systems that go through all——

Mr. WALDEN. I am aware.

Mr. WILLNER. [continuing] the channels. So, you know, there is no issue as to whether or not people will get emergency messages.

The other issue, though, that you bring up is whether or not all of the digital signals that are being delivered by broadcasters are being delivered in order to provide the public service that broadcasters are charged to do. And just as from 95 percent of the broadcast days, for entertainment purposes and selling advertising, the multiple streams don't necessarily——

Mr. WALDEN. I understand that.

Mr. WILLNER. [continuing] have to fulfill any obligation to the public either.

Mr. WALDEN. I understand that. I was just trying to draw a distinction between pure programmers, who do a great job, and that they are not the same as broadcasters in terms of the requirements to serve their communities and their licensing obligations. There is a difference, and I think that is part of what underlies the issue of the transition and of must-carry. The issue of multiple must-carry is different, I understand that as well. But I don't want people to leave here thinking that the Hallmark network is the same as NBC or their affiliate and their local requirement within the community. Thank you, Mr. Chairman.

Mr. UPTON. Ms. Eshoo.

Ms. ESHOO. Thank you, Mr. Chairman, and thank you to all of our witnesses. It is a great panel—what time did we start, 10 this morning? Ten. Well, it is now 1:30. I have two questions that I am dying to ask, and that is why I have continued to come back so that I can ask them.

Harkening back to my opening statement about the yardstick I think that we end up measuring all of this by is what is good for the consumer. I would like to start with the consumer representative. I know you all represent them, but he is the one that has the gold paper crown on, Mr. Kimmelman. What do you think the cost will be to the consumer for transition? I mean give us a dollar figure. I don't know if you have looked at it that closely or done an analysis, but I am really curious at what you believe the cost will be to the consumer.

Mr. KIMMELMAN. Well, TV sets are not cheap, high-quality TV sets, at least, are not cheap. We are talking hundreds of dollars for each piece of equipment a consumer has invested in and thought they were getting a lot of television over, that may not work, or it may only work if you spend a few hundred dollars on some new interconnection device, some new set-top box, something that will connect to all the new digital equipment that marries up to this broadcast flag. You can't forget that it is hardware interconnected with software standards ostensibly to protect piracy.

Ms. ESHOO. I understand what they are going to be called on to invest in, what needs to be built into it, but what is the dollar figure, I mean just roughly for the average American that has a TV set?

Mr. KIMMELMAN. Consumers, on average, in their household have two to three television sets. Most everybody has a VCR, half of all households now have DVD players, half of all households have computers. We are talking about a transformation here that is thousands of dollars per household. Now, I don't want to exaggerate that. These are things that are valuable to people, these are things that they purchase periodically. But as pointed out before, they don't really throw them out, they go from one room to another room and they are utilized——

Ms. ESHOO. We all have a really old small one someplace.

Right?

Mr. KIMMELMAN. People want to hold—a survey shows people want to hold onto television sets 10 years. Now, they will buy a new one in the interim. Thirty million were sold last year or more. So there is a lot that people will spend anyway, but there is a danger of substantial incremental cost increase that has many, many zeros and commas by it and I think it is just incumbent on the industry to——

Ms. ESHOO. I have another question I want to ask, so I appreciate that. My next question is to Mr. Wright. I was going to ask if there was anyone that wanted to add anything to that, but I don't think I have the time. So given my investment of time today with you, I would like to ask Mr. Wright about your perspective on the issue of multicasting. I want to see if I have this right, all right. I think I do. My take on it, I don't think it is yours but I would like you to maybe more fully explain, put some meat on the bones about why you think we should guarantee you six to 10 digital cable channels in return for the one that cable companies are now currently mandated to carry.

I have to tell you that it seems a little preposterous to me. It seems out of whack because we gave you something. I mean it wasn't yours, you didn't buy it, you didn't pay for it. It was established by public policy, now moving into the place where we are trying to move to. I don't understand that position. Where does that come from? What is the rationale for it? I guess I am throwing you either a softball or hardball, but it seems preposterous to me, so you need to explain, at least to me, why you think this is good public policy, why you would have NBC 1, NBC 2, NBC 3, NBC 4, NBC 5, NBC 6. Why is that?

Mr. WRIGHT. It wasn't a gift. The analog spectrum disappears, so you had to have a place to put it, the programming. The programming occupied six megahertz. That is what an analog channel occupies, six megahertz, one channel, today.

Ms. ESHOO. I understand that part of it, but tell me how you would ally that where you are right now, which I think I heard in your testimony.

Mr. WRIGHT. The public policy issue was——

Ms. ESHOO. I don't want to talk about the past, I want to talk about now.

Mr. WRIGHT. Well, but you have to understand that, though. The channel—the space is the same amount of space. We are talking six megahertz is six megahertz, as the chairman said. In a digital world, you can transmit more programs in six megahertz. The thought was since these are free to the public that you could put

more channels of very specialized, probably very niche programming, local community programming in in addition to the larger channel, and you are occupying exactly the same spacing. That was the theory. It is to fill it with something that would be considered by the public to be exciting enough to want to go out and to buy a new television set, which is considerably more than the old analog set they have today. That is how it got into the discussion.

Ms. ESHOO. And do you think that the next logical step is the right to what the——

Mr. WRIGHT. It is exactly the same frequency that is occupied today, it is no larger than that. It just happens to be under the technology available you could produce more programming and display it in that same frequency.

Ms. ESHOO. Well, I have to say that I have a problem with that. It just doesn't transfer so tightly as you—I understand your position and why. I think if I were you, I might be proposing it too. But I think in terms of overall policy for the country and the interpretation of how one segments or queues up or follows into or flows into the next, there is a disconnect to me, and I don't——

Mr. WRIGHT. Well, the theory——

Ms. ESHOO. [continuing] think it is fair, I really don't.

Mr. WRIGHT. The theory would be that the revenues would probably be greatly smaller with the niche kinds of programming that would occupy that, and therefore the total benefit, economic, would probably be the same, but the service level would be much higher.

Ms. ESHOO. Does someone from the panel want to jump in? Yes, just quickly, though, because I think my time is almost up, or is it?

Mr. UPTON. It is past.

Mr. GLEASON. From the smaller cable operator's perspective again, the only thing I would add is our perspective is that the broadcasters are already getting multicast carriage through the retransmission consent negotiations, that for us to carry an NBC affiliate in Cape Gerardo, Paducah, Kentucky——

Ms. ESHOO. Can I—let me just jump in. Mr. Chairman, can I have 30 seconds just to throw this back? Why would I be interested in—I mean what is the merit of having six new CBS or NBC or ABC—I know it really sounds like I am picking on you, but what I am trying to do is to force you to come out with a broader, better answer to this, because what you have given so far I think really falls short.

Mr. WRIGHT. If I may, one of the things that we are trying to do right now is increase the penetration of digital television sets. One of the ways to get people to go out and buy HD television sets is to produce interesting programming and more programming and niche programming. The only way that this transition is going to come to fruition is if we are able to increase the number of digital sets that are in homes. One of the ways to do that is to provide all these services that are not now available. What broadcasters are asking for is once we are producing these programs is that they not get stopped at the bottleneck.

Ms. ESHOO. Yes. But I think you are superimposing what you think you want that that is really the appetite for the consumer, and I think they are two different things.

Anyway, I think my time is up, and I appreciate your frankness and I know you don't appreciate mine.

But you know what, after almost 3 hours, this is what it is. Thank you very much, all of you. Thank you. Thank you, Mr. Chairman.

Mr. UPTON. Mr. Bass.

Mr. BASS. Thank you very much, Mr. Chairman. Mr. Kimmelman, Ms. Bradshaw makes the case, at least for public safety, that there is a need to get the analog spectrum back for public use, and there are other reasons besides public safety why it was determined this needed to happen. And as you know, the only way it is going to happen is to get broadcasters out of it. So I guess the question is, isn't there ultimately a consumer need for this that would mitigate against your concerns in your testimony about cost?

Mr. KIMMELMAN. Well, I am all for making sure there is more spectrum for public safety. This is a congressional mistake——

Mr. BASS. For other reasons as well, we just have one example.

Mr. KIMMELMAN. Yes, I understand. And we are all for more competition to cable and others, as I mentioned before, we are not getting nearly enough, and new services. This is a congressional mistake of giving away all this spectrum for free to broadcasters hoping that they would do what they said they promised to do, high-definition television. Now we are hearing that maybe they need to multiplex and do a lot of other things in order to make it really more popular for consumers. They didn't deliver, and I think we dug a ditch, and the danger here is digging it deeper. That is the problem, how do you get out of the ditch.

I think they should be put under financial penalties for whatever timetables you want to establish in law for either converting or giving back. They can give us back the digital spectrum, they don't have to give us back the analog spectrum. It is the public spectrum that can be used for many purposes, as you point out. It is just a matter of putting them under the mandate and making it happen.

Mr. BASS. But they are required to turn it back isn't it by 2006?

Mr. KIMMELMAN. Only if 85 percent of consumers have bought the digital equipment, which we would love to have seen happen, but it is not happening. So something else has to happen.

Mr. BASS. Mr. Willner, agreeing that dual carriage is not necessarily a great idea—sorry, Mr. Wright—Chairman Powell's voluntary plan calls upon cable operators to carry the signals of at least five networks offering high definition or other value-added DTV services. I am concerned because this commitment could potentially be met without carrying any broadcaster's DTV signal. This seems completely out of sync with the goal of rapid DTV penetration, particularly given the amount of high-definition programming that is being offered or promised by the commercial broadcast networks and public broadcasters. Are you aware of any cable operator providing all of the broadcast DTV signals in the market, and can you give us any idea as to whether or not how many operators are carrying at least one broadcaster's DTV signal?

Mr. WILLNER. I don't have the numbers in my head and wasn't prepared for the question specifically as to how many numbers, but I will tell you that the cable industry was the first industry to sign

onto the Powell plan with the intention of carrying both broadcast and cable high-definition television signals in the spirit of the plan.

What we are missing from broadcasters across the board is what we got from the public broadcasters, and that is a plan. Come to us with a plan, show us what you want to do with the digital signals, and if they are consistent with the consumers in our markets, we are going to carry them, because our consumers will demand it, because we have competition and we need to have the most robust cable service available to compete against satellite, which currently has close to 20 million subscribers, and that is out of nowhere 5 years ago.

Mr. BASS. That is all I have, Mr. Chairman.

Mr. UPTON. Ms. McCarthy.

Ms. MCCARTHY. Thank you, Mr. Chairman, and thanks to the panel today for your patience. I am beginning to wonder about this mandate at all. I was just talking to Ms. Eshoo before she left. We are both wondering why we are trying to force digital on the consumer if it isn't something that they want by a date certain. But I really want to pursue this whole must-carry and multi issue that Anna raised, because in my community of Kansas City, KCPT, the public television station there, really wants to do more multicasting. They do Sesame Street in English and Spanish now, but at the same time they might be able to do a program for adults on healthy living. And so I worry.

I wonder if the gentlemen from the cable companies and industry would comment on this. If we have this must-carry and you are carrying NBC or ABC or whatever six times, what happens to our public TV stations who are performing a very important educational offering in our communities, and how will they be able to multicast their educational programs? And, Ms. Corbi, I very much appreciate your dilemma as a programmer for the Hallmark station, which is also, I believe, very educational, very family oriented, and you are welcome to weigh in on this as well. But I am really struggling with this because——

Mr. WILLNER. Well, you mentioned Kansas City. I believe that is Time Warner?

Ms. MCCARTHY. Yes.

Mr. WILLNER. Time Warner has a national deal with all the public broadcast stations, as we do at Insight, to carry the multicast signals of the public broadcasting stations. Why? Because they came to us, showed us their plan and it made a lot of sense to us so we are carrying it.

Ms. MCCARTHY. It is working.

Mr. WILLNER. That is right.

Ms. MCCARTHY. But what will happen is this bill goes through as it is drafted?

Mr. WILLNER. Well, I don't think it would have any impact on—negative impact on that agreement.

Ms. MCCARTHY. So they would still have all those channels and abilities to multicast.

Mr. WILLNER. Sure. We have an agreement with public broadcasting and we would adhere to it.

Ms. MCCARTHY. Well, that is very reassuring to me, because from what I was hearing with Ms. Eshoo's line of questioning after

you start having to carry all of the NBC and ABC and all of that what is left?

Mr. WILLNER. Look, the 750-megahertz cable plant has a limited amount of capacity. We have a plan over the long period of time to recapture what is taking up most of that 750 plant, which is the analog signals that we still carry, up to 550 megahertz, which leaves only 200 megahertz for all these digital services, which includes telephony and high-speed data and all those other businesses that were being encouraged to go into by the 1996 act. Eventually, we hope to recapture most of that 550 megahertz of analog. Once we get a lot of digital boxes out there and a lot of digital customers out there, we will be able to recapture some of those analog signals and convert them to digital, which is much more efficient. In the meantime, we have channel capacity problems already in 750 megahertz systems that are delivering the full bundle of voice, video and data, and even those that are not delivering voice have capacity problems.

Ms. MCCARTHY. Well, does anybody on this panel have a sense of what due date there should be so that you don't have a whole lot of angry people in America?

Mr. KIMMELMAN. Ms. McCarthy, I would just suggest that it is not the precisely the question of the date, it is the question of the structure of the mandate and who bears the financial risk, who bears the inconveniences, who bears the burden of making that transition work? I think you need to look very carefully at this draft and how much of a burden it places on consumers as opposed to the industry. It clearly has products it wants to get out and it thinks it can make money off of it. I think that is the problem.

On the point of multicasting here, I believe what you heard was there is an agreement with the cable company. That is not a legal mandate. There is an agreement to carry; it is not mandatory. There is nothing about whether NBC gets six channels that would prevent public television from getting six channels, as a matter of fact, you could mandate it for both, but the question here is should it be mandated at all in conjunction with must-carry? From our perspective, I think it would be appropriate for the committee to go back and look at the purposes of must-carry who needs to meet local concerns, local community interest and link up, whether it is one channel or multicasting or dual carriage, those local needs, with the legal mandate to carry.

Ms. MCCARTHY. I thank you. Thank you, Mr. Chairman.

Mr. UPTON. Thank you. Mr. Shimkus.

Mr. SHIMKUS. This has been a very informative hearing, and I thought maybe my questions would be resolved, but I think I just keep having more questions, and it is probably to the chagrin of many of you who have been into my office explaining this all, and it is still a tough thing. How many homes, on percentage, and let me ask Mr. Kimmelman and maybe other people can answer, how many homes have TVs in them? Is it virtually 100 percent?

Mr. KIMMELMAN. Virtually, yes.

Mr. SHIMKUS. Out of those, how many are connected via cable, direct satellite or broadband, percentage-wise?

Mr. KIMMELMAN. I think cable has about 70 percent of consumer households, satellite has upwards of 15 percent. A lot are connected

to—a lot have the capability of doing broadband; only a small percentage actually choose the service.

Mr. SHIMKUS. In those homes that have direct satellite, is there some overlap that are also cable?

Mr. WILLNER. Yes, yes.

Mr. SHIMKUS. So you can't just say 85 percent then are——

Mr. WILLNER. But it is a small amount.

Mr. SHIMKUS. So for my local—for the broadcasters, what is the percentage of people that are receiving free over-the-air broadcasts today?

Mr. WILLNER. It is probably about 15 percent exclusively, but it is probably another, I don't know, 60 or 60 more percent of people that use over-the-air televisions in their home, in other rooms or bedrooms or places. So it is hard to tell. I am going to guess another 60 on top of the 15.

Mr. SHIMKUS. Let me ask this question, and as all members were here for a while and then we have to go and then we come back, so it may have been asked, it may not have been asked. Is anyone on the panel questioning the free over-the-air broadcast system that this country has established over the years? Has anyone called that into question of whether that should be good public policy? Okay. By the silence, I am assuming that everyone agrees that free over-the-air broadcasts is still something that we, as a society, think is good public policy. Okay.

Now, if we make that assumption, what is the cost of providing free over-the-air broadcasts going digital versus what you do, Ms. Corbi in studio and then, in essence, getting your show to viewers through other mediums? Is there a significant financial challenge? Spectrum is—we always hear people quote that it is free, given by the government, and I have actually used that in other debates. But it does capital investment, otherwise spectrum is worth nothing. So there is a cost to people who are going to—the capital expense. So my question is the capita expense of free over-the-air broadcast going digital is expensive. How does that compare to, again, what has gone on elsewhere?

Ms. CORBI. Well, I can answer that as a programmer. There are two costs, and our costs are not exclusively in the production of content. Our costs are also to gain carriage. And so we have significant fees and launch fees that a local cable programmer like us or a national cable programmer would pay just to gain carriage. And so that amount of money would probably, and you can ask other members of the panel, exceed the cost of building out a facility yourself to distribute programming. And so we have significant launch fees, we have significant programs costs. However, if you are talking about must-carry and particularly multiple must-carry , if an operator moves our channel from analog to digital, we don't have a discussion about whether or not we maintain the same six megahertz that it took to carry our channel digital. It took an analog to carry to digital. And so while we have plans for a number of extensions of our brand that we think are high quality, that provide programming for children, that provide educational programming, and, ultimately, we would like to get to market, we are still lined up with every content provider to get those other products and services to the market.

Mr. WRIGHT. Maybe I could just offer a comment. In a digital world of transmission, everything has to be replaced, every single piece of transmission gear. In production, everything has to be replaced. So you are talking about——

Mr. SHIMKUS. Well, we know that because when we go on our TV shows that they have had to replace the fake wood background with real wood and real books, and that has happened from the big Gee Whiz studios here in DC to the little mom and pops in Quincy, Illinois, and that has been a cost. I am sorry.

Mr. WRIGHT. It is very expensive if you are on the production and the distribution end and the transmission end, which is what we do. And everybody has to deal with that. That is why you have to be careful. You are shoving this into a too narrow a time period here. It is complete replacement cost. In our particular case, it is approximately $400 million to go from production, transmission, distribution, to all of our activities. So yo certainly wouldn't want to do that overnight.

Mr. SHIMKUS. Right. And my time has expired and I have had enough. Thank you, Mr. Chairman.

Mr. UPTON. Mr. Green.

Mr. GREEN. Thank you, Mr. Chairman. Mr. Kimmelman, sometimes I wonder if our hearings are for us to ask questions or for you all to hear the opening statements, but the staff discussion draft requires broadcasters give back their analog spectrum by January 1, 2007, and I said in my opening statements, nd some of other members, a hard return date seems to be the will at least of this draft knowing that a lot of analog equipment will go dark on that date. Do you think it is the best interest of consumers to move the hard date back to give them more time to buy digital equipment at a lower price? Again, I am concerned that 4 years from now we won't have that price available to most of my constituents.

Mr. KIMMELMAN. Mr. Green, I am concerned that we have a chicken and egg problem today, and we may have one 4 years from now. That is why I think it is appropriate for the committee to look at a new model for trying to get analog spectrum back and moved to the digital age. I am not sure that date matters as much as all of the component parts that have to work together and who bears the risks and the cost. I think that is the entire thing. I mean the industry wants—here is an interesting question: We constantly hear about synergies in these industries, from Hollywood to networks, and we see mergers occur, to take advantage of that. I am not seeing any mergers here of the set manufacturers an the networks and the people who are going to make the boxes that are going to make all the old equipment work with all the new equipment. If there were economies of scale, if there were efficiencies there, maybe somebody would be doing this in the marketplace. All I am hearing is government should do it and consumers should pay. That strikes me as problematic.

Mr. LEWIS. May I make a comment?

Mr. GREEN. Sure.

Mr. LEWIS. I guess I would take a little bit of exception to that in the sense that we are coming out with lower cost boxes. Our box this year is—it is ATSC, our digital television reception is a stand-

alone box. It has analog outputs. It is $399 retail price. I know that still is expensive to some of your constituents——

Mr. GREEN. $399 per television?

Mr. LEWIS. Per television, and I know that is still expensive for some constituents, but we firmly believe, as we testified, that that is going to continue to drop and that as we move into the transition, when we get down to smaller and smaller screen sizes, those screen sizes will be comparable in price to the analog. In addition to that, I think that we, Zenith, is not in favor of turning off the analog outputs. We think that over time that can happen as we phaseout over a longer period, but in terms of the draft legislation, that was one of the issues that we did have with it.

Mr. GREEN. Okay. Anybody else on that question?

Mr. WRIGHT. That would not include high definition, that $399.

Mr. LEWIS. Actually, it would. It would output high def or standard definition.

Mr. GREEN. Okay. That was my next question, though, and I guess the cable companies—I know my own cable in Houston has a monthly charge that is fairly reasonable for folks, and I know most of constituents, thank goodness, don't have five TV sets that they want to hook up. But what would be the cost, is $399 fairly standard from——

Mr. LEWIS. Well, I think in the consumer—you are saying for a cable box?

Mr. GREEN. Yes.

Mr. LEWIS. I will let the cable guys answer.

Mr. GREEN. Somebody just purchased it. Because I assume you are paying $399 or——

Mr. WILLNER. No. We actually buy them in great quantities and are paying considerably less than $400 for a digital box.

Mr. GREEN. And then you are leasing them to your customers.

Mr. WILLNER. It is included in our digital package, right.

Mr. GREEN. Okay. What are some—on the option, and I have to admit my wife does this kind of stuff in our house—is there an option to buy?

Mr. WILLNER. Yes. The digital box is optional. The first level of digital service for our company is $7.95. It includes a box and a lot of the interactive services.

Mr. GREEN. So what if your customers just wanted to buy that instead of pay the rent for it?

Mr. WILLNER. Well, right now they are not available on stores because we don't have a standard inoperability agreement, which we are working on. Right now, we include it in the base level of digital.

Mr. GREEN. Okay. I guess maybe what it would be—does anybody have any idea how much these boxes are for? We have heard $399.

Mr. WILLNER. Well, I would like to tell you, but I am not sure I am allowed to. It is considerably less than $400, it is less than $300.

Mr. GREEN. So if somebody went to Best Buy or Circuit City or any of our high-volume——

Mr. WILLNER. Yes, I think—look, one of the problems is that the cost to consumers has been kept down by taking your equipment

through the cable operator because there is an 11.25 percent rate of return limitation in the 1992 act. So it almost becomes why bother selling it in the retail world when they have a higher expectation than 11 percent profit margin.

Mr. GREEN. And, frankly, after what has happened with the stock market, 11 percent is not too bad.

Mr. WILLNER. well, I agree with that too, I can assure you.

Mr. GREEN. Thank you, Mr. Chairman.

Mr. UPTON. Mr. Cox.

Mr. COX. Thank you, Mr. Chairman. Does anybody on the panel know of any TV maker that would continue to offer television sets with analog tuners for sale in the U.S. market even if there are no more analog broadcast signals?

Mr. LEWIS. No.

Mr. COX. Anybody think otherwise? That is a useful fact to elicit at this hearing. It addresses directly the question of whether we should legislate on the topic.

Mr. LEWIS. Sir, if I could just add to that.

Mr. COX. Sure.

Mr. LEWIS. Why wouldn't we want to? Well, a, there is no signal to receive but there are costs associated with that we haven't really spoken about in this transition is that people are paying that premium, quote, unquote, "premium," for an analog receiver today which we no is obsolete. I mean that is the hidden costs for them too. There are analog royalties, there is—I mean for everything in the digital world, there is a comparable price and thank goodness it is lower today for analog, but that is a cost that is being wasted, if you will, after the transition. So a quick transition is better transition, in our opinion.

Mr. COX. Let me ask a question just on behalf of myself as if, not the prototypical consumer, than a consumer. What if I want to use most of the capacity on my cable, running into my home or my business for Internet access, for telephone service and video phone call capability, should that be my choice? Does anybody disagree that I ought to have that choice?

Mr. KIMMELMAN. We think it should absolutely be your choice, and it is music to our ears that you want to make that the choice. Right now, most consumers can't pick what channels they get, let alone the allocation of bandwidth between video and broadband services.

Mr. COX. Does anybody want to deny me that choice?

Mr. WILLNER. Not you.

Mr. COX. My constituents perhaps? All right. Well, if that represents the view of the panel, we will move on.

Mr. Wright, or actually anybody who wishes to answer from what I would hope would be the broadcasters' perspective, you make very difficult decisions every day regarding the syndicated program content on your stations. The marketplace for syndicated programming is very competitive. If a supplier of a syndicated program came to you and said, "I want you to carry my program," and demanded time on your schedule but didn't give you any reason that you should carry it, told you nothing about the program, would you do it?

Mr. WRIGHT. It depends on who that person was.

Mr. COX. Well, it is not I. It is not the Federal Government. It is——

Mr. WRIGHT. A normal course, no. If we have a business relationship with that company and there were other things involved, perhaps.

Mr. COX. And I think that would be a fair decision on your part. You ought to have that choice in a competitive market. Isn't that what in this context some are asking us to do vis-a-vis cable operators? We wouldn't want to force this on broadcasters; why would we treat cable operators differently? Ms. Corbi?

Ms. CORBI. I would like to weigh in on that. Similar to your scenario where if you were local cable operator and wanted to carry new Internet services and the majority of your capacity for those kinds of services, you should be able to serve your community. It is not expanded must-carry that drives this digital transition. It is choice for the consumer and for every operator to decide what choices are appropriate for that local consumer? What we have seen is since in the last 10 years where there were 87 national networks 10 years ago and there are almost 300 now, people are stepping up like ours, and providing that kind of choice. And so if I sit down with Mr. Willner or if I sat down with you operating a system in another market, I need to plead my case based on—ultimately the consumer is hurt in the end if you are dictating what they are going to ultimately see. If the consumer has choice, if the cable operator chooses what is proper for their local community, then the consumer is ultimately served. And so our position has been just let the marketplace decide. We will all go to the table, we will all compete based on the merits of that syndicated program and the programming we provide or telephone service.

Mr. COX. I think Mr. Gleason wishes to add something?

Mr. GLEASON. Yes. If I can just add, I couldn't agree more, but we are put in a position today by the five major programming owners, of which Hallmark is not one of them, to carry many other channels just because we want to carry the primary channel. And, specifically, in retransmission in many cases to the issue of multicasting, we are already multicasting a number of channels right now through retransmission consent, because in order to get retransmission consent for one channel in one market, we had to launch their cable product in a whole other market. So I am not so sure that there isn't multicasting happening already that is forced upon us.

Mr. COX. Mr. Chairman, I don't know whether I have time left, and if I don't I would ask leave—or unanimous consent to ask an additional question.

Mr. UPTON. Without objection.

Mr. COX. I still don't know whether I have time or not.

Mr. UPTON. You don't have—your time is expired, and when your question is over, we are going to break and vote twice and come back for Mr. Markey to ask questions.

Mr. COX. I thank you. This question I would like to address to any on the panel that feels so moved to jump in. At the base of most of these tough choices, as Mr. Shimkus was outlining, is the 20th century notion of free over-the-air broadcast television in return for free spectrum. He asked whether anybody objected to that

model and nobody objected. I would like to at least call it into question, because it was based on a different world in which the fundamental problem was scarcity and the fundamental need for government was rationing in light of that scarcity.

With the Internet, we have got the opportunity to distribute to billions of people for free, essentially, I mean the channel of distribution is free. The Internet is an extraordinary opportunity. And yet a whole lot of the content community and the broadcast community and the status quo community is all organized to prevent the Internet from being the channel of distribution. That is really what is underlying all of this. Nobody has an Internet distribution model.

Mr. WRIGHT. None of us want to become the music industry.

Mr. COX. Well, I just observe that the music industry, when radio threatened them and they had no compulsory license from the Federal Government, profited mightily from the free distribution of music over the air. They sold more music, and the music industry grew very rapidly. And, today, while everybody is fighting the Internet, they are losing money. The Internet may be our enemy in many respects because it permits the reproduction so easily, by anyone, of content. It democratizes the ability to reproduce and distribute. On the other hand, it also offers many, many opportunities.

So I want to put the question out there and let you know that not everybody thinks that that 20th century model ought to apply in the 21st. I wish that we had more focus on how we can use the Internet as our friend, that we really can have free programming. But nobody seems interested in free programming. We are not talking about a business model in which we give it away for free, we are talking about a business model in which the people putting it out want to continue to own it. They don't want to give it away for free. The model is the movie theater model, and the broadcasters want to be the projectionists, and they want us to sit in our seats till it is over, then go home and have nothing there. We don't get to keep it. We can't tape, we can't give it to a friend, we can't watch it at some other time or play it. From a consumer standpoint, these would be thrilling things, and businesses that find a way to satisfy consumers in the long run make a lot of money.

So I just hope people will come back to Congress some day with a model addressed to how to use the Internet instead of fight it. That is not really a question, but if anybody wants to jump in and say they disagree strongly or agree, I would be interested in hearing your reaction.

Mr. KIMMELMAN. I know the chairman wants—I just want to say, Mr. Cox, very quickly, that I think it is a very interesting model. It is not that free over-the-air television is the be all and end all. We have a problem here of market power in broadcasters' hands, market power in cable industry's hands. Nobody wants to open up a platform. The Internet is the open platform, and I would just suggest if Congress is going to think of something that is fairly regulatory in terms of intervention with time deadlines and manufacturing and software processes, you ought to consider an alternative of requiring an open platform and providing piracy and theft pro-

tection and seeing if we can get open distribution systems, but it would take some intervention.

Mr. COX. Thank you, Mr. Chairman.

Mr. UPTON. We will go to vote. We will come back about 2:30. We have got two votes.

[Brief recess.]

Mr. UPTON. Getting ready to resume. If someone might shut that outer door, it would be terrific.

Chairman TAUZIN. Lock it.

Mr. UPTON. No. Yes. And we will resume with questions from Mr. Markey for 5 minutes.

Mr. MARKEY. Thank you, Mr. Chairman, very much. And I would like to direct my questions toward the Boston College and Holy Cross graduates at the table. And the rest of you need not worry, Mr. Wright and Mr. Fiorile. And they represent kind of this relationship that does exist in the Jesuit community. We are rivals and yet we are all part of one family, and that is kind of the affiliate/broadcasters, it is a rival/family relationship. And for the purposes of this hearing, they are requesting, I think, jointly, the identical goal which is that all of the video, audio and data from the digital television revolution be carried on a must-carry basis and that the public interest would be advanced from that goal.

In the analog era, we had a similar policy, we still have that policy, believing that that one free over-the-air broadcasting station limited, meaning, one service that is that it provided, was important to the community because we wanted to ensure that it maintained its viability because of its local personality, its local component. And there are some people, as we have heard, on the committee who question whether or not there should be an NBC 2, 3, 4, 5 and 6, which I think is a legitimate question. And on the one hand, both of you are basically quantifying what you want from the Congress, the parameters of how you see must-carry actually working in this new era, and you can be quite specific about what you want.

If I felt that NBC 2 was children, NBC 3 was going to be local news, NBC 4 was going to be Spanish language programming, NBC 5 was going to serve schools, as long as NBC 6 was going to be an all-sports channel I would be okay with it. I would consider it as a package saying, well, I can see the local news benefit, how children would benefit. So my question to you is in return for a quantified must-carry of all voice video and data, would you be willing to give us your concept of what the quantified content carriage would be in any of these areas or other things that would help us to create an equation that would justify a must-carry for all of those various stations?

Mr. WRIGHT. well, let me speak a little bit from the network standpoint, and, Mike, you can speak from the station standpoint. Because what we obviously only own the stations we own and the rest are affiliates. And the concept is that you would have a certain amount of the program, probably most likely the evening program, in high definition. And that other dayparts would have other programs that would be produced with the help of the network in some cases and solely at the local level in other ceases. And the network might provide templates for some of these or programming

that would help with some of those local programs, but they would basically be a localized. Most of our affiliates wanted to use a good portion of that capacity to localized programs, a localized news, weather issues, something probably with sports that it would be purely local, it wouldn't be the NCAA, it would be something that would not necessarily get covered. We might provide them at the network with certain access to programs that are not major programs but sports programs that might have interest, and they would select from those and add them into it.

In the case of national politics, we might provide them with the material that we have on a national level and the would concentrate mostly on the local level on a channel that might do that. Now, the actual arrangements haven't been worked out in terms of what do I get, what do they get, and it is probably still, at least prior to this hearing, it was too early to really get people to agree what it is that they want to do. And some local affiliates have said, "No, we want to do it all. You just continue to do your service and we will take care of the rest." So it is a little bit in flux. I would give you our general managers would be more along the lines that I said. In some of the big markets we have it is almost—you know, it is an endless amount of local things that you can do.

Now, nobody would expect to make the kind of revenue from these kinds of activities that you would off the primary, but you would expect to have some viewing and you would certainly expect to have a connection, a greater connection in your community, and you would get some economic benefit from that. Now, we have not negotiated the terms of all those things, and before I turn it over to Mike I would say one thing, though, that in the 5 years or so since there was an agreement on the format of—I mean on the transmission, you do have a situation where 90 percent of the households in this country today have access to at least one channel of over-the -air distributed digital television, which includes some high-definition program. And in approximately half the country, there are four or more channels operating today which are digital and include high-definition programming. And in many of those there are additional local channels, which he is going to talk about which is so-called multicasting one in that hybrid model which I am not even referring to.

So I would say that even though some may say that is not enough, but in 5 years plus, that is a pretty substantial position. And it grows now at a very rapid rate, and yet there is very little viewership. And in most cases, in most all cases, that program is not directly accessible on cable of satellite today.

Mr. MARKEY. Let me let you follow-up then, Mr. Fiorile. You know, Ms. Corbi is sitting over here. She is saying I have a great channel, they want to take up all this space. The public interest component is very important because as the versatility of the digital spectrum makes additional channels possible, in turn, there has to be commensurate increase in the public interest commitment. So could you down those issues one channel, perhaps, two, more local news, another one to children, a second language. Can you give us a quantified list of the things that the public would get in return for putting pressure on stations that are cable owned,

that the public could say, on balance, well that is good for my local community.

Mr. FIORILE. I can give you two examples, which you actually refer to. One is we are right now in Columbus experimenting with closed-captioning, and we have the opportunity to do eight languages. In addition to English and closed-captioning, we have the availability of Spanish and two different Asian languages. And we are closed-captioning in Spanish. Those captions are not being carried by the cable system because they are embedded portion of the signal, which is not being carried.

Though similar translations would be embedded ion the data streams of the high-definition signal, which cable operators, as we have heard, are going to make choices to determine whether or not those were important. And under that scenario, it is possible they wouldn't be carried.

Mr. MARKEY. But if we tied it together, that is if we decided to give you this must-carry, would you, in turn, specifically say that you would increase the amount of local news, the amount of local children's—would you be willing to engage in that kind of specificity in the same way that you want specificity in terms of what you are going to get? Would deliver the specificity in terms of what you would be willing to deliver, so that then there would be a public interest that would be achieved.

Mr. FIORILE. In so much as what we do is in the public interest, this would give us the opportunity in news programming to create regional newscasts.

Mr. MARKEY. And you would commit to that.

Mr. FIORILE. We would pursue it and put it on and see, assuming it got carried, how much interest there was in it. We wouldn't commit to it long-term if nobody was interested in watching it. The key is the choices, what we want to do is give the consumers the choice, not have the cable company stop that choice from being made at home.

Mr. MARKEY. If I may just ask one more question, it would be this, and I would like to go to Mr. Willner on that, a separate subject, quite quickly. In the 1996 act, I was able to build in a provision which called for modems and set-top boxes to be purchased at Mr. McCollough's stores, at Circuit Citys and other stores, and that they didn't have to purchase from the cable company so that they could basically in this DTV era purchase whatever set-top box or modem they wanted, and then they could enjoy the technology. Do you agree that that is a good public policy goal?

Mr. WILLNER. Absolutely. In fact, it is a good corporate goal for us. It would help us take those very expensive converter boxes off of our balance sheet, and we wouldn't mind that at all.

Mr. MARKEY. And, Mr. McCollough, what progress have we made in accomplishing that goal?

Mr. MCCOLLOUGH. At the moment, we still have boxes which would fall under the portable, works on any cable system and in fact and in fact supports all the functionality that the cable systems can provide.

Recently, as we have been having these conversations, we have asked for a test box from a manufacturer who was trying to show us some of their wares. We said, "Great, send us some. I want to

plug it in and see how it works." And the first question is, well, wait a minute, what system are you going to put it on? We have to call and make sure it is provisioned properly so that it will work.

And so I think progress is being made, and I want to—and I have think we have tried to recognize that I think Cable Labs is in fact trying to move this forward, it is just very tough with two sets of rules. It is tough when you say Cable Labs is going to devise the rules and then the cable operators don't have to play by the rules. If the Redskins could have that with their opponents, they would be 3 and 0.

Mr. MARKEY. Mr. McCollough, one of the reasons I get a little bit skeptical in this whole era is that it is 6 years later and Cable Labs is supposed to be this hotbed of research capacity, and yet they can't figure out a way to have smart graduate students at MIT and Cal-Tech come up with software or set-top boxes that could operate compatibly with these cable systems. And I would just recommend that they take 20 kids out of MIT over in graduate school in my district. I think they could probably solve it in 6 months. But all of these questions 6 years later really give me some problems because that was the promise of the revolution. That was what was going to empower consumers so that they got more out of it.

And that is really what it is all about, that is what our committee is all about. It is about the public getting more, it is about the consumer getting more, more choices, more versatility. And instead when you see something like this, you kind of say, well, maybe that is not going to happen. Maybe just the institutional inertia of one industry or another is going to block the public from really seeing the true benefits. And I think if we are going to move forward, Mr. Chairman, both of you, I think it will be helpful for us if the industry can't resolve these issues for us to move in and to add the specificity and the deadlines that ensure that the public gets the benefit. Because for me that is the only return on investment I get or we get, and I am just hopeful that that will be the case. And I thank you, Mr. Chairman, for giving me a little extra time.

Mr. UPTON. Just a little plug, I know Zenith will be glad to sell you a digital TV since you don't have one in the Markey household as well. Right? Do you have a digital set?

Mr. MARKEY. No, I do not have a digital set, and——

Mr. UPTON. It is an opportunity. That is why I brought him.

Mr. MARKEY. It is an opportunity. How much are you going to charge me?

No, what is the lowest price digital set you have got?

Chairman TAUZIN. For you?

Mr. LEWIS. Integrated.

Mr. MARKEY. Integrated. What is that?

Mr. LEWIS. Integrated set with built-in tuner, it is under $1,500.

Mr. MARKEY. Fifteen hundred dollars. So every person who is watching us, every person who needs to get a life who is watching this on C-Span—most likely—they are looking at this saying, "Man, I am watching the TV. I have got a pretty good picture for $300 or $400 that I bought 7 or 8 or 10 years ago," right? So I need the add-value. The added-value would be NBC 2, 3, 4, 5, 6. It would be some of the things that the cable systems could do, but

we haven't quite poked through that gordian knot yet. Thank you, Mr. Chairman.

Mr. UPTON. I know they need that weather station down in—extra weather station down in Louisiana this time of year. So Mr. Tauzin is recognized.

Chairman TAUZIN. I just checked, we are half under water and half under indictment again.

Just a point of reference, I read somewhere that the original HDTV sets in today's dollars actually come in favor comparable to the original color sets when they first came out and to the original black and white sets when they first came out, that it is a function, again, of market purchasing numbers, and I was very pleased to see that, and I think that is true. We have seen the prices begin to come down as more and more people begin to buy them. That is good news.

By the way, Alan, I will mention to you the Saints don't have those advantages, we are 3 and 0.

Mr. WRIGHT. Mr. Chairman, if I could make a comment along that line, it came to my attention earlier today that 1953 is when the color standard was accepted, and it was not till 1964 that any network had all color. It was NBC. It took 11 years.

Chairman TAUZIN. I want to talk to you about that. Let us talk about the rate in which broadcasters are getting into this game. Let me first read a very nice announcement that ESPn put out today. ESPN President George Bodenheimer announced today a new chapter in ESPN history, the future of sports television. It plans to provide high-definition simulcast service to its premier network, ESPN. It will be launched April 2003. ESPN HD will include in its first 100 live telecasts Major League Baseball, basketball Association, National Football League, hockey produced and distributed in high-definition television. It goes on to say that telecasts will be produced in high-definition in 2003/2004 include those games, a variety of ESPN original entertainment proprietary programming, including X-Games, Premier Action Sports Event, Great Outdoor Games program, ESPY Awards and college championships events, like the Women's Final Four and the ACC Men's Basketball Tournament. That is good news, Mr. Markey. And in 2004, they plan to go with Sports Center and other studio shows, adding another 3,700 hours. That is good news, really good news.

I also have a chart illustrating the amount of HDTV programming in primetime on the major networks. This is ABC's, this is CBS', this is NBC's, and this is FOX.

Mr. WRIGHT. You don't have late night on there, I don't think.

Chairman TAUZIN. I don't have late night on there. But the 5.5 hours total primetime on NBC, 13 on ABC and 17 on CBS. You mention in your testimony, Mr. Wright, that you believe consumers must get better content than their analog experience, obviously. So I want to ask you, you also mention that you plan to increase your programming to 60 percent, but you didn't tell us exactly when. What is your time schedule?

Mr. WRIGHT. Well, it is now, right now. That is what it is now. You are just not including the 2 hours of late night, Conan O'Brien and Jay Leno, which are in HD.

Chairman TAUZIN. Yes. So the 60 percent includes hours outside of primetime.

Mr. WRIGHT. Right, but it is evening hours. I mean those are very popular shows.

Chairman TAUZIN. I think it is important that you describe for us why it is that protecting broadcast signal in a digital age is important. I mean, you know, ordinarily over-the-air broadcasting is unprotected today in the analog age, and the question people obviously in the lands of America will say, "Why do you want to protect it in the digital age if you are not protecting it in an analog age?" Why is that?

Mr. WRIGHT. Well, a lot of the people that we will do business with, and do do business with, have ownership rights in the production of the content that they help produce, and that is never going to cease, that is always going to be the case. And they give us the rights to have it aired on an over-the-air fashion, they give us the rights to have people use it in home and reproduce it for use in home. They don't give us the rights to have it sold or to be delivered to other people on a permanent basis for long periods of time, which has happened in the music industry when it gets digitized and sent on the Internet and continually distributed.

Chairman TAUZIN. Now, isn't part of the problem that in the analog age even if you have that kind of product, you can have the best quality product, I think Lion King was once produced for over-the-air broadcasting, that you make a copy of it but you can't make a million copies of it.

Mr. WRIGHT. Right.

Chairman TAUZIN. So there is a protection in the nature of it being analogued.

Mr. WRIGHT. Right.

Chairman TAUZIN. The concern about protecting over-the-air broadcasting in the digital age is by reason of it being digital and that you make enumerable copies of it forever. And if we don't somehow deal with that, it is my concern, I believe it is yours, I wish you would state it for us so we could understand it, that that rich content, that valuable content is not going to make its way into broadcast television for free over-the-air distribution; is that correct?

Mr. WRIGHT. It simply isn't, no. You are going to have huge restrictions on it. And there are ways to make it acceptable, to have it to be used on personal basis and to be used. That is the broadcast flag issue that has watermarking. There are a number of techniques which are not necessarily as sophisticated as we would like right this minute, and actually the music business is helping us with that as they try to figure out how to deal with that issue. So I mean there is a recognition of the Internet's power and its value, there is no question about it, but there is also recognition that you have to do what we can in a civil society where we have laws and we have intellectual property owners' subsequent usage of it. And we are caught here at a point in time where that isn't all as well defined as we would like. But, clearly, if we were to have to subject any program we had licensed to unlimited distribution in perpetuity, the terms would be different or they would be non-existent.

Chairman TAUZIN. Yes. And I don't know that Americans fully understand that distinction, that digital looks brighter, it is prettier, it is more detailed, and as you get into high definition, it is absolutely brilliant in all its quality, but is also implies a great deal of difference in the capacity to protect that information from outright total theft, which doesn't exist in the analog era.

Mr. WRIGHT. Well, Mr. Chairman, we have all lived in the world where you put the tape in the VCR and the first thing that comes up is the FBI warning.

Chairman TAUZIN. Yes.

Mr. WRIGHT. And that is the history.

Chairman TAUZIN. But even if you didn't follow the warning, you keep making copies of that tape, it gets pretty ugly.

Mr. WRIGHT. It certainly does.

Chairman TAUZIN. But a digital tape every one is just as good as the one before, and that is the big danger we are talking about.

I want to talk, Mr. Kimmelman, in the time I have also about a most extraordinary tension that is going to exist in this bill that I need you to help us talk about. We have included in the staff draft a very aggressive cutoff date for the analog input. We have included it primarily to highlight the tension we face here. If people keep manufacturing analog devices and if every device has to be able to speak in analog and input into analog, don't we make it extraordinarily harder for content providers to protect their information. We create that analog or we create a problem in this transition. And, obviously, setting a hard cutoff date is a hard solution because it means at that point a lot of equipment you bought becomes obsolete, because the new equipment you got won't interface with it, it won't communicate with it, it won't be able to literally. It won't have the analog input. So to put it in layman's terms, my old VCR won't work anymore with the new equipment and I am in trouble already. I have got all this equipment, I can't use it anymore. And if we do what the staff draft says, set a cutoff date, we are condemning an awful lot of equipment to go into obsolete status on that date as new equipment is bought that cannot interface with it to that extent.

Now, that is a hard solution, and we put it in this bill to force everybody to face that, but if we had to do that, all of us have a hard time answering to an awful lot of people in terms of obsoleting their equipment. Now, Mr. Kimmelman, I know you represent consumers here, and we have dealt a long time together. I don't want to face those angry consumers, I know you don't want to face them. What is your solution, how do we deal with this?

Mr. KIMMELMAN. I sure don't want to face them, Mr. Chairman. And I appreciate your intent in trying to drive that solution. I would just like to suggest I would turn it around because the consumers didn't ask for high-definition television. Some like it when they see it, but they didn't know it was there, they didn't know about the spectrum that was involved, they didn't know about a lot of these decisions. I think it is going to be a very harsh morning when they wake up and that equipment doesn't work. So I would turn it around.

Chairman TAUZIN. But if I could interrupt you, we are not talking about high definition, we are just talking about digital.

Mr. KIMMELMAN. I understand, I understand. I am just trying to turn this around here. We have got—when you did your opening statement you talked about the consumer expectation as kind of checklist, a test, and one was that there be exciting new content, and I think people—we know people pay for exciting new content. They like it, they want to watch it. How do we get it there? Exciting new content tends to drive revenue—advertising revenue, payment for programming. So I would flip this around and say those who are in the position to profit appropriately for providing good, new, high-quality content need to also bear some of the burden, some of the risks here of the equipment changes that are necessary in order to get us there. And in just in the same way that digital is better quality, better picture quality, sharper color, but has this potential theft problem, we need those who really need to protect their content working with the hardware industry, working with the software industry to make sure that those protections don't go too far, that we are not disenfranchising consumers for the ability to copy and tape and just watch——

Chairman TAUZIN. Well, but see that is not the issue I am asking. The question I am asking is how do we protect content in the digital age if we don't close the analog hole, if we don't see at some date analog input ends? And if we say that, we are obsoleting equipment, we are not just—it is not a question of whether or not you can copy. You still may copy in the new age. You can copy digitally with these protections, but you can't copy—you can't even use your old analog systems anymore. And that is the question. If that is the only solution that we face in order to allow for protection to be adequate and for all this rich content to reach the consumer, which ought to be his, as I said, quit pro quo for going through this transition, if that is not the right answer, what is the right answer? And I am looking for you, anyone else who may want to volunteer, what is your solution?

Mr. KIMMELMAN. Well, I am suggesting two ways to do it. If it is trading out perfectly good equipment that people bought with an expectation interest that it would work for something else, somebody else should help pay for that, because it is not their fault. If that one doesn't work, it strikes me that you have a cost/benefit analysis of whether that ability to preserve analog outputs is such a burden and such a cost versus the burden on consumers, you need to make cost/benefit analysis. Mine, at this point, given the technology and given what I have seen, and I keep hearing about watermarking and I keep hearing about a broadcast flag that will work, my suggestion is that that loophole is worth living with rather than putting this expense on.

Chairman TAUZIN. Whoa. Any of you want to challenge that? Mr. Wright, do you think that is a good solution, live with the loophole?

Mr. WRIGHT. Well, I just think that the path we are on is to try to provide basically protection and usefulness of the Internet, and it is going to have to evolve, whether we can do that effectively and efficiently. Obviously, that cost we are going to have to bear. It is very difficult to assume what all that you—it is very difficult to assume that the programmers and distributors are going to assume all of the costs that consumers might have to bear in terms of the obsolescence of equipment that comes with developments in tech-

nology and delivery. I don't know how—I mean there is not—that is a very big bill, and I am not so sure anybody is prepared to take on that cost.

Chairman TAUZIN. And, you know, we hear from the high-tech community, well, don't give us a solution that requires our computers and our equipment that will work on this broadband Internet world to have to read any watermarks or find out what is protected and what is not protected, that is not our business, and we should haven't to build equipment that does that. That is the argument we hear from the high-tech world. What are your thoughts on that?

Mr. WRIGHT. Well, I mean, that is essentially the—that is the Napster issue. The equipment is there, its ability you can deliver, you can transfer ownership control of a property you don't own to others without their approval. And it runs totally contrary to our whole legal plan of intellectual property and protection. So I think that anybody that is in the manufacturing equipment at any level of tech has to be aware of what the rules of the land are, what the guidelines are and cooperate with it.

Chairman TAUZIN. Well, let me just lay it down for all you to think about. If we are faced with the ugly choice of leaving that hole open and a lot of content providers deciding not to play because they can't risk losing the value of their products with that big hole open, and we are faced with the alternative of shutting that down by making all this equipment obsolete on a date certain, as the draft suggests, all of us will be looking for a third way, all of us. And I am suggesting that it would be very helpful if all of you would be thinking of what is a third way that we can come to terms with, because my guess is that if we were passing a bill today instead of discussing a draft, that members of this committee, Mr. Upton, would be looking for a third way. And if there is one available, they would be running to it. Because the two alternatives are awful. Either we don't get the content in the system and it all falls apart, because you know that content will drive this whole transition in the future, or we take this drastic step of setting a date certain when analog input ends, and, Mr. Kimmelman, I don't know where you go to hide, but I want to hide with you if we take that route.

Give us a third way, please. Mr. McCollough.

Mr. MCCOLLOUGH. If I could just offer, Mr. Chairman, it is important that you don't look at analog outputs collectively, because that covers a wide range of capability and that I believe, and Mr. Wright may want to offer, but I believe the great concern of the content owners is component analog outputs, that the old S-video and the old RCA jack that are the vast majority of TVs that are out there don't produce a quality that I think is going to give anybody a whole lot of heartburn, so that you ought to start with a much smaller set than the entire universe. And I think as the staff continues to do some work here, we would be delighted to continue to help, but it is important that you understand what the variety of analog outputs are and what their real capabilities are and which one of those in fact pose some challenge. At the end of the day, we do need—the thing you can't legislate that will drive this more than anything else is great content. We have just watched

through DVD the greatest introduction of any consumer electronics retail product in history and in 4 years we are at 30 percent penetration, and the price has dropped from $600 to $49 last Labor Day. So the business will work. We will go at it, we will work hard to do this, but you have to be careful that we take this in bite size chunks and not look at analog collectively as the issue, because I am not sure that is in fact the problem.

Chairman TAUZIN. Anyone else want to touch it before I go? Thank you, Mr. Chairman.

Mr. UPTON. Thank you. Mr. Luther.

Mr. LUTHER. Thank you, Mr. Chairman. It is my understanding that two of the most controversial issues surrounding this debate are, first, the question of technological capability and, second, the question of incentives. In that regard, I have a couple of questions which I would address to any of the panelists.

First, how do you respond to the argument that must-carry requirements create a disincentive for broadcasters to provide consumers with original and compelling programming? I have heard the argument that guaranteed carriage of a broadcaster signal takes away the competitive incentive that drives the market. And I would like anyone to comment on that.

Mr. WRIGHT. Well, programs are only useful from a broadcaster or any programmer standpoints if they are watched. And if you are not—you compete once you put the program on the air. You also compete to get the program on the air, but once it is on the air the competition is to get the viewer to watch. And so the thought that you can put on programs that nobody is interested in and derive any financial benefit from it or any satisfaction is pretty—you know, it speaks for itself.

Now, there are certain public interest things that you put on the air and expect to get very little total viewership or usefulness, but it might be very important. So I think that the issue that must-carry drives programs that nobody wants to see, that only happens really in cases where there are just public service issues. Maybe they don't have big audiences but they are important. But, certainly, from the standpoint of trying to drive popular programming, must-carry just gets you there, it doesn't get people to watch. You can't exist very long on that operation.

Mr. WILLNER. Congressman?

Mr. LUTHER. Sure.

Mr. WILLNER. If I may. One of the concerns that we have is that as long as we can accept the fact that we have a limited amount of real estate in any cable system with all of the things that we are delivering to our consumers right now in a digital cable network, you could actually make the argument that certain broadcasters who have must-carry ability are just taking up some of the real estate to prevent competition from the programs that they are really most concerned about, and that is on their primary signal. So there are all kinds of disincentives for the development of new and innovative programming and yet still have the advantage of reducing competition against their primary signals. So we are very concerned that we are going to have a reduction in the quality of the content as a result of must-carry if there is just a free-for-all on multiple streams.

Ms. CORBI. Just to answer this as a programmer, we have just celebrated our 1-year anniversary and we have already been to the market with a very robust interactive product. We are in discussions about a number of movies for HDTV programming and that interactive product also includes a kids' educational product. And so we are incentivized because we don't have over-the-air carriage, we don't have must-carry rights to make sure that we are providing compelling programming, not only in our main channel but also for the operator to promote and drive the digital set-top boxes. And so if there is no compelling reason for a broadcaster to have to provide compelling programming to the consumer and there is no timetable for them to do that, then ultimately it is our programming that gets pushed from the market simply because what is maybe now must-carry stations may be 100 if they have the rights to take up the multicast must-carry rights if they have 4 or 5 or 6 channels available to them.

Mr. LUTHER. Okay. Let me then touch on the second question that I have to make sure that we have time for that. The purpose, of course, of must-carry is to guarantee quality local programming to consumers no matter where they live or what type of delivery system they have. If a multicasting requirement does not burden the cable operator with any additional burdens in terms of capacity, how do you respond to the argument that multicasting of numerous local programming signals serves the exact spirit and purpose of the original must-carry mandate? To anyone again.

Mr. WILLNER. Well, from my point of view as the operator, I have to tell you that I think that local broadcasting, as I said earlier, plays an important role in American society and produces a wonderful product to local communities. That was protected under the must-carry rules prior to any digital revolution. The cable industry is completely in favor of continuing the carriage of the primary signal and guaranteeing the carriage of the primary signal for any broadcaster who chooses must-carry for it.

What is going to happen on those other streams of services is that new businesses are going to be created on frequencies that have been granted by the government, and they are going to compete with other businesses who don't have the same rights and who will give them an unfair advantage. And that is not necessarily in consumers' interests, and I think that this body, the congressional intent here is to create an environment that protects consumers' interests, not my interests, not Mr. Wright's interests, nobody sitting on this panel, maybe except for Mr. Kimmelman. But that is really what the focus should be. And I think that allowing an advantage to a certain group of content providers over others is not necessarily in the consumers' best interest.

Mr. FIORILE. And if I may, I would suggest some of those additional programming opportunities are going to be regionalized newscasts, in our case they are going to be high school football games, and I can't believe it is in the consumers' best interests for those decisions to be made at that cable gatekeeper rather than in the home.

Mr. WILLNER. Well, you ought to try and come and talk to us about and maybe we can come to an agreement. I am not sure it should be done here.

Mr. GLEASON. That was exactly from our perspective as the small cable operators I would weigh in here in that I agree with Mr. Willner that we are happy to carry that primary signal, but the key component here and the point that everybody has made here is that content is going to drive the digital revolution. If these multicast channels have high-quality and desirable programming on them, we will carry them because our customers will tell us to carry them. And if they are good enough, then we don't need to be force to carry them. But the fact of the matter is is that the customers will make that final decision.

Mr. LUTHER. Thank you, Mr. Chairman. Thank you, panelists.

Mr. UPTON. And just to close that argument, I would note that if my friend, Mr. Markey—and, again, we have got a markup going downstairs that started awhile ago, which is why a number of members went down to vote, If Mr. Markey's team, the Fighting Eagles from BC were a little bit better, he might have a digital TV by now.

Along with his Red Sox. I will hear about that one. I want to thank all of you for being with us today and by my count we had 23 Members of Congress that were here, and as I said in my opening statement, this is a very lively debate. It is a very pressing issue that we do have to deal with a deadline of 2006 that is coming. I think this is a good step in the right direction. I would just advise all of you that we are going to continue in this direction and we spent a good 4½, 5 hours today, take away the time from the votes, but we are going to continue to press forward.

Very much appreciate your testimony, your thoughtfulness, because we know at the end of the day we want all of our constituents, whether they be in Louisiana, Massachusetts or Michigan to have the technology to in fact get to the digital age, and I know that that is where your heart is, and we want to make sure that we get there. So appreciate your time and expertise. Thanks very much. God bless.

[Whereupon, at 3:21 p.m., the subcommittee was adjourned, subject to the call of the Chair.]

[Additional material submitted for the record follows:]

PREPARED STATEMENT OF GARY SHAPIRO, PRESIDENT AND CEO, CONSUMER ELECTRONICS ASSOCIATION

INTRODUCTION

On behalf of the Consumer Electronics Association ("CEA"), I appreciate this opportunity to discuss our industry's views on topics related to the transition to digital television. CEA long has been in the forefront advocating a rapid and pro-consumer transition to digital television (DTV), and the marketplace is responding notwithstanding the ongoing shortage of over-the-air high definition (HDTV) programming and manufacturers' continuing inability to manufacture DTV products that work simply and nationally with digital cable systems. Many of the provisions in the recently circulated "staff draft" DTV legislation are laudable and would accelerate the transition. They should receive serious consideration if the matters they address remain stalled.

In the CE industry, DTV has arrived in force, due to the rapid consumer adoption of DVD and DBS products. July marked a critical milestone when for the first time in history over half of all TV sales revenue—52%—was attributable to digital television products. By comparison, from January through July, DTV accounted for only 36.8 percent of industry revenue. Meanwhile, more than 3.5 million Americans have invested over 7 billion dollars in DTV. These figures tell the story: the American public is moving to digital television technologies at an ever-increasing pace.

However, as the Chairman and other Members recognize, multiple roadblocks are still holding DTV back from true mass-market status. We need national plug and play cable compatibility with DTV equipment. We need agreement on content protection methods that protect copyright owners while preserving consumer's customary fair use expectations. We also need more HDTV programming—and we need to ensure that the programming gets to consumers in its original form whether it is delivered by cable, a broadcast station, or any other distributor.

Our industry greatly appreciates the efforts of Chairman Tauzin and others in calling the affected industries together to participate in roundtable discussions on these complex issues. These discussions have measurably accelerated the transition on some issues and redoubled the efforts of the participants to reach a consensus on others. The staff draft bill on DTV issues on the whole is beneficial in pushing forward on the transition. The bill directly addresses some of the most difficult unresolved problems that, while complex, must be resolved now to permit the transition to move forward.

It is essential that the pressure be increased on all parties to move forward and find solutions to the problems that are delaying the transition. The consumer electronics industry, represented by CEA, recommits its resources to continuing to work with you, the Federal Communications Commission (FCC), and other parties to achieve the nation's digital goals.

CABLE COMPATIBILITY IS CRITICAL TO THE DIGITAL TRANSITION

The ability of cable subscribers to view digital broadcast programming is critical to the successful transition by broadcasters to digital television. Seventy percent of Americans subscribe to cable television service, yet today, four years after the first digital television broadcasts, a consumer cannot purchase a digital television set with assurance that it will receive digital signals carried by cable systems in this country. This situation must be corrected if the digital transition is to succeed.

While compatibility between cable systems and television receiving equipment long has been an explicit Congressional requirement as contained in Sections 624A and 629 of the Communications Act, lack of resolution of this issue has been a major obstacle to DTV market penetration. Representatives of the cable and manufacturing industries have been meeting regularly, some progress has been made, and we have committed to update the FCC on the status of our efforts by mid-October. At the same time, it is vital to the DTV transition that full "plug-and-play" compatibility be required as soon as possible.

The urgency of this issue was heightened by the digital tuner order issued by the FCC in August. The circuitry required to add digital reception capability in a TV overlaps significantly with what is needed to add cable reception. If the outstanding cable compatibility issues are resolved immediately, the integration of both capabilities could be done simultaneously resulting in a vastly more attractive product for consumers and significant economies of scale.

CEA supports statutory language to ensure that technical standards are put in place, are supported fully by all cable operators nationwide by a specific deadline, and that the implementation of these standards is accompanied by reasonable licensing terms that do not diminish consumers' equipment functionality or fair use expectations. Essential to cable compatibility is a national plug-and-play cable standard with which consumer equipment manufacturers can design and build television receivers, set-top boxes, and other consumer equipment intended to receive digital cable programming. In addition, cable operators nationwide should be required to support and use the standards. Experts in the CE and cable industries have developed the necessary minimal standards for digital-compatible products but remain in negotiations concerning the terms and conditions for implementing them. It is our hope that this draft legislation in the near future will accelerate efforts by the FCC to implement a minimal level of cable compatibility throughout the industry.

CEA has submitted to the FCC a proposed standard that would allow consumers to purchase digital televisions and cable boxes that plug directly into their digital cable systems. Along with the standard, CEA also submitted a proposed pod host interface (PHI) license that would comply with FCC rules while preventing theft of cable service or harm to the cable network. Our proposal would:

- Enable an inexpensive digital set-top box or off-the-shelf television to work directly with any digital cable system to receive both "in the clear" and "scrambled" programming;
- Allow cable operators to deliver their product offerings and advanced features;
- Include a license agreement that protects the security of cable services and content, while preserving normal and reasonable "fair use" expectations; and

- Provide an open and innovative marketplace for DTV cable products that will permit more consumers to benefit from competition in DTV products.

The proposed legislation embraces these goals. We will continue working with the Committee, the FCC and other parties to reach agreements and move forward on cable compatibility issues.

COPYRIGHT PROTECTION

Recording programs for later personal viewing is a well-established consumer expectation, the legality of which was upheld by the U.S. Supreme Court in the 1984 "Betamax" case. Recording devices are in 94 percent of homes today. Legitimate home recording must continue to be available to consumers if we expect viewers to accept and help promote the transition to digital television.

Home recording and piracy should not be confused. Home recording practices have nothing to do with commercial retransmission of signals or with unauthorized commercial reproduction of content. We recognize that unauthorized copying and distribution is a legitimate objective of program owners, including unauthorized distribution over the Internet.

Affected industries must find a way to satisfy consumers' legitimate expectations to record programs, while preventing the unauthorized redistribution of programs. Any protective method must be demonstrated to be feasible technically, to avoid chilling innovation and to protect consumers' reasonable and customary recording rights. Fair use remains vital to consumer welfare and expectations.

We appreciate the draft legislation's concern that broadcast flag technology not deprive Americans of the functionality of the products that they currently own. Americans have come to expect that their consumer electronic products will work for a long time. While they appreciate the dynamism of our industry and recognize that new technologies will enter the market they still expect that their current product will retain its value. Meeting these high expectations is part of our industry's pact with American consumers and one that we take very seriously.

For this reason we are concerned about the staff draft's proposal to ban all analog outputs. Such a provision would hinder or eliminate the functionality of millions of products in consumers' homes, including the 3.5 million DTVs sold to date (all of which are equipped only with analog inputs). In addition, such a requirement would make consumers understandably reluctant to invest in DTVs currently on the market, leading to a slowdown in DTV sales. Finally, the provision would eliminate the potential for relatively inexpensive set-top converters that would allow today's analog televisions to display digital over-the-air and cable programs.

We urge the Committee to consider carefully the potential hardship for consumers that would be brought about by such a requirement as well as the detrimental impact on the DTV transition. Instead, the Committee should seek a commitment from the affected industries to redouble their efforts to reach agreement on digital watermarking and other technical solutions that would protect intellectual property while preserving Americans' good faith investment in their consumer electronic products.

PROGRAMMING

The essential prerequisite for a successful DTV transition is high quality, compelling high definition (HDTV) programming. As is typical with consumer electronics products, sales of DTV sets are driven by ample and compelling content. Currently, the delay in digital broadcasts has resulted in DVDs and digital satellite programming driving the consumer migration to digital television monitors and receivers. Satellite services have several full time HDTV networks, including HDNet, Discovery, HBO and Showtime and plan to add more in the future.

In contrast to satellite programmers, broadcast networks are offering limited high definition programming. Currently, HDTV broadcast network programming does not reach as many viewers as it might seem. Digital stations are not required to maintain the high definition quality of programming when they pass the signals through to the viewers in their local markets and some network affiliates are not doing so. Even with the network HDTV broadcasts, therefore, it is important to require the network affiliates to pass through to consumers the entire signal in its full resolution.

Another reason why digital broadcast signals are reaching fewer viewers is that stations are not required to use the power and antennas necessary to reach the viewers in their analog service area (except the 120 stations that are network affiliates in the top 30 markets). Although the FCC continues to reserve the spectrum for each station to provide full service area coverage, stations are permitted to use 50- and 100-watt transmitters and short towers capable of covering only their li-

censed service community. The unfortunate result is that when viewers of a perfectly clear analog signal upgrade to a digital receiver, they have no guarantee that they will be able to view that station's digital signal unless they are within the relatively small area being served with a DTV signal.

The relatively little high definition programming available over-the-air, the uncertainty of whether affiliates are passing through the full high definition signal when one is available, and the ability of most commercial stations to serve with their digital signal only a subset of their existing viewers has minimized over-the-air digital viewing. In addition, as of today, less than half of the commercial stations required to be on the air with a digital signal by May 2002, have met that FCC requirement.

Given the recent FCC order requiring the inclusion of an ATSC tuner in nearly every television, the burden is squarely on the broadcasters to meet their obligations in getting full, undiluted HDTV on the air. We are pleased that the DTV draft addresses passing through the full network signal. We suggest respectively that allowing broadcast stations to leave spectrum vacant and serving only a fraction of their analog service areas also should be addressed. By a date certain, all viewers should be able to purchase a digital television set or set-top box with a reasonable expectation that the digital signals of the analog stations they watch will be receivable.

CONCLUSION

We applaud the Committee for holding these hearings to consider the state of the digital television transition and commend all that it has done on behalf of DTV and the American consumer. The draft legislation has many good and positive points. We eagerly anticipate working with Committee and all other interested parties as the draft moves forward.

PREPARED STATEMENT OF GARY J. SHAPIRO, CHAIRMAN, HOME RECORDING RIGHTS COALITION

Consumer expectations about their use of home viewing displays, and home recorders, must be satisfied if the digital transition is to succeed. Yet, in the last few years we have seen license and regulatory proposals, aimed at other targets, call into question whether consumers will be able to use their HDTV and other displays in ways they clearly expected when they bought them.

The basic question, raised by proposals such as the "PHILA" license, and addressed by the draft legislation, is whether home-based consumer electronics and information technology products should be constrained in their operation, out of concern that non-home networks have become capable of delivering *too much content.* Ironically, just as Congress, the courts, and the motion picture and recording industries have acknowledged consumer fair use as a *principle,* the threat to actual consumer practices has grown and spread, even beyond home recording.

Twenty years ago, when the HRRC was formed, the question was whether product innovations such as the VCR should be suppressed, out of concern that recording within the home would damage content providers. Today the question is not only whether such recording products should be suppressed or constrained, but also whether *display products* should be disabled as well.

THE STAFF DRAFT TAKES MAJOR STEPS FORWARD RE THE "PHILA" LICENSE.

Ironically, the FCC is in a position to enforce *anti-consumer* license provisions because of a provision in the 1996 Telecommunications Act that was meant to be explicitly *pro-consumer.* Section 304 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 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 in CS Docket 97-80 (which remains open). CableLabs volunteered and was chosen by the FCC to set such standards. One of those standards is for a security interface, to empower a range of competitive devices to work on digital cable by accepting a "Point of Deployment Module," or "POD."

CableLabs Demands In The "PHILA" License

The version of a "POD-Host Interface License Agreement" ("PHILA") demanded of manufacturers by CableLabs is not just a license for the patent necessary to use this security interface. It is, rather, a comprehensive contract that would require the manufacturer to implement additional technical specifications and provisions. These specifications and contract provisions would eliminate much home recording, and could cause even recently purchased displays to "go dark" or accept signals of re-

duced resolution. It would require that newly introduced digital interfaces, widely accepted as secure, may be shut off at the whim of the movie studio or cable operator.

According to the CableLabs specifications to which PHILA would require adherence, all licensed devices would be required to read and respond to data called "Extended Copy Control Information." The requirement to read and respond to this data would allow commercial entities outside the home to control, on a program by program basis, which wire or wireless outputs from the device would be active, *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, by remote control, the wire connecting one home device to another.*

The "interfaces" turned off by remote control serve the HDTV displays, as well as any recorders. So by shutting off the wire with the high resolution output, the movie studio or cable operator is also shutting of the high definition signal to the HDTV display. This means that a consumer who recently has bought a state of the art HDTV receiver, with a copy-protected digital interface, *could still have the digital signal from a set-top box to this receiver cut off.* Nor could that consumer fall back on the "component video" analog interface—that could be turned off also by remote control. This regime is referred to as "Selectable Output Control," and is a mandatory element of a mandatory specification in the version of the PHILA license that CableLabs has offered to product manufacturers.

Most HDTV displays in the market today, and sold over the last three years, rely on "component video"—the same sort of analog broadband interface that is used to deliver signals from PCs to nearly all computer monitors. (In computer terminology it is called "RGB." Its consumer electronics cousin is known as "Y, Pb, Pr.") Even if the movie studio or cable operator does not choose to turn that interface off entirely, another provision of PHILA would explicitly allow the content provider or cable operator to trigger the *removal of three-fourths of the resolution* of signals transmitted over these component video analog outputs. This is referred to as "downresolution" in the license.

Why would a movie studio or operator choose to shut off a wire that enables *viewing,* as well as recording? Because certain studios have views, based on their own plans and preferences, as to what sort of equipment should be allowed into the marketplace. By reserving the right to shut off the digital and analog interfaces that best support home recording, they can drive the market *toward employing only digital interfaces that do not support home recording.*

After being questioned closely about this requirement by the leadership of this Committee, the Motion Picture Association of America ("MPAA") advised Chairman Tauzin by letter that it no longer is demanding Selectable Output Control (though it continues to insist on "downresolution"). However, the cable industry, through CableLabs and NCTA, has continued to demand agreement to both "Selectable Output Control" and "downresolution" from any manufacturer wishing to be licensed under the patent for the "POD" interface. (This patent was not even a CableLabs invention—the rights were acquired from a cable industry supplier.)

Staff Draft Provision Re PHILA

The staff draft addresses the PHILA license issues in several constructive ways:

- It instructs the FCC to ban impositions on consumer products, "directly or indirectly," other than as necessary to prevent "theft of services and physical harm to the cable system;"
- It requires FCC regulations to ensure that not only set-top boxes, but also *receivers, recorders, and displays* must be supported by nationwide interoperability with digital cable systems;
- It requires a family of uniform, open standards, administered by an organization accredited by the American National Standards Institute (ANSI) (rather than closed, proprietary CableLabs specifications); and
- It requires that there be no impositions on devices that would result in "the altered or diminished functionality of a consumer's digital television reception, recording, and display equipment as intended for legal, noncommercial use.

In instructing the FCC to clarify or interpret its regulations so as to prevent impositions on consumers of the sort that PHILA would wreak, the staff draft has taken a big step forward.

THE DRAFT RECOGNIZES THE IMPORTANCE OF "ENCODING RULES," BUT SHOULD REQUIRE THEM MORE EXPLICITLY.

The era of public policy negotiations over copy protection status of digital consumer devices began in 1993, with attempts by the HRRC and the motion picture

industry to draft and seek introduction of a mutually-acceptable "Digital Video Recording Act" ("DVRA") that would provide balanced outcomes as to new products. The basic tradeoff, first put on the table then, has been a part of every good faith discussion ever since: in exchange for constraints (by license or recommendation as to government mandate) on signal transmission or recording, content providers must accept "encoding rules" that define and limit the circumstances in which such constraints may be triggered, so as to preserve the reasonable and customary expectations of consumers as to past, present, and future products. Although the "DVRA" itself was never enacted, its draft "encoding rule" regime was followed, as to analog recording products, in Section 1201(k) of the Digital Millennium Copyright Act of 1998 (the "DMCA").

PHILA Lacks Encoding Rules.

One longstanding complaint, by HRRC and others, about the CableLabs version of PHILA has been that its "compliance rules" lack any such protection for consumers. These rules would define various "copy protection" states, including "never copy," but fail to impose any limitations on when these states may be used, or when the constraining technology may be triggered. Therefore, the CableLabs version of PHILA *would leave it entirely open to content providers and cable operators to use "never copy" encoding and triggers* for all sorts of programs, including those originated as free, over-the-air broadcasts.

HRRC has long advocated that the consumer protections adopted in Section 1201(k)—the only product design mandate in that section—be employed elsewhere, as well. These "encoding rules" limit the use of "never copy" encoding to pay-per-view and video-on-demand programming. As to all other programming, the consumer can make at least one generation of copies, and no interference is allowed with consumer recording of programs originating as free, over-the-air broadcasts or as basic cable programming.

The Staff Draft Anticipates Encoding Rules.

As to PHILA, the staff draft provides that "any" encoding rules must respect the consumer protections discussed above. However, it does not specifically require that encoding rules must be included in the FCC regulations, or in PHILA. In order to afford consumers the protection that the draft otherwise would provide for them, this should be corrected.

As to the "broadcast flag," HRRC supports the encoding rules of section 5(b)(4) of the staff draft, which provide that the broadcast flag may not be used "to signal protection for news and public affairs programs (including political debates)." We would encourage the Committee to expand the scope of this section to include educational programs, as well as such other programs as the Commission believes the broad redistribution of which would be in the public interest.

ANALOG OUTPUTS ARE AND MUST BE HEAVILY RELIED UPON BY CONSUMERS.

Analog broadcasts and device outputs have been a public policy target for various reasons. The Congress and the FCC would like to eliminate analog broadcasts so as to speed the digital transition, and recover the existing analog spectrum for auction. Movie studios would target high definition analog ("component video" and "RGB") outputs for extinction, because they cannot feasibly be copy protected (even if subject to "encoding rules") unless some "watermark" technology is agreed upon and an enforcement system is legislated.

HRRC has no position of record as to whether the return of analog spectrum by 2006 should be conditional or unconditional. HRRC is committed, however, to policies that would *maintain the utility of television displays and recorders that rely on analog inputs* and were purchased by the American public in good faith. Even in the digital age, it must remain possible to provide an appropriate, high-quality output for every input on which consumers rely.

The Staff Draft's Treatment Of Analog Outputs Needs To Be Revisited.

Even if the staff draft did not provide for the unconditional termination of analog broadcasts by 2006, its provision banning all analog outputs of products that demodulate digital broadcasts would need to be revisited.

The following categories of display devices in consumers' homes today have *only* analog inputs:

- Most of the three million DTV or HDTV-ready displays sold to date. (These have higher bandwidth "component video" analog inputs).
- All other (250 million-plus) television receivers sold to date that are still in consumers' homes. (Various "RF," [*e.g.*, channel 3], component, composite, and "S" inputs.)

- All analog VCRs, and many digital recording devices. (Same as TVs and DTVs.)
- Most PC monitors sold to date. (These have high-bandwidth "RGB" inputs.)

Together, these add up to perhaps *500 million units.* The question, then, is what sort of hardship would the analog ban impose on the use of these devices, and what is its justification?

The provision in the staff draft—subsection (b)(3) of Section 5—does not have a clear antecedent. Subsections (b)(1) and (b)(2) outline a technical regime that embraces *both* products that demodulate digital broadcast signals, *and* products that distribute those signals via a Multichannel Video Program Distribution ("MVPD") service. Subsection (b)(3) then stands alone, in requiring that the FCC regulations implementing such a regime must provide for "the termination of the manufacture of equipment that has analog outputs by July 1, 2005."

To which "equipment" would (b)(3) apply? Possibilities are:

(1) only equipment that demodulates a DTV broadcast signal
(2) equipment as in (1), plus devices that receive a digital output directly from equipment (1)
(3) (1) and (2), plus devices used to receive MVPD (e.g., cable and satellite) programming if originated as a broadcast

In HRRC's view, none of these possible consequences should be viewed as acceptable. Case (1) would simply add expense for consumers, to little apparent end. For every analog TV or VCR now reliant on antenna, the consumer would have to purchase a DTV converter plus a digital-to-analog converter, rather than a DTV converter with an analog output. Even PC owners with tuner cards would have to add a digital-to-analog converter. The result would be the same either way, except that the consumer would have to pay more. Or, the consumer would be forced to acquire a cable or satellite converter for every TV in the house.

Case (2) would rule out the broadcast DTV converter option entirely. Every TV and VCR, to be functional, would need to be connected to a cable or satellite service, as a matter of law. Even PCs with digital tuner cards could not provide programs to most monitors in existence today. Case (3) would simply consign most existing TV receivers and VCRs, including almost all of the three million DTV and HDTV receivers purchased in the last few years, to displaying prerecorded content only (unless (b)(3) were interpreted as prohibiting analog outputs from playback devices as well).

HRRC stands ready to comment on any more specific version of (b)(3). It has long been HRRC's position of record that HRRC is willing to discuss any proposal that would address content owner "analog hole" concerns, but that in the implementation of any such proposal, technological progress and innovation should not be chilled or impaired; appropriate encoding rules, as discussed above, should be agreed to and enforced; and adverse effects on consumers' legacy devices should be avoided. HRRC is skeptical that the alternative of shutting off analog outputs could produce a result fair or acceptable to consumers.

THE BROADCAST FLAG RULEMAKING PROVISIONS SHOULD SECURE CONSUMER RIGHTS TO FLEXIBLE PERSONAL USES OF DIGITAL EQUIPMENT

Navigating the tensions between the fair and reasonable expectations of consumers, yet trying to help content providers prevent broad-scale redistribution of programs, calls for careful analysis and balancing. The Broadcast Protection Discussion Group sessions were often contentious, and could not provide any consensus input on some significant policy questions. These include the scope of protection to be applied, and the means by which protection technologies could be certified as satisfying these expectations and interests. HRRC believes that the staff draft has gone a long way toward charting a fair and balanced course between these goals.

Scope of Protection

HRRC agrees with the formulation in the staff draft that the proper scope of protection should be "to prevent the unauthorized distribution of marked digital terrestrial broadcast television content *to the public over the Internet*." One of HRRC's core concerns is that the flexibility offered by new digital communications technology not be reserved for enjoyment *only by content industries.* Subsection (a) of Section 5 of the staff draft correctly recognizes consumers' entitlement to use new digital technologies for personal purposes, such as sending content to second residences, vehicles or close family members, without threatening the legitimate marketplace for licensing and syndication of television content.

HRRC SUPPORTS SELF-CERTIFICATION ACCORDING TO OBJECTIVE TECHNICAL CRITERIA

Perhaps the most contentious debate in the BPDG concerned the criteria used to determine which protection technologies could be used to output and record digital broadcast content. HRRC applauds the staff draft for promoting objective technical criteria and possible self certification.

• *Objective Technical Criteria.* Technical levels of protection should be specified so that any technology company that wishes to compete in the marketplace need only meet clear, well-defined and neutral criteria. As the staff draft observes, the criteria should be set only "high enough" to achieve the stated goals of the Broadcast Flag, without unnecessarily burdening product design, manufacture or performance, or stifling innovation into new technologies.

• *Self-Certification.* HRRC further appreciates the draft's reliance on manufacturer self-certification, rather than adding some *approval* step before products can be offered on the open market. Self-certification under objective technical criteria should help ensure that new technologies will reach the market without undue delay.

HRRC believes that this Committee's overall focus and insistence on advancing the digital transition while protecting consumers' reasonable and customary expectations is necessary and laudable. The staff legislative draft produced by this Committee's leadership has shown concern and sensitivity toward the issues HRRC has raised for several years. We will be pleased to work with any entity sharing the goals of this Committee's leadership.

PREPARED STATEMENT OF MARK JACKSON, SENIOR VICE PRESIDENT, ECHOSTAR TECHNOLOGIES CORPORATION

EchoStar Communications Corp. ("EchoStar") applauds the Committee's continued attention to the digital transition and thanks Chairman Tauzin and Committee Members for this opportunity to comment on the Staff Discussion Draft legislation (Draft).

EchoStar started 21 years ago providing large, C-band satellite TV dishes to rural Americans. The demand grew quickly as consumers, schools and businesses sought television service in areas untouched by cable or off-air network TV signals. In 1996, we launched the small dish satellite TV service called DISH Network to provide competitive television services to urban and suburban consumers as well as those in rural areas. Since its debut, EchoStar's DISH Network has been the leader in the pay television industry in offering low prices for superior, digital television products. Other notable items about EchoStar include the following:

a) EchoStar began lowering its prices for satellite TV equipment to offer affordable or even free equipment and switched its annual programming fees for consumers to monthly rates, all in an attempt to compete better with cable companies.
b) Today, DISH Network offers consumers four main programming packages starting with America's Top 50 for $22.99 per month for over 60 channels that include the best in entertainment, sports, news and children's programming.
c) DISH Network has been ranked either #1 or #2 for each of the last four years in the J.D. Power and Associates' customer satisfaction survey among satellite and cable TV subscribers.
d) We currently have 8 high-power direct broadcast satellites in orbit, and we expect to launch one more satellite within the next year to expand our local TV channel service, to comply with must-carry rules and to offer other services.
e) We have invested billions of dollars and extensive technological resources to compete vigorously in the marketplace with cable and to make satellite technology affordable and accessible for all Americans.

EchoStar is a leader in digital television. Our platform has been digital from the start and we believe that consumers desire quality, high definition (HD) programming. We have developed sound business strategies for harnessing this demand and in the process are driving consumer adaptation of digital receiver technology.

Specifically, we currently offer five programming services that contain HD content. We recently announced our agreement with Discovery Communications, Inc. to carry Discovery's new all-HD channel, Discovery HD Theater. We believe that Discovery's compelling programming is well suited to HD and that consumers will respond positively to this new service. We also entered an agreement last year with CBS to carry the digital signal of a major-market CBS owned-and-operated station to our subscribers who reside in either (a) markets served by CBS owned-and-operated stations; (b) unserved areas; or (c) markets where the non-owned-and-operated

CBS affiliate has agreed to allow EchoStar to provide the CBS digital signal. CBS today offers network programming in HD and we are confident that it will offer an increasing amount of compelling HD content. We also offer HBO, Showtime, and certain pay-per-view programs in HD. Finally, EchoStar provides an HD demonstration channel.

In addition to providing HD content on our satellite-delivered programming services, we also facilitate over-the-air reception of broadcasters' digital signals. Specifically, the Model 6010 set-top box that EchoStar subscribers must use to view our HD programming also allows the subscriber to insert an optional 8-VSB over-the-air receiver module. Thus, in addition to viewing EchoStar's HD programming, a subscriber may view any locally-originated HD broadcasts.

EchoStar's commitment to digital television is clear. While others have talked about going digital, we put our money where our mouth is and invested in the digital future. We support the goals and spirit of the Committee's draft legislation and offer the following comments and suggestions that we believe will make this an even better bill:

The proposed phase-out of analog outputs could strand tens of millions of consumers with obsolete television receivers, VCRs, and set-top boxes and should be replaced with a more technology-neutral provision.

EchoStar does not object to imposition of a broadcast flag requirement, provided that the requirement is flexible and allows EchoStar to continue its track record of providing successful signal security that requires minimal capacity and satisfies both content providers and subscribers. For the most part, the Committee's draft strikes an appropriate balance. However, one element of the Committee's proposal would cause severe disruption to consumers while doing little to achieve the Committee's goals.

The bill would prohibit the manufacture of equipment with "analog outputs" starting July 1, 2005.[1] To tens of millions of consumers, it would mean having to buy a household-worth of new electronics equipment. Hundreds of millions of television receivers, audio stereo receivers, video cassette recorders, Digital Versatile Disk players, personal video recorders, satellite set-top boxes, and cable set-top boxes that currently employ analog inputs and have usable lifetimes stretching into the next decade could be rendered obsolete for consumers wishing to attach new equipment. EchoStar and other companies that manufacture video equipment must take into account the legacy base of analog television receivers currently in the market. In fact, a state-of-the-art EchoStar digital set-top box today will work just as well with a 1950's vintage black-and-white TV as it will with a digital, plasma flat-screen TV. EchoStar's platform—from the uplink facility, to the satellite, to the consumer's home dish is all digital, and EchoStar offers consumer equipment with digital outputs for those consumers who have purchased digital televisions. However, all EchoStar equipment also offers analog outputs. In this way, EchoStar can offer high-quality digital equipment to a population that still relies on an existing base of analog receivers. The Committee's proposed provision would require EchoStar to design equipment that is not compatible with the majority of our subscribers' current TV receivers and would require tens millions of consumers—not just EchoStar subscribers—to purchase new equipment.[2]

In addition, it is not clear whether the provision would eliminate analog outputs of all kinds, including those that are used today to complement digital platforms. For example, analog technology is incorporated into component HDTV; stereo audio; headphones; camcorders; and telephone speakers, among other items. The prohibition against analog outputs would impact the use of such devices unnecessarily.

Finally, the analog prohibition also seems to undermine the internal consistency of the bill. On the one hand, the bill directs the FCC not to "impose unnecessary or unreasonable burdens on product design" or to otherwise "stifle innovation,"[3] clearly recognizing the fluid and unpredictable nature of technology development and the imperative of keeping regulatory mandates out of the laboratory and the technology marketplace. The bill also directs the FCC to "protect the full functionality" of equipment manufactured before January 1, 2006,[4] an acknowledgement that the new policy must take into account legacy consumer electronics equipment. Yet the bill's own prohibition against manufacturing equipment with analog

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[1] *See* Draft at Sec. 5 (establishing new section 47 U.S.C. 340; 340(b)(3)).

[2] EchoStar acknowledges the Committee's endorsement of the FCC's digital receiver component implementation schedule, see Draft at Sec. 9, but does not believe that this would solve the dilemma faced by consumers in 2005 who would like to purchase DBS equipment or a new VCR without having to replace their existing television receiver.

[3] *See* Draft at Sec. 5; new sec. 340(b)(2)(B).

[4] *See id.* at new sec. 340(b)(2)(C).

outputs after a date certain directly contradicts these directives by making a technology-specific rule that would render obsolete a vast swath of legacy consumer electronics equipment. For an agency like the FCC charged by law with implementing statutes in their entirety,[5] this is a recipe for an unpredictable outcome.

The Committee presumably included a prohibition against devices with analog outputs in order to avoid the circumvention of a digital broadcast flag. EchoStar believes that this is an admirable goal, but one which should be achieved less disruptively by simply directing the FCC to take that problem into account, using the parameters already laid out in the bill, without mandating a technology-specific rule impacting consumers' existing equipment.

I. THE PROPOSED CABLE COMPATIBILITY PROVISION COULD UNDERMINE COMPETITION POLICY BY FAVORING CABLE OVER OTHER MVPDS.

In general, EchoStar believes that the cable industry has leveraged its MVPD market dominance into the navigation device market. EchoStar therefore applauds any effort by the Committee to infuse more market discipline against cable. As currently drafted, however, the Committee's proposed digital cable compatibility provision could have the unintended consequence of solidifying cable's market dominance rather than reducing it.

As a practical matter, DBS operators appropriately do not face compatibility requirements because DBS has never posed the same problems in this area as has cable. The FCC found in implementing the current rules that, unlike cable boxes that were only usable within certain territories and only available from the cable operators themselves, DBS equipment is usable anywhere in the U.S. due to DBS's national footprint, and is obtainable from any number of retailers unaffiliated with DBS operators.[6] These circumstances have not changed since the FCC first implemented the cable compatibility rules, as the Committee apparently recognized by keeping the focus of the compatibility provision on cable.

In contrast to this traditional differentiation in the compatibility rules between cable and other competing MVPDs like DBS, however, the proposed provision could place an unnecessary competitive burden on companies like EchoStar. First, the provision appears to require point-of-deployment (POD) modules compatible with digital receivers.[7] If this were to result in integrated TV receivers with plug-and-play functionality for cable, but not satellite or other MVPDs, consumers who already own such integrated receivers would not have to acquire additional equipment to get cable, but would need new equipment to get DBS or another MVPD. This would give an unnecessary competitive advantage to the already entrenched incumbent cable operator. The Committee should take great care to not give cable such an advantage and to restrict the compatibility rules only to cable set-top boxes, not TV receivers generally.

Second, as described above, EchoStar manufactures set-top boxes with over-the-air receivers integrated into the box. Because the bill applies to equipment "capable of receiving" digital over-the-air signals,[8] it appears to require EchoStar to build cable POD functionality into such boxes. This would impose a significant cost on EchoStar without producing a single benefit to consumers, especially since the typical DBS subscriber is a formerly unsatisfied cable subscriber.

The Committee should ensure that, in using the cable compatibility rules to speed up the digital transition, it does not undermine the pro-competition goal of the compatibility provision itself. As currently drafted, the bill appears to give cable a windfall benefit while imposing on DBS an unnecessary cost, all at the expense of consumers. The Committee should ensure that any new legislation does not unfairly tip the balance of the marketplace in favor of one industry over another.

EchoStar supports the Committee's efforts to complete the digital transition and looks forward to working closely with Chairman Tauzin and other Members to devise a pro-consumer, pro-competition means of bringing digital television to fruition.

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[5] *See, e.g., Bell Atlantic Tel. Co. v. FCC,* 131 F.3d 1044, 1045-47 (D.C. Cir. 1994) (applying plain meaning of provisions regarding BOCs' ability to offer interLATA services would lead to internal inconsistencies within the statute; FCC therefore should examine "context" of entire statute); *Alarm Industry Communications Committee v. FCC,* 131 F.3d 1066, 1070-71 (D.C. Cir. 1997) (FCC could not apply dictionary definition of "entity" because this caused one provision to nullify another; FCC should examine Congressional intent).

[6] *See Implementation of Section 304 of the Telecommunications Act of 1996; Commercial Availability of Navigation Devices,* 13 FCC Rcd. 14775, Report and Order, at ¶¶ 64-66 (June 24, 1998).

[7] *See* Draft at Sec. 8 (implementing, *inter alia,* new section 624A(d)(2)(B)).

[8] *See id.,* adding new section 624A(c)(2)(G).

ABOUT ECHOSTAR COMMUNICATIONS CORPORATION

EchoStar Communications Corporation is one of the leading direct broadcast satellite (DBS) television providers and DBS equipment designers in the United States. Headquartered in Littleton, Colo., EchoStar consists of over 14,010 employees worldwide with Customer Service Centers in Littleton and Thornton, Colo.; McKeesport, Pa.; El Paso, Texas; Christiansburg, Va.; and Bluefield, West Va. EchoStar's state-of-the-art satellite uplink centers in Cheyenne, Wyo., and Gilbert, Ariz., transmits signals to and from EchoStar's eight satellites. EchoStar's satellite fleet already provides capacity of more than 500 channels for its more than 7 million DISH Network™ customers nationwide. DISH Network offers HDTV, interactive services, international channels, satellite Internet service, plus popular digital video and audio channels, such as *Disney, ESPN, The Weather Channel* and local stations in more than 40 U.S. cities. EchoStar (NASDAQ: DISH) is included in the NASDAQ-100 Index and is listed as a Fortune 500 company.

ECHOSTAR COMMUNICATIONS CORPORATION INCLUDES TWO PRIMARY BUSINESS UNITS:

- **DISH Network**™ is EchoStar's state-of-the-art direct broadcast satellite TV system that is capable of offering over 500 channels of digital video and CD-quality audio programming, as well as fully advanced satellite television receiver hardware and installation. DISH Network satellite television systems are available in major retail stores, such as Sears, Sam's Club, Costco, P.C. Richard & Son and HH Gregg, as well as in over 20,010 independent electronics stores across the country. DISH Network was ranked number one in the American Customer Satisfaction Index (ACSI) conducted by the University of Michigan Business School in 2001.
- **EchoStar Technologies Corporation** designs, distributes and oversees the manufacturing of DBS set-top boxes, antennas and other digital equipment for DISH Network and various international customers, including Bell ExpressVu Canada and the Vía Digital system in Spain. ETC has also provided construction oversight and project integration services for customers internationally. ETC also oversees EchoStar Data Networks Corporation in Atlanta, a designer of broadband IP streaming products and services for DISH Network. DISH Network also provides the delivery of interactive video, audio and data services to business television customers and other satellite users. These services include satellite uplink, satellite transponder space usage, business solutions and other services. DISH Network also oversees the design and delivery of interactive television services and satellite equipment.

ABOUT MARK JACKSON

SENIOR VICE PRESIDENT, ECHOSTAR TECHNOLOGIES CORP.

Mark Jackson is responsible for EchoStar Technologies Corporation, as well as the six coupled business units that address markets that fall outside of the current Dish Network residential market: Product Marketing and Architecture, Business Television Operations, Broadcast and Interactive Data Services, New Business Ventures, Educational Services, Transmission and Satellite Services. Starting in 1993, Jackson served as vice president of Engineering at EchoStar. Prior to joining EchoStar, Jackson was director of Engineering at Tandon Corporation, Inc., where he was responsible for product development, strategic planning and new product conception and definition. He earned his degree in electrical engineering from Texas Tech University.

PREPARED STATEMENT OF THE HOME RECORDING RIGHTS COALITION

Consumer expectations about their use of home viewing displays, and home recorders, must be satisfied if the digital transition is to succeed. Yet, in the last few years we have seen license and regulatory proposals, aimed at other targets, call into question whether consumers will be able to use their HDTV and other displays in ways they clearly expected when they bought them. The staff legislative draft produced by this Committee's leadership has shown concern and sensitivity toward this problem.

The basic question, raised by proposals such as the "PHILA" license, and addressed by the draft legislation, is whether home-based consumer electronics and information technology products should be constrained in their operation, out of concern that non-home networks have become capable of delivering *too much content.* Ironically, just as Congress, the courts, and the motion picture and recording indus-

tries have acknowledged consumer fair use as a *principle,* the threat to actual consumer practices has grown and spread, even beyond home recording.

Twenty years ago, when the HRRC was formed, the question was whether product innovations such as the VCR should be suppressed, out of concern that recording within the home would damage content providers. Today the question remains not only whether such recording products should be suppressed or constrained, but also whether display products should be disabled as well.

THE STAFF DRAFT TAKES MAJOR STEPS FORWARD RE THE "PHILA" LICENSE.

Ironically, the FCC is in a position to enforce *anti-consumer* license provisions because of a provision in the 1996 Telecommunications Act that was meant to be explicitly *pro-consumer.* Section 304 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 in CS Docket 97-80 (which remains open). CableLabs volunteered and was chosen by the FCC to set such standards. One of those standards is for a security interface, to empower a range of competitive devices to work on digital cable by accepting a "Point of Deployment Module," or "POD."

CableLabs Demands In The "PHILA" License

The version of a "POD-Host Interface License Agreement" ("PHILA") demanded of manufacturers by CableLabs is not just a license for the patent necessary to use this security interface. It is, rather, a comprehensive contract that would require the manufacturer to implement additional technical specifications and provisions. These specifications and contract provisions would eliminate much home recording, and could cause even recently purchased displays to "go dark" or accept signals of reduced resolution. It would require that newly introduced digital interfaces, widely accepted as secure, may be shut off at the whim of the movie studio or cable operator.

According to the CableLabs specifications to which PHILA would require adherence, all licensed devices would be required to read and respond to data called "Extended Copy Control Information." The requirement to read and respond to this data would allow commercial entities *outside the home* to control, on a program by program basis, which wire (or wireless) outputs from the device would be active, *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, by remote control, the wire connecting one home device to another.*

The "interfaces" turned off by remote control serve the HDTV displays, as well as any recorders. So by shutting off the wire with the high resolution output, the movie studio or cable operator is also shutting off the high definition signal to the HDTV display. This means that a consumer who recently has bought a state of the art HDTV receiver, with a copy-protected digital interface, *could still have the digital signal from a set-top box receiver cut off.* Nor could that consumer fall back on the "component video" analog interface—that could be turned off also by remote control. This regime is referred to as "Selectable Output Control," and is a mandatory element of a mandatory specification in the version of the PHILA license that CableLabs has offered to product manufacturers.

Most HDTV displays in the market today, and sold over the last three years, rely on "component video"—the same sort of analog 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.") Even if the movie studio or cable operator does not choose to turn that interface off entirely, another provision of PHILA would explicitly allow the content provider or cable operator to trigger the *removal of three-fourths of the resolution* of signals transmitted over these component video analog outputs. This is referred to as "downresolution" in the license.

Why would a movie studio or operator choose to shut off a wire that enables *viewing,* as well as recording? Because certain studios have views, based on their own plans and preferences, as to what sort of equipment should be allowed into the marketplace. By reserving the right to shut off the digital and analog interfaces that best support home recording, they can drive the market *toward employing only digital interfaces that do not support home recording.*

After being questioned closely about this requirement by the leadership of this Committee, the Motion Picture Association of America ("MPAA") advised Chairman Tauzin by letter that it no longer is demanding Selectable Output Control (though

it continues to insist on "downresolution"). However, the cable industry, through CableLabs and NCTA, has continued to demand agreement to both "Selectable Output Control" and "downresolution" from any manufacturer wishing to be licensed under the patent over the "POD" interface.

Staff Draft Provision Re PHILA

The staff draft addresses the PHILA license issues in several constructive ways:

- It instructs the FCC to ban impositions on consumer products, "directly or indirectly," other than as necessary to prevent "theft of services and physical harm to the cable system;"
- It requires FCC regulations to ensure that not only set-top boxes, but also *receivers, recorders, and displays* must be supported by nationwide interoperability with digital cable systems;
- It requires a family of uniform, open standards, administered by an organization accredited by the American National Standards Institute (ANSI) (rather than closed, proprietary CableLabs specifications); and
- It requires that there be no impositions on devices that would result in "the altered or diminished functionality of a consumer's digital television reception, recording, and display equipment as intended for legal, noncommercial use."

In instructing the FCC to clarify or interpret its regulations so as to prevent impositions on consumers of the sort that PHILA would wreak, the staff draft has taken a big step forward.

THE DRAFT RECOGNIZES THE IMPORTANCE OF "ENCODING RULES," BUT SHOULD REQUIRE THEM MORE EXPLICITLY.

The era of public policy negotiations over copy protection status of digital consumer devices began in 1993, with attempts by the HRRC and the motion picture industry to draft and seek introduction of a mutually-acceptable "Digital Video Recording Act" ("DVRA") that would provide balanced outcomes as to new products. The basic tradeoff, first put on the table then, has been a part of every good faith discussion ever since: in exchange for constraints (by license or recommendation as to government mandate) on signal transmission or recording, content providers must accept "encoding rules" that define and limit the circumstances in which such constraints may be triggered, so as to preserve the reasonable and customary expectations of consumers as to past, present, and future products. Although the "DVRA" itself was never enacted, its draft "encoding rule" regime was followed, as to analog recording products, in Section 1201(k) of the Digital Millennium Copyright Act of 1998 (the "DMCA").

Broadcast Flag Encoding Rule

We support section 5(b)(4) of the staff draft, which provides that the broadcast flag may not be used "to signal protection for news and public affairs programs (including political debates)." We would encourage the Committee to expand the scope of this section to include educational programs, as well as such other programs as the Commission believes the broad redistribution of which would be in the public interest.

PHILA Lacks Encoding Rules.

One longstanding complaint, by HRRC and others, about the CableLabs version of PHILA has been that its "compliance rules" lack any such protection for consumers. These rules would define various "copy protection" states, including "never copy," but fail to impose any limitations on when these states may be used, or the constraining technology may be triggered. Therefore, the CableLabs version of PHILA *would leave it entirely open to content providers and cable operators to use "never copy" coding and triggers* for all sorts of programs, including those originated as free, over-the-air broadcasts.

HRRC has long advocated that the consumer protections adopted in Section 1201(k)—the *only* product design mandate in that section—should be employed elsewhere, as well. These "encoding rules" limit the use of "never copy" encoding to pay-per-view and video-on-demand programming. As to all other programming, the consumer can make at least one generation of copies, and no interference is allowed with consumer recording of programs originating as free, over-the-air broadcasts or as basic cable programming.

The Staff Draft Anticipates Encoding Rules.

The staff draft provides that "any" encoding rules must respect the consumer protections discussed above. However, it does not specifically require that encoding rules be included in the FCC regulations, or in PHILA. In order to afford consumers

the protection that the draft otherwise would provide for them, this should be corrected.

ANALOG OUTPUTS ARE AND MUST BE HEAVILY RELIED UPON BY CONSUMERS.

Analog broadcasts and device outputs have been a public policy target for various reasons. The Congress and the FCC would like to eliminate analog broadcasts so as to speed the digital transition, and recover the existing analog spectrum for auction. Movie studios would target high definition analog ("component video" and "RGB") outputs for extinction, because they cannot feasibly be copy protected (even if subject to "encoding rules") unless some "watermark" technology is agreed upon and an enforcement system is legislated.

HRRC has no position as to whether the return of analog spectrum by 2006 should be conditional or unconditional. HRRC is committed, however, to policies that would *maintain the utility of television displays and recorders that rely on analog inputs* and were purchased by the American public in good faith. Even in the digital age, it must remain possible to provide an appropriate, high-quality output for every input on which consumers rely.

The Staff Draft's Treatment Of Analog Outputs Needs To Be Revisited.

Even if the staff draft did not provide for the unconditional termination of analog broadcasts by 2006, its provision banning all analog outputs of products that demodulate digital broadcasts would need to be revisited.

The following categories of display devices in consumers' homes today have *only* analog inputs:

- Most of the three million DTV or HDTV-ready displays sold to date. (These have higher bandwidth "component video" analog inputs).
- All other television receivers sold to date. (Various "RF," [*e.g.,* channel 3], component, composite, and "S" inputs.)
- All analog VCRs, and many digital recording devices. (Same as TVs and DTVs.)
- Most PC monitors sold to date. (These have high-bandwidth "RGB" inputs.)

Together, these add up to perhaps *500 million units.* The question, then, is what sort of hardship would the analog ban impose on the use of these devices, and what is its justification?

The provision in the staff draft—subsection (b)(3) of Section 5—does not have a clear antecedent. Subsections (b)(1) and (b)(2) outline a technical regime that embraces both products that demodulate digital broadcast signals, *and* products that distribute those signals via a Multichannel Video Program Distribution ("MVPD") service. Subsection (b)(3) then stands alone, in requiring that the FCC regulations implementing such a regime must provide for: "the termination of the manufacture of equipment that has analog outputs by July 1, 2005."

To which "equipment" would (b)(3) apply? Possibilities are:

(1) only equipment that demodulates a DTV broadcast signal
(2) equipment as in (1), *plus* devices that receive a digital output directly from equipment (1)
(3) (1) and (2), *plus* devices used to receive MVPD (e.g., cable and satellite) programming if originated as a broadcast

In HRRC's view, none of these possible consequences should be viewed as acceptable. Case (1) would simply add expense for consumers, to little apparent end. For every analog TV or VCR now reliant on antenna, the consumer would have to purchase a DTV converter plus a digital-to-analog converter, rather than a DTV converter with an analog output. Even PC owners with tuner cards would have to add a digital-to-analog converter. The result would be the same either way, except that the consumer would have to pay more. Or, the consumer would be forced to acquire a cable or satellite converter for every TV in the house.

Case (2) would rule out the broadcast DTV converter option entirely. Every TV and VCR, to be functional, would need to be connected to a cable or satellite service, as a matter of law. Even PCs with digital tuner cards could not provide programs to most monitors in existence today. Case (3) would simply consign most existing TV receivers and VCRs, including almost all of the three million DTV and HDTV receivers purchased in the last few years, to displaying prerecorded content only (unless (b)(3) were interpreted as prohibiting analog outputs from playback devices as well).

HRRC stands ready to comment on any more specific version of (b)(3). It has long been HRRC's position that it is willing to discuss any proposal that would address content owner "analog hole" concerns, provided that technological progress and innovation are not impaired, and that appropriate encoding rules, as discussed above, are implemented and enforced at the same time. HRRC is skeptical that the alter-

native of shutting off analog outputs could produce a result fair or acceptable to consumers.

THE BROADCAST FLAG, FLEXIBLE PERSONAL USES.

Navigating the tensions between the fair and reasonable expectations of consumers, yet trying to help content providers prevent broad-scale redistribution of programs, calls for careful analysis and balancing. The Broadcast Protection Discussion Group sessions were often contentious, and could not provide any consensus input as to some significant policy questions. These include the scope of protection to be applied, and the means by which protection technologies could be certified as satisfying these expectations and interests. HRRC believes that the staff draft has gone a long way toward charting a fair and balanced course between these goals.

Scope of Protection

HRRC agrees with the formulation in the staff draft that the proper scope of protection should be "to prevent the unauthorized distribution of marked digital terrestrial broadcast television content *to the public over the Internet*." One of HRRC's core concerns is that the flexibility offered by new digital communications technology not be reserved for enjoyment *only by content industries*. Subsection (a) of Section 5 of the staff draft correctly recognizes consumers' entitlement to use new digital technologies for personal purposes, such as sending content to second residences, vehicles or close family members, without threatening the legitimate marketplace for licensing and syndication of television content.

HRRC SUPPORTS SELF-CERTIFICATION ACCORDING TO OBJECTIVE TECHNICAL CRITERIA.

Perhaps the most contentious debate in the BPDG concerned the criteria used to determine which protection technologies could be used to output and record digital broadcast content. HRRC applauds the staff draft for promoting objective technical criteria and possible self certification.

• *Objective Technical Criteria.* Technical levels of protection should be specified so that any technology company that wishes to compete in the marketplace need only meet clear, well-defined and neutral criteria. As the staff draft observes, the criteria should be set only "high enough" to achieve the stated goals of the Broadcast Flag, without unnecessarily burdening product design, manufacture or performance, or stifling innovation into new technologies.

• *Self-Certification.* HRRC further appreciates the draft's reliance on manufacturer self-certification, rather than adding some approval step before products can be offered on the open market. Self-certification under objective technical criteria should help ensure that new technologies will reach the market without undue delay.

HRRC believes that this Committee's overall focus and insistence on advancing the digital transition while protecting consumers' reasonable and customary expectations is necessary and laudable. We will be pleased to work with any entity sharing those goals.

INTEL CORPORATION
September 24, 2002

United States House of Representatives
The Committee on Energy and Commerce
2125 Rayburn House Office Building
Washington, DC 20515

DEAR CHAIRMAN TAUZIN & COMMITTEE MEMBERS, we appreciate the opportunity to comment with respect to some of the cable compatibility issues outlined in the recent draft bill circulated by the Committee ("Draft Bill") in advance of the September 25, 2002 hearings. We are still studying many issues addressed in the Draft Bill (and the specifics of the cable compatibility language) and look forward to an opportunity in the future to comment on the full range of issues addressed in the Draft Bill. With respect the cable compatibility issues, however, we would like to provide some general comments and applaud this Committee's efforts to advance the transition to digital television by creating a competitive marketplace for standards-based cable navigation devices.

We support the Committee's efforts as set out in the Draft Bill to advance the "right to attach" vision to all categories of qualifying devices, foster innovation and promote consumer choice by: (i) enabling device interoperability and safeguarding the network by limiting the scope of required specifications to the minimum extent necessary, (ii) opening the door to innovation, integration and market participation

through design freedom and self certification, (iii) safeguarding consumer rights and expectations by removing requirements that anti-consumer enabling features be included in all implementations, and (iv) opening the door for encoding rules that safeguard customary consumer practices.

We hope that the Committee finds the following comments useful. These comments (1) touch on general principles with respect to the development of a standards-based competitive market, and (2) apply those principles to the current Pod-Host Interface Specification ("Specification") and Pod-Host Interface License Agreement ("PHILA") currently being developed and offered by CableLabs under FCC oversight.

We would also like to take this opportunity to applaud the Committee's recognition in the Draft Bill of the importance of product labeling, especially with respect to restricted content. Intel strongly supports product labeling. Product labeling informs consumer choice. Labeling not only protects consumers against misleading products, but it also plays an important role in driving effective digital markets and the creation of new and exciting digital products that meet consumer demand with respect to choice, flexibility and portability. Indeed, as the world of digital rights management and access control technologies continue to grow and evolve, consumer protection efforts like those contemplated in labeling requirements are increasingly important. We encourage this Committee to not only pursue the labeling requirements set forth in its draft, but also mandate labeling of all restricted content so that consumers can participate in the digital marketplace with full knowledge and awareness whenever they buy, lease or rent restricted content.

INTRODUCTION

Intel Corporation is the world's largest semi-conductor manufacturing company. It is a leader in the development and deployment of digital communications and computing technologies. Intel has a direct interest in seeing a competitive, standards-based marketplace for cable compatible navigation devices based on the "right to attach" proscribed by Congress. Intel is interested not only because it wants the opportunity to provide navigation devices, but because of the broader opportunities to provide a wide array of interoperable computing devices and the building blocks for those devices. Intel is uniquely positioned to contribute to this discussion as an information technology company. We therefore offer these comments from that perspective.

CONGRESS' VISION.

Congress codified its vision of a competitive retail market for Navigation Devices in Section 629 of the Communications Act (entitled "Competitive Availability of Navigation Devices"). That vision contemplates rich consumer choice and product innovation in robust markets. Congress enabled that vision by giving all product and technology providers the right to attach their devices to cable television networks, only limiting that right to prevent harm to the network or theft of service. In light of the right to attach, the only technical obstacles standing in the way of this vision are the absence of standard interfaces that remove barriers to market entry and enable interoperability and product innovation. With standard interfaces in place, Congress believed the market would respond with products providing rich innovation and choice to the direct and immediate benefit of consumers and content providers alike. Intel shares Congress' vision.

INTEL SHARES CONGRESS' VISION: THE DIGITAL HOME INITIATIVE.

As digital communications and computing technologies advance, digital devices are both evolving and converging as the natural market demand for integration and interoperability marches forward. Intel shares' Congress' vision of a world where intelligent platforms and devices seamlessly interoperate in the home-networked environment, enabling consumers to enjoy any content, any place, in any device, any time, in new rich and compelling ways.[1] (Such products include not only computers, "smart" set top boxes, televisions, media players and recorders, game consoles, wireless tablets and peripherals, but devices we cannot even contemplate today.) To that end, Intel actively participates in cross-industry efforts to establish cooperative networked platforms providing vastly enhanced media value within the home. In addition, Intel has worked for the past six years with content providers to create and deploy digital content protection technologies. Those technologies are based on strict

[1] It goes without saying that enjoyment of copyrighted works should be done in authorized manners.

principles of interoperability and consistency with this vision.[2] Intel's vision is to enable any and all classes of digital devices to compete on a level playing field; enabling consumers to choose the products that best fit their particular needs.

COMPETITIVE STANDARDS BASED MARKETS: SOME PRINCIPLES FOR SUCCESS.

Over the years, Intel has participated in, and indeed driven, many efforts to grow competitive market-segments through interoperability specifications and industry standards, including, for example, USB, PCI, 802.11, and many others. We have learned a great deal through these efforts and appreciate the opportunity to share some of that knowledge with the Committee.

Creating a robust and competitive environment based on industry standards and specifications in large measure depends on removing barriers to market entry for new product offerings. There are many "best methods" for achieving this goal. The following are just a few culled from our years of experience in promoting efforts designed to remove barriers and foster a proliferation of market devices and participants. We have applied these general principles both in strict technology/interoperability efforts such as USB, and in efforts where principles of content protection (policy and technology) are also employed such as DTCP.

First, successful standards and specifications must limit required features ("normative references") to a very narrowly defined but robust interface specification. This will enable and promote interoperability, innovation and integration. Anything else not specifically required to achieve this technical objective and ensure interoperability must be included in the specification as an optional feature (an "informative reference"). While normative references should be minimal, a robust specification should contain those optional features that enable implementers to produce innovative products. This is particularly true in the cable environment where an understanding of an underlying cable technology may be imperative to innovation. The license and the specification, however, should clearly distinguish between normative and informative references

Second, implementers must have design freedom to enable them to implement the technology in ways that encourage not only diversity of product offering and application, but also enable differentiation from competing products in the market place. This underscores the importance of the point above.

Third, the specifications must be robust enough to permit innovation over time and enable features that the ultimate products' consumers will demand.

Fourth, and perhaps most important, implementers should be free to self certify their products' interoperability and compliance with the specification. Voluntary means for assisting implementers (such as test suites, software, plug fests, etc.) are useful, but self-certification is key as it eliminates bottlenecks and creates an even playing field for market entry.

IMPROVING PHILA AND THE SPECIFICATIONS.

Applying the principles set out above to both the PHILA and the Specifications reveals several areas of concern, particularly for makers of multi-function devices that have multiple configurations, like computers. Most of these issues are addressed by the draft license recently submitted to the FCC by the Consumer Electronics Association ("CEA Draft"), and Intel respectfully suggests that the Committee might find the CEA Draft useful. In the interest of brevity, in the following examination we have highlighted some of the larger issues but have not provided an exhaustive analysis. We would be pleased to discuss in greater detail any or all of these issues with the Committee at its convenience.

1. *The current PHILA/Specifications do not to accomplish Congress' goals.* From a technical and implementation perspective the PHILA/Specifications are simply too broad, and are not limited to a narrowly defined interface or even to necessary security technology. Rather, the PHILA/Specifications contain a whole host of features and functions that are unrelated to interoperability and security[3], and an extremely

[2] Such technologies include some the Committee may be familiar with, such as Digital Transmission Content Protection ("DTCP") offered by the 5C Entity LLC, Content Protection for Removable Media ("CPRM") and Content Protection for Pre-recorded Media (DVD Audio or "CPPM") offered by the 4C Entity LLC, and High-bandwidth Digital Content Protection ("HDCP") offered by Digital Content Protection LLC.

[3] Just by way of example, section 7.2.2 of the OpenCable Host Device Core Functional Requirements specifies requirements for the resolution, aspect ratio, frame rate, and scan sequence of a terminal host device's display. Another example, found in section 10, requires the navigation device to maintain network connectivity, consume power, and run the processor, operating system, and navigator shell, even though it is powered "off". In section 12, requirements include mechanical and environmental properties such as: Input Line Voltage, Input Line Frequency,

large number of related normative specifications are included by reference.[4] Despite the requirement that implementers must enable this broad range of features unrelated to the interface, there is no assurance or requirement of any kind that content providers and cable operators will ever even avail themselves of those features and functions. Intel recommends specifically limiting the Specifications to normative interface specifications approved by ANSI[5], and adopting the approach advocated by CEA in the CEA Draft. We believe that the Draft Bill takes substantial positive steps in this direction and we support the Committee's efforts in this regard.

2. *No real design freedom.* In light of the problems already identified in Paragraph 1 above, in reality, the PHILA/Specifications define a traditional set top box and undermine real design freedom, the ability to innovate, and the ability to integrate, navigation features and functionality into multi-function devices. The PHILA/ Specifications define a limited consumer device (both with respect to form and function) with specific features. The Specifications require strict compliance as to product design and operation unrelated to security. Moreover, the Specifications define functionality and mechanical integrity of products "as a whole" and not just with respect those portions of a device that in fact implement the Pod-Host Interface, or even those portions of a device that represent the "Host" instantiation. In addition, CableLabs retains discretionary power both to further define these features, and to replace the Specification with an entirely new or material different specification. It is even more troubling that the PHILA contains no requirement that any materially changed or new specification be backwards compatible with previous versions of the Specifications. This potentially makes entire generations of products and their associated capital investments worthless. The Compliance and Robustness Rules complicate these facts by opening the door for CableLabs to dictate the features and behavior of other technologies that might be approved outputs without regard for security concerns. Collectively, these issues not only eliminate design freedom, but create material barriers to market entry. Intel recommends eliminating all "requirements" unrelated to the interface and network security and allowing the market to drive product features and other functionality. In this context, Intel supports the approach adopted by the CEA in its draft, and supports the efforts of this Committee to move in these directions as evidenced by the Draft Bill.

3. *Anti-Consumer Features.* The PHILA fails to support, and in fact prohibits, consumer features such as moving PVR recordings to another device in the home network. Features like "move" are critical for consumers to be able to set up their home networks in a flexible manner.[6] In addition, enabling these features is necessary to create a level playing field among competing devices in the home network. On the other hand, PHILA/Specifications enable and require support for many anti-consumer features such as "selectable output control"[7] without providing any safeguards for product manufacturers and consumers with respect to how those features might be used. Requiring implementers to support anti-consumer capabilities with no guarantee that cable operators and content providers will respect consumer rights is not acceptable, either from a consumer perspective or from a product manufacturer perspective. Encoding rules, like those contained in the DTCP license offered by 5C, define the ways content providers may use a conditional access technology and establish a minimum set of consumer rights. For example, consumers should be guaranteed the right to record for time and space shifting purposes most programming as long as the recordings are reasonably protected against unauthorized Internet retransmission. Intel recommends that the Specifications be amended to include, e.g., "move" capability, and that a uniform set of encoding rules be included for the benefit and protection of consumers and device manufacturers alike.

Nominal Power Consumption, Physical Security/Tampering-Resistance, RF Susceptibility, Radiated RF, Conducted Lightning Surge Tolerance, Line Surge Test, Line Surge Test , Power Cross, Electrostatic Discharge, Brown Out Effects, Operating Ambient Temperature and Humidity, External Surface Temperature, Storage Temperature, Storage Humidity, Altitude, Thermal Shock, Humidity Shock, Solvent Resistance, Shipping Vibration, Mounting Feet, Keypad Keys, Impact Test, Static Load on Keypad Keys, Handling Drop Test, Strain Relief Test, Non-volatile Memory Battery Life, Microphonic Shock, etc. These types of requirements do nothing to promote interoperability, prevent theft of service, protect copyrights, or secure the cable network. Their only effect is to restrict innovation and product differentiation, add unnecessary and burdensome product cost, and limit consumer choice.

[4] The Specifications contain 130 separate normative references to other specifications and publications.

[5] Some of the security enhancements to those ANSI specifications, such as mutual authentication between host and pod, may be appropriate to carry over.

[6] Many consumers, for example, record a program in one room to watch later and then view that recording on a screen in another room.

[7] "Selectable output control" is the ability of a cable operator to "shut off" specific outputs of a consumer's device, such as the consumer's 1394 or USB connection.

Intel supports and recognizes the efforts of the Committee reflected in the Draft Bill to move in this direction.

4. PHILA contains many provisions that discourage entry into the market place. The license, for example, creates implementer liability not only to CableLabs but also to an extremely broad class of unnamed third party beneficiaries (content providers, cable operators, and others) for non-compliance with the PHILA/Specifications. Implementers also face the threat of injunction to stop the manufacture and sale of their products resulting from claims made by this same class of third party beneficiaries. There simply are no safe harbors for manufacturers, even if they obtain CableLabs certification for a specific product. The license also contains other over-reaching legal provisions, such as the covenants not to sue. Those provisions extend well beyond necessary or essential patent claims to implement an interface, and include the intellectual property contained in the entire product, even if only a portion of that product actually implements the Specifications. These kinds of provisions discourage adoption and Intel recommends adoption of an approach like that contemplated in the DTCP license agreement. That agreement both specifically identifies third party beneficiaries and the process for third party beneficiary claims and appropriately tailors the intellectual property provisions (such as the covenants not to sue) to narrowly cover no more than the interface itself. Intel believes that the Committee's affirmative statements in the Draft Bill that require reasonable and non-discriminatory licensing are specifically intended to covers of this nature, and we applaud the Committees efforts in this regard.

5. *The certification requirement.* Certification is another area that greatly discourages makers of multiple function devices to adopt the PHILA and implement the Specifications. The certification process is extremely broad with no assurance that products will be interoperable or portable to other systems. History suggests the process will be slow, expensive, and unpredictable and interfere with product introduction.[8] The complexity of the unnecessarily referenced specifications, coupled with detailed requirements regarding form factor and other features unrelated to security, make the certification requirement a bottleneck for market entry. In large measure this bottleneck is wholly unrelated to interoperability and security. Whole product cycles and valuable business opportunities can be lost to the certification process. In addition, as pointed out above, certification does not create a "safe harbor" with respect to liability, or even guarantee interoperability. The certification process is especially troublesome for makers of multi-function, and integrated devices as the process covers the entire "device" rather than just the "Host" implementation. The PHILA creates even more uncertainty because it couples these complexities with the need to individually certify both multiple device types and each particular product configuration. This is particularly true for computer products where multiple vendors offer multiple products with multiple configurations that change on a rapid basis in order to meet consumer demand and keep up with the evolution of technology and product innovation. For example, consumers today can go to leading PC OEMs and have their PC custom configured to meet their particular needs. Each and every configuration, each upgraded or slightly changed product must be separately certified with respect to the entire device before it can enter the market. The impact that this will have on the ability of multi-function devices to be cable compatible will be immeasurable. Therefore, Intel recommends that this serious defect be remedied by self-certification.

Self-certification is standard procedure for many interoperability specifications, including many that have been approved and are being deployed by the content community. Examples include DTCP, CPPM, CPRM, HDCP and CSS for DVD Video. The fact that DTCP and HDCP are approved outputs for OpenCable Navigation Devices, and CPRM is an approved recording technology, demonstrates that self-certification is appropriate and normal, even where content protection and security principles and technologies are deployed. In this context, Intel supports the self-certification approach reflected in the CEA draft. Intel applauds the Committee's recognition of the importance of self-certification by supporting self-certification in the Draft Bill.

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[8] CableLabs has reserved the right to charge for certification, but it is unclear what the fee might be. In addition, although the proposed certification period for an OpenCable device is six weeks, we question whether that is realistic. By way of example and comparison, for DOCSIS cable modem certification, there is a $98,010. Both DOCSIS and OpenCable use the "wave" process and guidelines. In this process, whenever a product is changed in the slightest manner, that slightly changed product must be re-submitted for certification with a fee. Certification "waves" begin in relative rapid succession (a few weeks apart), usually not giving the product manufacturer adequate time to even address the reasons for failure in time for the next "wave". Each certification "wave" takes (in the case of a modem) several months. Whole product cycles can easily be missed for immaterial failures.

SUMMARY AND CONCLUSIONS.

Intel's vision of the future Digital Home is not only consistent with, but embodies, Congress' vision of the future. As this Committee has recognized in its Draft Bill, the principles and issues raised in our analysis are not unique to computer manufacturers but reach all market participants and ultimately all consumers. Indeed, we appreciate the fact that this Committee shares our vision of the Digital Home, wherein all device manufacturers are able to compete openly and fairly. That vision will permit consumers to ultimately decide which selection of products, goods and services best fit their lifestyles and particular needs. Interoperability, innovation and integration create the path that leads not only to market opportunities for new and existing companies, but also to consumer satisfaction through choice, flexibility and portability. In this context, we again applaud this Committee's recognition of the importance of consumer labeling in the creation and development of effective digital markets. Intel believes that this Committee is making bold efforts to bring Congress' vision into line with the realities of standards-based, competitive markets, and we encourage and support further efforts in that direction.

Thank you for your consideration.

Respectfully submitted,

DONALD M. WHITESIDE
VP Legal & Government Affairs, Intel Corporation

PREPARED STATEMENT OF LAWRENCE J. BLANFORD, CHAIRMAN AND CHIEF EXECUTIVE OFFICER, PHILIPS CONSUMER ELECTRONICS NORTH AMERICA

WASHINGTON, DC—September 25, 2002—Philips applauds the efforts of Chairman Tauzin and Congressman Dingell to accelerate the transition to digital television.

The Committee staff discussion draft is comprehensive in its scope and bold in its approach. It advances the cause of the digital television transition by embracing several vital core principles.

Specifically, the draft recognizes that compatibility between cable systems and digital TV products is absolutely essential for the DTV transition to succeed. A consumer must be able to purchase, from a retail outlet, a "cable ready" digital TV receiver that works with a cable system anywhere in the country without a set top box.

The draft also recognizes the need to strike a proper balance between the legitimate rights of content providers to protect their digital content from unauthorized redistribution over the Internet to the public and consumers' expectations that they will be able to freely record and use such content for legitimate, noncommercial purposes.

The draft creates a framework in which the development of digital content protection technologies for use with the broadcast flag should promote competition and innovation rather than stifle it.

Philips looks forward to working with the Committee and others in Congress to enact DTV transition legislation that builds on this draft by protecting consumers, encouraging innovation in consumer products, and ensuring competition in the digital television marketplace.

ABOUT PHILIPS

Royal Philips Electronics of the Netherlands is one of the world's biggest electronics companies and Europe's largest, with sales of $28.8 billion (EUR 32.3 billion) in 2001. It is a global leader in color television sets, lighting, electric shavers, medical diagnostic imaging and patient monitoring, and one-chip TV products. Its 184,010 employees in more than 60 countries are active in the areas of lighting, consumer electronics, domestic appliances, components, semiconductors, and medical systems. Philips is quoted on the NYSE (symbol: PHG), London, Frankfurt, Amsterdam and other stock exchanges. News from Philips is located at www.news.philips.com

PREPARED STATEMENT OF THE RELIGIOUS VOICES IN BROADCASTING

INTRODUCTION

On behalf of the Religious Voices in Broadcasting, we submit the following statement for the record of the House of Representatives Energy and Commerce Committee hearing on digital television.

Diversity of opinions and the ability to express distinctive points of view are core elements of American life. Broadcast television serves as the single most identifiable medium to communicate and reach American citizens. Most Americans support expressions of varying beliefs, even when those expressions are contrary to their personal beliefs.

Unfortunately, the balance of diversity in broadcasting often disfavors small, independent broadcasters. These broadcasters are comprised in large part of religious broadcasters.

The specific issue of multicast must-carry is crucial for these voices to be heard. We ask the committee to take into account the concerns of our group, and the need for our programming to continue to be part of the American television experience—to ensure the very diversity that our nation treasures.

BACKGROUND

The 1992 Cable Act and its application to Digital Must Carry

In the 1992 Cable Act, Congress legislated that all free over-the-air broadcasters should be carried on a cable system up to ⅓ of a cable operator's channel capacity. This formula was carefully constructed after evaluating the number of cable channels and broadcast stations. This percentage formula ensured a balanced regulation that would be relevant as both cable and broadcast evolved.

In 1997 the Supreme Court determined that this requirement was reasonable, not an undue burden on cable operators, and most importantly, not an infringement of their First Amendment rights.

Digital technology allows cable operators to expand their systems to 400 channels or more. This expansion will add to programming capabilities of cable operators, and give audiences more viewing choices, not less. Digital television technology also allows for multiple streams of broadcasting within that same 6 mhz of spectrum that carried one channel of analog programming. Congress, while unable to anticipate the exact nature of emerging digital television technology, did anticipate in the 1992 Cable Act the necessity of must-carry requirements in "advanced television."

Nonetheless, in January 2001 the FCC under former Chairman Kennard ruled that only one "primary channel" from a digital broadcaster must be carried by a cable operator (either standard definition or high definition).

This decision to limit a broadcaster's must-carry rights to the "primary video stream" was an incorrect interpretation of the 1992 Cable Act. It has been harmful to the digital television transition by ensuring broadcaster's voices will be diminished, thus restricting the future of diverse voices in the market. This has proven to be particularly true with independent broadcasters.

With the implementation of must-carry in 1992, the vibrancy of television has been enhanced, increasing the choices of outlets and programming. Over the last 10 years, both broadcast and cable television have experienced tremendous growth marked by additional broadcast networks, strong independent stations, expanded cable channels, and a multitude of new program offerings.

However, free over-the-air broadcasting will be limited under the existing "primary channel" interpretation, as broadcasters will be dwarfed in a sea of hundreds of cable channels. To limit broadcasters to either one stream of a multicast of channels or a high definition signal instead of maintaining carriage of the entire 6 mhz of spectrum is financially unfeasible for most small and local broadcasters. Many will be unable to compete in a digital television world with these limitations.

Without full multicast must carry, cable operators will be in a position to exclude channels that compete directly with their owned services. Through vertical and horizontal integration, they may further consolidate editorial control and programming, thus eroding the diversity of voices.

Thus, carriage of only the one "primary channel" will not satisfy the governmental interests in preserving the benefits of free broadcast television that traditionally have been available to over-the-air viewers. Furthermore, it controverts the clear governmental interest mandated by Congress, and identified by the Supreme Court and justified by a carefully tailored maximum ⅓ cable capacity ceiling to ensure the widespread dissemination of information from a multiplicity of voices in the market.

CONCLUSION

This committee should require full must carry provisions of the entire 6 mhz of spectrum to hasten the digital transition. This should include all free over-the-air channels up to ⅓ of a cable operator's capacity. Multicast must carry will maintain the balance struck by Congress and upheld by the Supreme Court, which has allowed broadcasters to remain viable and enable the emergence of new networks and strong independent stations, while simultaneously allowing cable to grow and prosper with hundreds of new channels.

We are local and independent broadcasters that provide a diversity of important viewpoints, family friendly programming, and uplifting and inspirational entertainment. We support diversity in the medium, and while we know that must-carry must be content neutral, the essence of multi-cast must-carry provides for a variety of content that promotes our core mission as well as all other programmers.