

# DIGITAL TELEVISION: A PRIVATE SECTOR PERSPECTIVE ON THE TRANSITION

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## 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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## DIGITAL TELEVISION: A PRIVATE SECTOR PERSPECTIVE ON THE TRANSITION

THURSDAY, MARCH 15, 2001

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 2123, Rayburn House Office Building, Hon. Fred Upton (chairman) presiding.

Members present: Representatives Upton, Stearns, Deal, Cubin, Shimkus, Wilson, Terry, Tauzin (ex officio), Markey, Gordon, Rush, Eshoo, Engel, Green, McCarthy, Luther, Stupak, DeGette, Harman, Boucher, and Dingell (ex officio).

Also present: Representative Buyer.

Staff present: Jessica Wallace, majority counsel; Hollyn Kidd, clerk; Andrew Levin, minority counsel; and Brendan Kelsay, minority professional staff.

Mr. UPTON. Good morning, everyone. This is an important day, and we do know that tip-off time is 12:30. So, Mr. Franks, we do have you in mind. And I knew Mr. Markey was on the way. So I thought we would get started.

I would note for the record that we will allow all opening statements to be a part of the record from both the members as well as the witnesses before us today but note as well the House is in session and a number of us serve on multiple subcommittees. I have a number of them that are meeting today. So we will probably see members coming in and going out of this hearing. There is also a lunch with the President today at noon and tip-off at 12:30. So we will see where things take us.

What we are going to do this morning, first we will have the opening statements, and we have a brief video. And at that point, we will hear from the witnesses and subsequently engage in questions and answers.

Good morning. This is the first in a series of hearings intended to explore why the television industry's transition from analog to digital is a little bit off track. And although I may look a little bit young, I vividly remember some landmark advancements in TV technology, such as the advent of color TV and UHF, FM radio maybe on another little band.

Digital TV is yet another amazing technology, which will significantly enhance the American consumer's viewing pleasure. Nevertheless, there is a palpable apprehension felt by this member about

what is going to happen to my constituents in 2006, when broadcasters are supposed to return the 6 megahertz of spectrum which was given to them in order to transition to digital.

As a member who reads and signs all of my legislative mail, I can imagine the visual imagery and I don't like what I will likely see: black or blue screens and constituents red with anger.

Everyone keeps saying that the problem with the transition is akin to the chicken and the egg. Well, today we will hear from a panel of private sector chickens and eggs to get a sense of what needs to be done. Please know that I do not mean to belittle neither the complexity of the problems nor the tremendous burdens facing all of our witnesses as they grapple with this transition.

I have seen firsthand the enormous costs of the transition for my local and commercial public broadcasters. I understand the capacity arguments of my local cable carriers, who opposed dual must carry during the transition. And I can appreciate the content providers' need to protect their intellectual property from Internet piracy.

I know many of my constituents may not be able to replace their tried and true analog sets right away or be able to afford the digital ones or set-top boxes at their current prices, particularly given the lack of HDTV programming, to convince them to part with their money.

In the final analysis, this is about our constituents, our consumers. All of our witnesses, all of you serve in that capacity in some way or another today.

As I mentioned earlier, I remember the advent of UHF. At the ripe old age of 9, 1962, I must profess that I was not aware that the Congress had passed the All-Channel Receiver Act. I suspect my Member of Congress voted against it. I don't know. He voted "no" on everything back then. But I do know that our family was eventually able to purchase TV capable of getting UHF channels.

One area which I intend to explore today is whether and to what extent analogies can be drawn from the UHF experience and applied to today's digital transition to help move it along.

Along these lines, the FCC, in its January 2001 Report and Order, in the digital television transition Biennial Review put out for comment, questions for industries to provide further comment early next month on the need for a DTV tuner mandate and its effect on the consumer and the DTV transition.

Moreover, the FCC seeks comment on how to best implement DTV reception capability requirements. If it were to decide to adopt a tuner requirement, suggesting one approach would be to impose any requirement first on percentage of large-screen TVs, such as 32 inches and larger, because they are typically higher-priced units where the costs of the components would be a smaller percentage of the cost of the receiver. The FCC's query suggests a phase-in of any such requirement over time.

As we focus on this issue, we must explore the cost of such a requirement to the consumer. I have heard some wildly different estimates about the cost. I want to try and get to the bottom of this important question today as well. As a general rule, I am naturally hesitant to support any government policy which interferes in the

competitive marketplace and would lead to significant cost increases to the consumer or significantly limit consumer choice.

Today I hope we will get a better feel for this seemingly unique market, which is, on the one hand, part of the wonderfully competitive consumer electronics market but, on the other hand, inextricably linked to complex and pervasive government policy. By getting a better feel for the market, I hope we will be better able to gauge the appropriateness or need for tuner mandates, like the one floated for comment by the FCC as a means to speed the transition along.

Having said all of that, the horse is out of the barn on this transition. All of our witnesses share a responsibility in turning the old nag into a thoroughbred. We must find solutions. Today's hearings will assist us in finding them.

I now recognize my good friend from Massachusetts for his opening statement, Mr. Markey.

Mr. MARKEY. I thank the Chair very much. This is without question an historic hearing. The subcommittee has a long history of working on this issue, which began with a hearing in 1987 on high-definition television and which continued as the technology evolved into digital television.

The evolution of HDTV from a foreign analog technology into an American digital technology is one which this subcommittee closely monitored and at times prodded the Federal Communications Commission and the various participants toward progress.

In addition, it became increasingly clear over time that the DTV standard-setting endeavor at the FCC was more than about simply creating prettier pictures but, rather, encompassed a national plan to get the broadcast television industry into the emerging digital domain in a more robust multimedia way.

The result of that effort is a standard that is highly versatile. A broadcaster can use it to show one channel or several channels of video programming or broadcasters can use a portion of the bitstream for enhanced data services.

A little over 3 years ago and again last year, the subcommittee also held oversight hearings on the digital TV issue. We still have the leftover issues from that last oversight hearing, which included most of the same issues from the previous oversight hearing in the previous Congress. While certain segments of the industry have made some progress and certain companies merit particular praise, it is quite clear that we are not remotely close to meeting the transition target of 2006 at our current pace.

This is not because Congress was irrationally exuberant in choosing 2006 or about the prospects for the transition to digital generally. The issues before us are part of a multi-industry transition that is not marketplace-driven but, rather, government-mandated.

We may prefer that it be left to the marketplace, but we must recognize that, whether we like it or not, we are talking about industrial policy. The broadcasters do not have a choice about whether they will go digital or not, whether they will put up new towers or not. They must do so.

The government is also eager to move the transition along in order to free up spectrum for new services. We will inevitably have budget proposals for spectrum sales to pay for tax cuts the House

approved last week later this spring. As a result, the government must offer more than the hortatory rhetoric in moving things along. The situation we have right now is unfair to everybody.

The FCC must work with the industry on interoperability issues and should fulfill the congressional mandate from the Telecomm Act to assure a competitive marketplace for set-top boxes. The Commission must also look again at the digital must carry rules, especially as they affect noncommercial broadcasters.

Chairman Powell's recent statements were particularly heartening on this subject. In addition, there is no question that we need more digital programming so consumers who buy these expensive TV sets have something to see.

In the 1997 Budget Act, Congress approved a series of very ill-considered budget-driven spectrum options of the broadcasters' analog spectrum, as mandated by Congress. According to that directive, the FCC was supposed to auction off spectrum in the areas now occupied by Channels 60 to 69. Obviously stations occupying these channels have yet to leave and are unlikely to vacate such spectrum any time soon, at least not unless they are heavily compensated for leaving.

In addition, we are also scheduled to sell the rest of the analog spectrum, even though there is no longer a soul in the industry who thinks this transition will be over in 2006.

During those deliberations in 1997, I offered an amendment based upon the 1962 All-Channel Receiver Act that spurred the development of the UHF television industry to ensure that starting next year, all TV sets in the United States had to be at least capable of displaying a digital signal. Think about it. Last year we sold over 30 million analog-only TVs.

Now, my amendment wasn't adopted. I lost at something like 33 to 7. Many of the people who are sitting out here today were sitting out here on that day ensuring that the Markey amendment would not pass.

It is kind of like an Agatha Christie mystery, and I don't know exactly how many hands were on it but many out here. And those that couldn't get their hands on it on the attempt to kill that amendment were failed in the attempt to do so because there was no more room left on the knife. But, nonetheless, we are back here 4 years late, no additional progress made toward the goal of creating a marketplace of digital TV sets.

So we continue to talk about the national need to recapture the analog spectrum at the earliest possible date. And policymakers will be wringing their hands about the slowness of the transition and the inability to capture all of the tax revenues from auctioning off the original analog spectrum, even as consumers continue to purchase analog-only receivers through the year 2006.

My hope, Mr. Chairman, is that in the near future, we can recapture in this committee telecommunications, policymaking, and excise it from the budget cycle. Again, I thank you for calling this very important hearing. We have an opportunity to create telecommunications policy, not budget policy, and to advance the real technology advancement that this country should have to lead the rest of the world.

Thank you.



Mr. UPTON. Thank you, Mr. Markey.

I would recognize now the chairman of the full Committee on Energy and Commerce, Mr. Tauzin.

Chairman TAUZIN. Thank you very much, Chairman Upton. I want to thank you for calling this hearing because getting the transition to digital back on track is one of the most important agenda items of this subcommittee. And this hearing is critical because we will hear from the private sector their perspective of why the transition is off track.

Obviously transitioning to digital is just another way of enabling television to talk the language of computers. The more important implication is that transitioning to digital is going to be the way most Americans will experience broadband. It is going to be the introduction of broadband services to the vast majority of Americans, who may not otherwise experience it over the ordinary process of the Internet and a computer. And catapulting the television into the Internet broadband age is a critical component of connecting America for the high-tech future that every American should enjoy. So I want to thank you all for sharing your perspective with us.

When the industry talks to us about the transition to digital, every segment explains to us what they are doing and how they efforts are being hamstrung by the action or inaction of some other industry. Equipment manufacturers have developed and shipped an increasing number of displays, set-top boxes and integrated receivers, but they argue that consumers won't buy the DTV equipment in sufficiently robust numbers until there is more and better programming out there for viewers to look at, something different than the redundant analog programming that they already see today.

Broadcasters, whom I would like to note have 184 stations now up running in digital, in turn, say they are developing exciting new programs, highlighting their industry's new leader, CBS, whom I would like to commend, by the way, but they say more won't be developed until there are more receivers in Americans' homes, until those receivers are fully interoperable with cable and until adequate copyright protections are in place.

In addition, broadcasters are concerned that even if they do develop this exciting, new programming, it won't reach consumers because cable operators are not obligated to carry both the analog and digital signals during the transition, nor are they required to carry more than the single stream of programming when a programmer does eventually choose to use the spectrum to multicast.

The cable industry, whom I note has quietly been upgrading their systems to digital and producing some HDTV programming, argue that they should enjoy the benefits of their upgrades, not the broadcasting industry.

The people tell me it is a classic chicken and egg argument. Well, as a fervent supporter—and I hope we all are—of this transition to digital television, I think we should be deeply afraid that every industry will continue to blame the other and in the end, the proverbial egg is going to be broken on the heads of consumers.

Let us first recognize the deep commitments all the industry players are bringing to this table and also recognize that if we can't somehow fashion a more constructive, cooperative effort, sooner or

later, we are going to have some real problems on our hands in meeting the deadlines we have established.

I am interested in hearing from the witnesses how consumers are going to be required to pay for the new equipment that is going to let them receive these new signals. I am interested in learning about the choice of equipment packages that consumers will be able to enjoy. How many set-top boxes, for example, will a consumer with multiple television sets in their home be required to purchase?

One family's approach to digital television may not be the same as another. I would like to ensure that families enjoy the same flexibility to embrace these new systems as we have already provided to the broadcasters in deploying them. It is for this reason, frankly, that I think a tuner requirement is wrong. I think it imposes an acceptable high cost on consumers with little flexibility and no guarantee that they are going to get additional programming sufficiently exciting and new to watch that justifies the cost.

I am also concerned about receiver standards. I truly think we could end up with a race to the bottom in terms of technology if we are not careful here.

I agree with the FCC that marketplace dynamics are going to continue to bring improvements in receivers, but we would like to know if those dynamics are working and how well they are working. As you are aware, in 1997 Congress designated broadcast spectrum for pre-high-definition programming. Obviously we set the year 2006 or until 85 percent of the homes had digital television at a time when they are supposed to return the analog spectrum back to the government for other uses.

I think it is time for us to be concerned about this soft deadline, and I think we should begin to perhaps consider hardening that deadline. But if we do so, we have to be assured that consumers will be able to go out and purchase various receivers and set-top boxes and HDTVs at reasonable and declining costs so that consumers will have an easy transition to more and better programming as part of the deal.

I want to remind everyone that we didn't pluck the amount of spectrum we loaned to the broadcasters out of thin air again. The six megahertz was designed to make sure that Americans got a chance to see HDTV. That means that somebody ought to carry it to them and broadcast it to them. If they don't like it, they ought to make that decision, not us. And if there is going to be multicasting, we need to talk about how many of those program channels will be carried by what systems and whether consumers will be getting their dollar's worth in this process as we have made this spectrum available to people.

I also want to note that there is strong impact here for public broadcasters who have been busily engaged in developing genuine DTV business plans that have heavily relied upon multicasting for educational informational programs. We need to keep those in mind as we go forward.

I don't want to mention again the importance of urging the 5C companies and the content community to work together to make sure that not only are digital programs protected when they are delivered by cable but digital programs are also protected when they

are delivered over the air to homes who receive over-the-air broadcasting.

The problem is if the best program is protected only on cable, we all know what Americans are going to receive over the air. It will not be the best. It will be the worst. It will be the dregs, the old reruns that we have seen a dozen times.

So this is just the first of a series of hearings to see if we can get this transition back on track. Mr. Chairman, it is a critically important series of hearings. It may require the FCC to make some new decisions, and it may require us to legislate and to make some new law. But we won't know that until we understand what is wrong with this process today and how we might help to fix it.

Mr. Chairman, that issue is in good hands with you, Mr. Markey, and this committee. I commend it to your charge, and I wish you well.

Mr. UPTON. I would just note for the record that we are going to make sure that Mr. Markey doesn't offer a flood amendment, as he did a couple of years ago.

Mr. Boucher?

Mr. BOUCHER. Thank you very much, Mr. Chairman. I want to begin this morning by commending you for making the subject of the digital TV transition an early point of discussion for this subcommittee.

As we will hear from several of our witnesses this morning, the difficulty in reaching consensus on copy protection issues has been a major impediment to the availability for television broadcasts of high-value digital content. I was pleased to hear the chairman of the full committee mention that concern. I am going to devote some more extensive remarks to it this morning.

I realize that the subcommittee is planning to have a hearing on this precise set of subjects during the course of the next several months, but given the importance of the copy protection issues to the digital TV transition, I intend to offer a few remarks this morning in order to put these concerns in perspective.

Simply put, consumers want content. They want high-value television programming. They need a reason to spend large sums of money on digital television sets. And without access to original high-value programming, they are going to have little incentive to purchase these pricey digital television receivers and monitors. Fortunately, I am pleased to note this morning that intense efforts are currently underway to resolve the copy protection challenges and make high-value programming generally available.

For their efforts to resolve these challenges, I want to commend the Warner Brothers Studio and Sony Pictures and the so-called 5C companies comprised of Intel, Hitachi, Panasonic, Sony, and Toshiba for the agreements that they are now in the process of forming. That will simultaneously make high-value programming available and ensure that with the longstanding expectations of consumers of television programs that they should be able to make a reasonable number of home recordings for time shifting and other purposes of personal convenience are respected.

These companies have signed a memorandum of understanding to implement the technology that will prohibit copying not authorized by the agreed-upon home recording rules. And I am told that

the companies are on the verge of a definitive licensing agreement. Indeed, this is a welcome development.

If a final licensing agreement is signed by these companies and if the other motion picture studios, in addition to Warner Brothers and Sony Pictures, follow a similar course, then approximately 85 percent of the households that receive digital television programming will receive programming that is copy-protected under the terms of the licensing agreement.

That 85 percent of homes, as Chairman Tauzin suggested, are the homes that receive television either by cable or by satellite. Their signals pass through a set-top box or other similar device that can implement the agreed-upon 5C copy protection technology and block copies that are not authorized under the recording rules.

The remaining 15 percent of homes are those that do not receive their television by means of cable or by satellite. They receive television by an outside antenna or by the use of rabbit ears. They are receiving over-the-air television. And since their signals do not pass through a set-top box or similar device, there is no opportunity given current technology for the agreed-upon 5C copy-blocking mechanism to be applied to those over-the-air signals. So they wind up being broadcast in the clear.

This morning I hope that our witnesses will discuss how much of a barrier to the arrival of high-value content for over-the-air broadcasts this current inability to implement the 5C technology for those broadcasts poses.

I am also interested in the prospects for the arrival of a watermarking technology that can be encoded on these over-the-air television broadcasts and which will then prohibit copying beyond the agreed-upon copying rules. When that technology is available, how can it be implemented? Is there the prospect for an industry-wide agreement among the content providers and the manufacturers of digital video recorders and computers similar to the 5C agreement that is now in the process of being formed or, in the alternative, is Congress going to be called upon to enact a statutory mandate that the digital video recorders and the computers respond to the watermarking technology and block unauthorized copies.

I would note that we have a model for that in Section 1201(k) of the Digital Millennium Copyright Act, which establishes this kind of regime with regard to analog copies. Are we going to be called upon to do the same kind of thing with regard to digital copies with respect to over-the-air broadcasts?

And, finally, I would appreciate our witnesses responding to this question: What role, if any, should Members of Congress be playing today in order to help address the problems associated with these 15 percent of television households that receive their broadcast programming over the air?

Mr. Chairman, this is a complex set of issues, well-defined by you and Mr. Markey and by the full committee chairman. I once again want to commend you for convening this conversation as we attempt to play a constructive role in helping to resolve the difficulties. And I will look forward along with you to the testimony of our witnesses. Thank you.

Mr. UPTON. I appreciate the gentleman's statement.

Mr. Stearns?

Mr. STEARNS. Thank you, Mr. Chairman. Again, let me compliment you for holding this series of hearings. This is particularly useful because I think this is perhaps the first time we have had the whole family together here. And hopefully this won't be the last time that we can hear from all of them together.

Television has played a critical role in the United States in the second half of the Twentieth Century. And digital television and this technology hold great promise for the consumer, allowing for the delivery of brilliant, high-definition, multiple, digital, quality programs and ancillary and supplementary services, such as data transfer. However, making this new technology a reality does not come without its sets of challenges and risks, many of which are going to be explained by our witnesses today.

As it stands now, there is a lot of blame being pointed by each of the folks in these industries. And, of course, we are here to try and understand this and understand why the transition to digital television is not taking place as we originally envisioned it in the Telcomm Act of 1996.

The FCC just recently released its report and order on digital must carry and digital television in January. And many would argue outstanding issues such as must carry, copyright protection, interoperability, and DTV-set standards still pose obstacles to a smooth and seamless transition. Furthermore, the administration's budget blueprint released last month certainly raises many eyebrows in these halls of Congress in that area.

Mr. Chairman, the transition to digital television is a lot like getting into heaven. Everyone knows what it takes to get there, but no one wants to do what it takes and sacrifice. We all recognize the challenges that cable operators, broadcasters, and content community manufacturers and retailers face in making digital television a reality and mainstay. However, we are late in the game. I ask all of the players in different industries to work together in order to make this transition.

This is a family we have before us. And, like any family, there are folks that don't get along. This is not a dysfunctional family, Mr. Chairman. So I think we can work it out. We just need a lot of cooperation, hard work, and patience to ensure digital TV services become a reality, as we all envision.

I do not think at this stage of the game it is productive to blame but to try to explain and try to work through this so that ultimately the benefit comes to the consumer.

And, Mr. Chairman, I want to thank you again for this hearing and also to recognize while not a constituent but from my home State of Florida, Mr. Paxson, who is Chairman of Paxson Communications Corporation.

Mr. UPTON. Thank you, Mr. Stearns.

Recognize the ranking member of the full committee, Mr. Dingell, for an opening statement.

Mr. DINGELL. Thank you, Mr. Chairman, and thank you for holding the hearing today.

There is no question that the conversion to digital television is one of the most important issues facing this committee. It will remain so for a long time.

The outcome of this transition is sure to affect the economic well-being of a wide cross-section of industry, most of whom appear to be in this room today. But just as important are the people who will be affected who are not in the room today.

Unlike some of the other issues this committee deals with, the success or failure of digital television literally will be felt in every living room across the United States. It is an issue that none of us can afford to mishandle. Unfortunately, we may be on the verge of doing just that.

We have a fine panel here of distinguished witnesses. And I salute them, and I greet them. And I know many of them will be telling the committee that we are in a fine mess. I agree with them on that statement. But I also believe that the blame for this mess lies not in any particular segment of the industry. In fact, I think it is likely that many of you have done the best to play the bad hand that you have been dealt.

This committee has always strived to craft sound telecommunications policy that both strikes a balance between the competing interests of industry players and confers the greatest benefit on the public at large. Unfortunately in this case, the budget gains and the politics converged in a way that may have jeopardized each of these important goals.

For purely political reasons, the Budget Act of 1997 established a wholly arbitrary date, I want to stress that, wholly arbitrary date, December 31, 2006, for the completion of the transition to digital television. Despite the protests of many of the members of this committee, Congress decided to completely ignore the dictates of the marketplace and, instead, to impose its own judgment on how quickly consumers would accept this new technology. That certainly is at variance with any logic.

As a result, we are here today trying to make the best of a bad situation, which is largely of the creation of the politics inside the Congress. It may be that most industry players are genuinely sincere in their efforts to make this conversion work and are peddling as fast as they can to beat the clock. The unhappy truth, though, is that some impediments may be too great to overcome, at least without substantial help.

There are some who say that government should not impose itself to help resolve any of the natural problems and disagreements that are putting this transition at risk. They argue that the marketplace should drive the outcomes to key questions that can be discussed today, such as digital program carriage, cable interoperability, television receiver standards, and copyright protections. I would simply observe that the Congress made this mess and probably made that impossible.

It is possible under proper circumstances that these arguments for an unfettered marketplace might have then some merit, but the situation in which we find ourselves is far different than normal.

The government has chosen a date certain for digital television conversion, after which existing analog sets just won't work. By necessity, all of the critical questions that are key to a successful conversion must be firmly resolved and in place well in advance of the date.

The hands-off approach is made even more difficult because the very existence of a date certain in the law creates an imbalance in the bargaining power between the parties. It is an imbalance that would not persist if the market were left to its own devices from the very beginning, but the market was not permitted to follow its own course and some degree of FCC or congressional intervention may now be necessary if we are to meet the deadlines contained in the law.

These are difficult, thorny, and harsh issues, both tightly technical and politically contentious. Clearly they are not the kind of issues that government decides best and it would be better if private negotiations and agreements could be struck to mitigate the need for the government to intervene.

Whether those events can go forward, then, through negotiations inside the industry is open to question and largely is going to be the responsibility of the industry to decide for us if they cannot, then we must. In fact, I am not convinced that any of these problems would be resolved by the government in a way that strikes precisely the right balance. Some segments of the industry would be sure to leave the committee room or the FCC with significantly less than they bargained for.

The time is running out. An action, whether public or private, needs to be taken with all appropriate haste. I hope that all parties here today and the industries they represent will redouble their efforts to reach private consensus on these major outstanding issues and to do so quickly. Otherwise it seems inevitable that the government efforts to speed the transition will be necessary with all of the clumsiness and possible misfortune that that obtains.

My thanks to the witnesses today for appearing and to you, Mr. Chairman, for holding this hearing. It is an important one which I hope will be the first of a series on this important subject. I yield back the balance of my time.

Mr. UPTON. Thank you, Mr. Dingell.

Mr. Shimkus?

Mr. SHIMKUS. Just briefly, Mr. Chairman.

I want to welcome the panel. I am from a large family. Large family gatherings can sometimes be contentious. And it may happen this way again today.

Another thing that we are not really discussing, although I think my colleague Mr. Boucher highlighted it, was: When will we fall into the Napster-like approach on broadcast television signals as we go to digital? I think that is a valid concern and maybe something we obviously should be addressing now prior to having to address it; i.e., in the aspects of what we have to deal with in a Napster continuum.

So that is a brief opening statement, Mr. Chairman. I want to hear the panel. I yield back my time.

Mr. UPTON. Thank you.

Ms. DeGette?

Ms. DEGETTE. Mr. Chairman, at the request of the Chair, I will submit my opening statement for the record.

Mr. UPTON. Thank you.

Mr. Terry?

Mr. TERRY. Waive.

Mr. UPTON. Ms. Eshoo?

Ms. ESHOO. Thank you, Mr. Chairman, for holding the hearing. And welcome to our witnesses that are here today. It is a distinguished panel, and we look forward to hearing from you.

During the administration of President Reagan, the FCC initiated a plan that would allow the television broadcast industry to make a transition from analog to digital television. This was in response to the requests of broadcasters for additional spectrum so that they could bring the wonders of high-definition television to the viewing public.

In 1996, the Telecommunications Act, which we wrote, brought this picture into sharper focus. The act provided the FCC with guidelines to regulate the additional spectrum that broadcasters were given for use during the transition period.

Today we are working toward a target date of 2006 before the broadcasters will hopefully have completed the transition to digital television in certain markets. Not until then will the FCC be able to reacquire the analog spectrum and assign it to the highest bidders at auction.

I recite this time line because even after such a substantial period of time has been devoted to HDTV, I can see, we can see, that we are faced with even tougher issues, which must be resolved before we can get this technology to the public. As I understand it, with only 185 out of 1,600 stations transmitting digitally, we have a long way to go.

As has been stated by some of my colleagues, the 2006 date was an arbitrary one. It was not something that the broadcasters brought to us, but, rather, we imposed for an entirely different reason. It was really to plug up the holes in the Balanced Budget Act so that auction could take place of spectrum and that the money would be raised to plug up these holes.

Now, I can't help but observe that the only place I have ever seen HDTV is in this hearing room or at a national convention in a booth for us to observe. I understand that there is some progress on the part of CBS and others, and I congratulate them for that. But in terms of the history and the race for this progress, something is not working. I don't have a relative or a friend, nor do I own one of these sets. So consumers are not picking up on this. And meanwhile 2006 seems to be moving closer and closer.

Obviously the manufacturers, the cable operators, the broadcasters have to work together. I agree with Mr. Dingell. I don't really know whether it is Congress that is going to settle this dispute. You may end up getting something that you really don't like once the Congress steps into it. But it is important.

We know that Japan was our target. They seemed to be getting ahead of us. Where is Japan now? Where are other markets now? Was this a good idea? Is it still a great idea? Is it a must carry idea in terms of the consumer? And what do broadcasters want not having gotten to the goal that they set down at one time? We have to speak very frankly about this because I think if we don't, that this maybe rush to legislative judgment is not going to be a great fit of the people that are players in this.

So I look forward to this discussion. I know that there are set-top box issues. That is something that makes my ears perk up



since I have a bill that then became an amendment and part of the Telecommunications Act. It is not exactly what the industries are talking about now, but it is something that I have a keen understanding and awareness of. So I hope that the industries are prepared to tell us whether this is, at least in my view, still a great idea and why the consumers are not really running huckledly-buck to get this. Why is it that we are still seeing the wonders of HDTV in our hearing room and why it is not in living rooms?

So thank you, Mr. Chairman, for holding this hearing. It is an important one. And this is quite a sterling past of people that are before us. I look forward to hearing from them. Thank you.

Mr. UPTON. Thank you.

Ms. Cubin?

Ms. CUBIN. I will submit my opening statement.

Mr. UPTON. Okay. Ms. Harman?

Ms. HARMAN. Thank you, Mr. Chairman.

I again as a new member of this committee am delighted to participate in hearings on this subject. I must say that before I ever ran for Congress, my predecessor Mel Levine used to claim he was a leader in the Congress on HDTV. I assume he was a leader in Congress. That was a long time ago. But the issue is still here, making the point that we haven't really gotten very far.

There has been some progress. For example, a witness before us today, Mr. Franks, a very good friend of mine, represents CBS. CBS is now broadcasting the U.S. Open Tennis Tournament in digital for the second year in a row.

I understand that consumer electronics manufacturers project more than \$2 billion worth of HDTV products will be produced and sold this year and cable operators have invested billions to upgrade infrastructure and cable content providers, like HBO, offer a broad selection of high-definition programming. Nonetheless, as many have said before me, the progress is uneven, the results are mixed.

I want to associate myself with the comments of the chairman of the full committee and Mr. Boucher and others about the retransmission of over-the-air broadcast signals. I think that Mr. Tauzin is correct that if we don't figure out a system to protect those signals the way we are protecting the retransmission of cable signals, there will be a race to the bottom. And the content offered will be diminished. If the content is poor, there won't be much interest in embracing the new technology.

So we have a challenge here. We have had it before in other areas. And that is to encourage innovation, new technology, but at the same time to protect intellectual property rights.

I look forward to today's hearing. I look forward more to trying to figure out what roles government should play and what roles it should not play as we move forward. Thank you, Mr. Chairman.

Mr. UPTON. Mr. Gordon?

Mr. GORDON. As has been pointed out a number of times today, this is a very important meeting. We have an excellent panel. And I will follow your instructions and submit my remarks for the record and look forward to hearing from this panel.

Mr. UPTON. We will give you extra credit another day.

Mr. Stupak?

Mr. STUPAK. Mr. Chairman, I need the extra credit. So I will pass.

Mr. UPTON. Okay. Doubt extra credit for Michigan.

Mr. LUTHER?

Mr. LUTHER. Mr. Chairman, I will submit for the record, thank you.

Mr. UPTON. Same for the Midwest. At this point, again, I will remind all members they have unanimous consent that all opening statements be made a part of the record.

I would like to recognize Mr. Arland from Thomson Multimedia on behalf of CEA to give us a brief demonstration. Go ahead.

Mr. ARLAND. Thank you, sir. I am going to step away from the witness table so that I can describe to you what you are about to see. We have brought with us today from the Consumer Electronics Association 4 of the more than 200 digital television products that are available at retail stores throughout the country today. And I assure you as the seller of RCA products, yes, they are available in thousands of locations. There is a detailed list in the DTV guide that is at your table that shows you what all of these products are.

Starting here, this is the RCA Regency 100. This is the industry's most popular and most affordable HDTV receiver set-top box. We have a set up here that was introduced about 1½ years ago for \$649. We have since dropped the price about 15 percent. So it sells for \$549 and is the industry's most affordable receiver today.

I have got it hooked up to a television that came out of a Philadelphia home. This is the 1987 RCA 26-inch console TV, much like my parents had in their house. I am sure many of you have one of these in your basement. And we wanted to demonstrate to you today how digital television can be received and converted and shown in analog. I think you will be very pleasantly surprised. It is probably the best signal this television has ever received.

Stepping up one point, come with me over here to this product. This is a fully integrated wide-screen 38-inch HDTV. And it is selling now across America in retail stores, also from my company, from RCA. It has all the technology, not only for over-the-air broadcasting but also for direct TV service as well. It works with set-top boxes. It does also work with many cable systems.

We have two other models: a Panasonic and a television here. And Mitsubishi is a set-top box. There are other products as well receiving over-the-air broadcasting as well as direct TV high-density service. In both of these sets is utilize random technology called ELTV. Like Panasonic and Mitsubishi, my company is also working on a new technology. So we see a wide variety of products.

We are going to show you now a short demonstration, two or three videos from the CBS network, unquestionably the leader in the data team. We were very proud of that. We are going to sponsor some of the programs.

And then Terry Bryant from WETA locally will introduce the programming as I show you. Enjoy it.

[Video shown.]

Ms. BRYANT. Good morning. I am Terry Bryant, Senior Vice President of Broadcasting for WETA. Take a look.

[Video shown.]

Ms. BRYANT. What we are going to show you this morning is a demonstration of a multicast that we do on WETA. Actually, today we have been playing back the contents of a server, but I have been told that there is at least one WETA viewer on the committee. And that person knows that we multicast every day on WETA.

There is really no mystery mounted to it, but before I get to that, I would like to take you back 40 years to when Mrs. Elizabeth Campbell signed WETA TV on the air for the very first time. We had one analog black and white program server.

Now fast forward 40 years. And this is Elizabeth Campbell signing on WETA digital, both color high-definition wide-screen TV and surround sound plus the ability to offer multiple broadcast servicing.

So that changed in 4 years, but one thing remained the same. And that was our mission to serve the interests of the community where we live. At WETA, we serve northern Virginia, Maryland, and the District. So we have a unique audience to serve.

Unlike the analog world with our digital bandwidth, we can literally slice and dice the bandwidth and come up with multiple servers. So let us take a look.

The first thing that comes up is our rendition of an electronic program guide. This will help your data base with services and the committee will receive a copy of it. This is how we envision a multicast base in real time.

Of course, the services that are outlined here were developed with feedback from our digital viewers. I started doing multicast demos with our retail partners. They were not shy. They just could not figure out what the best service was.

WETA Kids is pretty self-explanatory. WETA Plus is our education and our lifelong learning service as a new initiative of WETA to address the work readiness crisis of northern Virginia.

The way we walk through this service, all four services are here all the time. And all I am doing is I am consulting with this team.

There is a little icon on top of the screen. D stands for data tasking. WETA recently started data tasking thanks to our partnership with private trusts. It is a companion program to Dragon Tales. And when you watch it on your computer, it looks just like a full-motion television program. At the same time that I can data task Parent Tales, I can also transmit text. And that text can be activity pages for the kids to do with their parents. You can transmit in multiple languages.

These programs at WETA would not be possible without the support of our members and also our technology partners. None of those partners are here today. WETA could not have done this without the help of folks like Dialectric, who loaned us our very first antenna. And once we found out we could borrow \$50,000 worth of equipment, all bets are off. We went out and asked for other \$10,000 partners. We also have retail partners here in Washington and northern Virginia. We borrowed display set-top boxes from them.

But still WETA has made a huge investment and have had terrific feedback. There are a lot of digital viewers in this area. They contact me on a regular basis. They keep me honest, and they keep helping me to take digital development to everything it can be.

Thank you.

Mr. UPTON. Thank you.

Mr. BUYER. Mr. Chairman?

Mr. UPTON. Mr. Buyer?

Mr. BUYER. I ask unanimous consent to speak out of order.

Mr. UPTON. Without objection.

Mr. BUYER. I would like to thank Mr. Arland for coming. The high-definition television that you see and the set-top box digital receiver are manufactured in my district in Indiana. So I want to thank Thomson for coming today and for giving this display to the committee. Please extend our compliments to the workers that, in fact, are leading the way in this multimedia and whether it is information, data, video. I appreciate it.

I yield back my time, Mr. Chairman. Thank you.

Mr. UPTON. Thank you.

Well, we are now ready to hear from our witnesses. This morning we are going to hear from: Mr. Martin Franks, Executive VP of CBS; Mr. Lowell Paxson, Chairman of Paxson Communications; Mr. David Arland, Director of Government and Public Relations for Thomson Multimedia; Mr. Steve Weed, President of Millennium Digital Media; Ms. Beth Courtney, President and CEO of Louisiana Public Broadcasting; Mr. Michael Willner, President of Insight Communications on behalf of the National Cable TV; Mr. Chris Cookson, Executive VP of Warner Brother; Mr. Ben Tucker, Executive VP for Broadcast Operations from Fisher Broadcasting on behalf of the NAB; and Mr. Ronald Parrish, VP of Industry and Government Affairs for RadioShack. Thank you all for coming.

I understand we are going to have a vote in about 10 or 15 minutes. So we are going to go, but it will be our last vote of the day. We will go as far as we can and adjourn and come back.

Mr. Franks, welcome.

Mr. FRANKS. Thank you, Mr. Chairman and members of the committee.

**STATEMENTS OF MARTIN D. FRANKS, EXECUTIVE VICE PRESIDENT, CBS; LOWELL PAXSON, CHAIRMAN, PAXSON COMMUNICATIONS CORPORATION; CHRIS COOKSON, EXECUTIVE VICE PRESIDENT/CHIEF TECHNOLOGY OFFICER, WARNER BROS.; STEVEN B. WEED, CHAIRMAN, AMERICAN CABLE ASSOCIATION AND PRESIDENT, NORTHWEST REGION—MILLENNIUM DIGITAL MEDIA, ON BEHALF OF THE AMERICAN CABLE ASSOCIATION; BETH COURTNEY, PRESIDENT AND CEO, LOUISIANA PUBLIC BROADCASTING AND CHAIRMAN, BOARD OF TRUSTEES, ASSOCIATION OF AMERICA'S PUBLIC TELEVISION STATIONS, ON BEHALF OF ASSOCIATION OF AMERICA'S PUBLIC TELEVISION STATIONS; DAVID H. ARLAND, DIRECTOR, GOVERNMENT RELATIONS, THOMSON MULTIMEDIA, INC., ON BEHALF OF THE CONSUMER ELECTRONICS ASSOCIATION; MICHAEL WILLNER, PRESIDENT AND CHIEF EXECUTIVE OFFICER, INSIGHT COMMUNICATIONS, ON BEHALF OF THE NATIONAL CABLE TELEVISION ASSOCIATION; RONALD L. PARRISH, VICE PRESIDENT OF INDUSTRY & GOVERNMENT AFFAIRS, RADIO SHACK CORPORATION; AND BEN TUCKER, PRESIDENT, FISHER BROADCASTING COMPANY, ON BEHALF OF NATIONAL ASSOCIATION OF BROADCASTERS**

Mr. FRANKS. My name is Martin Franks.

Mr. UPTON. Let me just interrupt just for 1 second. your statements are made as part of the record in their entirety. We would like to limit your remarks to no more than 5 minutes. Extra credit for those who finish early.

Mr. Franks?

Mr. FRANKS. I need all of the extra credit I can get, Mr. Chairman.

I am the Executive Vice President of CBS, where one of my responsibilities is overseeing our transition to digital television.

Rumors of the demise of digital television are premature. Great challenges are still before us. But I am absolutely convinced that if the industry is involved and the government exercises diligence, cooperation, and patience, we will deliver to the American people a marvelous improvement on what is already one of their favorite products: the news, public affairs, sports and entertainment programming that television brings into their living rooms each day.

Do those who proclaim the digital transition a failure know that CBS is halfway into its second season of offering the preponderance of its prime time entertainment schedule in digital high-definition? This season 18 of CBS's 22 hours of weekly prime time network programming are being broadcast in digital high-definition. Are they simply unaware that we are also in the second year of offering our viewer high-definition broadcasts of the U.S. Open tennis championship and the AFC's football championships, including this year's Super Bowl?

Next month we will return to Augusta for our second HD broadcast of the Master's. And with the opening today of the NCAA men's basketball tournament, I am pleased to be able to remind the naysayers that we will once again broadcast this year's Final Four in high-definition. And all of CBS' high-definition programming in

transmitted in the 1080I format, high-definition's highest definition.

As I said at the outset, we do face daunting challenges that must be addressed and overcome before we can be completely assured that the transition to digital will be a success. It is also worth noting at this point that the digital transition is infinitely more complex than the most recent but inapt comparison, the conversion to color.

Color was broadcast within the same frequency as black and white, and sets were compatible with one another. Moreover, there were many fewer players, no cable industry as we know it today, no computer industry, just three networks. And the only piracy seen in the industry starred Errol Flynn.

By comparison, the digital transition must be pulled up within this viciously competitive industry sector, where the stakes are enormous, the technology is infinitely more complex, and where there are many, many more moving parts and there is a fundamental paradox that must be confronted about the transition.

The government must decide what approach it wants to adopt regarding the remainder of the digital transition. At the moment it has a contradictory stance. On the one hand, former FCC Chairs Reed Hundt and Bill Kennard established as one pillar of government policy an oft-stated preference for leaving most of the messiest details of digital television to the marketplace. At least so far government has done far less than it might have to help resolve the issues of cable carriage, copier protection, interoperability, zoning, and other local conflicts.

There is nothing wrong with leaving those issues to the marketplace so long as one remembers that the marketplace is not necessarily prompt or consumer-friendly in resolving such issues. At the same time that some policymakers have proclaimed the virtue of leaving these difficult and contentious issues to the marketplace, the government has also dealt itself a huge stake in the rapid completion of the transition so the analog spectrum can be reclaimed and auctioned in the near term. I am not sure the government can have it both ways. Left to the marketplace, digital transition will happen, but it will take time. And there will be dislocations very likely, including some from viewer consumers.

On the other hand, if auction revenue in the near term is paramount, government will have to play some greater role, at least stepping up its job owning, to help resolve some of the outstanding issues.

The problems we face can be solved. The affected industries must redouble their efforts to cooperate. And the government must strike a better balance between a hands-off policy and heavy-handed regulation that might stifle innovation or even kill the whole transition.

But surely that balance can be struck. This committee's ongoing oversight, along with a slightly more hands-on FCC to keep the affected industry players focused, may well be enough.

Mr. Chairman, one final point. CBS is doing everything within our power to advance the transition. We are doing so at considerable cost. And our current return on investment is small. But we welcome the chance we have been afforded to transition to digital.

Over-the-air broadcasting is too important to the culture of this country to allow it to become a marginalized analog archipelago in a rapidly advancing digital ocean. That is why I do not understand the repeated suggestions that loaning broadcasters six megahertz of digital spectrum to effect this transition constitutes a giveaway.

Without such a loan, there simply is no way to transition to digital while still serving the overwhelming number of American families who will continue to rely on analog television to deliver their favorite programs for the foreseeable future.

That is no giveaway. It is responsible and farsighted public policy that ensures the American people will have the analog over-the-air broadcasts they have come to know and count on until they are ready and able to upgrade to the wonderful new product that is digital television.

Thank you.

[The prepared statement of Martin D. Franks follows:]

PREPARED STATEMENT OF MARTIN D. FRANKS, EXECUTIVE VICE PRESIDENT, CBS

Mr. Chairman, my name is Martin Franks. I am the Executive Vice President of CBS where one of my responsibilities is overseeing our transition to digital television.

Rumors of the demise of digital television are premature. Great challenges are still before us, but I am absolutely convinced that if the industries involved, and the government, exercise diligence, cooperation and patience, we will deliver to the American people a marvelous improvement on what is already one of their favorite products: the news, public affairs, sports and entertainment programming that television brings into their living rooms each day.

Do those who proclaim the digital transition a failure know that CBS is half way into its *second* season of offering the preponderance of its prime time entertainment schedule in digital high definition? This season, 18 of CBS's 22 hours of weekly prime time network programming are being broadcast in digital High Definition. Are they simply unaware that we are also in the *second* year of offering our viewers High Definition broadcasts of the U.S. Open Tennis Tournament and the AFC football championships, including this year's Super Bowl? Next month we will return to Augusta for our *second* HD broadcast of the Masters, and with the opening today of the NCAA men's basketball tournament, I am pleased to be able to remind the naysayers that we will *once again* broadcast this year's Final Four in High Definition. And, all of CBS's digital high definition programming is transmitted in the 1080i format, High Definition's highest definition.

Our HD broadcasts are currently offered by thirty-seven of CBS's owned or affiliated stations covering just under one half of the nation. By the end of 2001, we expect to be transmitting HD network programming across more than 75 owned and affiliated stations, reaching well over two thirds of the country. The response from viewers has been encouraging, and anecdotal reports suggest that digital sets are finally beginning to ship and sell in quantity.

I would be remiss if I did not acknowledge our digital partners who have helped make this success story possible:

- First, the digital CBS affiliates who have been fellow pioneers in our effort to assume digital leadership;
- Second, several innovative post production companies in Hollywood who have pioneered techniques to make the conversion of entertainment programming to digital High Definition easier and less costly;
- And finally, those who joined CBS in our digital leap of faith, our HD broadcast sponsor/partners: Mitsubishi, Thompson/RCA, Panasonic, Sony, Samsung, and Zenith.

As I said at the outset, we do face daunting challenges that must be addressed and overcome before we can be completely assured that the transition to digital will be a success. It is also worth noting at this point that the digital transition is infinitely more complex than the most recent, but inapt, comparison, the conversion to color. Color was broadcast within the same frequency as black and white, and sets were compatible with one another. Moreover, there were many fewer players—no cable industry as we know it today, no computer industry, just three networks, and the only piracy seen in the industry starred Errol Flynn.

By comparison, the digital transition must be pulled off within this viciously competitive industry sector, where the stakes are enormous, the technology is infinitely more complex, and where there are many, many more moving parts.

Let me try to list some of the transition's challenges from CBS's perspective and, rather than pointing fingers, I will try to offer suggestions on how the affected industries, and the government, might play a constructive role in solving the problems.

First, I should address a fundamental paradox that must be confronted about the transition.

The government must decide what approach it wants to adopt regarding the remainder of the digital transition. At the moment, it has a contradictory stance.

On the one hand, former FCC Chairs Reed Hundt and Bill Kennard established as one pillar of government policy an oft-stated preference for leaving most of the messiest details of digital television to the marketplace. At least so far, with the notable exception of Commissioner Susan Ness's brokering of a broadcast standards agreement, government has done far less than it might have to help resolve the issues of cable carriage, copy protection, interoperability, zoning and other local conflicts. There is nothing wrong with leaving those issues to the marketplace, so long as one remembers that the marketplace is not necessarily prompt or consumer friendly in resolving such issues.

At the same time that some policymakers have proclaimed the virtue of leaving these difficult and contentious issues to the marketplace, the government has dealt itself a huge stake in the rapid completion of the transition so the analog spectrum can be reclaimed and auctioned in the near term.

I am not sure the government can have it both ways. Left to the marketplace, the digital transition will happen, but it will take time and there will be dislocations, very likely including some for viewer/consumers. On the other hand, if auction revenue in the near term is paramount, government will have to play some greater role, at least stepping up its jawboning, to help resolve some of the outstanding issues.

What are some of those issues? Not necessarily in any order:

*Tower siting*—The transition cannot possibly succeed without major market stations getting their digital transmissions on the air rapidly. In Denver, the efforts of the major commercial broadcasters, including CBS's owned and operated Denver station, to get on the air at anything like full power have been delayed and frustrated by the local jurisdiction's refusal to countenance either short or long term options for the tower improvements necessary for digital broadcasting. Had the Denver Broncos made this year's Super Bowl, their hometown fans would have been unable to see their heroes in HD but for a last minute simulcast deal we were able to strike with another local station that has a temporary, low power digital antenna atop the office building it occupies.

Unless the dispute over a permanent tower is resolved locally, and little in the three year long history of this controversy gives rise for optimism, the FCC may well have to exercise its authority to preempt the local government if full scale digital television is to come to Denver anytime soon.

Another example of a localized transition problem happened to us in Chicago. When we first turned on our digital transmitter, it immediately caused massive interference throughout the city on thousands of older, analog cable boxes that can only output their signal on channel 3, the same channel the FCC assigned us for digital broadcasting. Rather than alienate a huge segment of the local audience, we shut down the transmission. We have worked very well with AT&T Cable to find a solution, but here is another instance in which the parties could use more active assistance from the FCC.

*Consumer Friendliness*—A viewer/consumer wants to know that when they bring a new digital set home and hook it up that it will work at least as well as their analog set has. Unfortunately, for too many reasons, that is not yet the case.

Indoor reception of digital television signals is another potential viewer/consumer issue. We are all disappointed with the indoor reception performance of current digital receivers. However, several points should be noted.

I believe that in the very near term, particularly now that lingering broadcast standard issues are resolved, set manufacturers will drastically improve the capability of their receivers with regard to indoor reception. We should also remember that the current NTSC analog system is hardly a work of art. After all, if NTSC transmission were perfect, or even very good, the community antenna industry that we now call cable might never have been born.

Of course, cable is the other answer to reception problems. With 70 per cent of American viewers accustomed to receiving their broadcast programming over cable, it is hard to envision a successful transition to digital without resolution of the



issues surrounding cable carriage of digital over-the-air broadcasts. As you may know, CBS and Time/Warner Cable forged a groundbreaking, national digital carriage agreement in which the level of intercompany cooperation, if not every detail of the agreement itself, should be a model for how broadcasters and cable approach this issue.

*Copy Protection*—As over-the-air broadcasters, we are concerned that the copy protection scheme that is presently being discussed leaves us behind. We have *absolutely no* objection to our viewers being able to record us off air for their own viewing. However, without some measure of copy protection that makes unlawful piracy, particularly over the internet, more difficult, we fear that premium content, whether it is **Titanic** or **Survivor**, will not be made available to over the air broadcasters and will instead migrate to cable and satellite where its airing is more secure from piracy. In this regard, we welcome the letter sent by leading members of this Subcommittee and the full Committee, including the chairmen and ranking members, calling for inclusion of over the air broadcasting in any copy protection technology.

The problems we face can be solved. The affected industries must redouble their efforts to cooperate, and the government must strike a better balance between a hands off policy and heavy-handed regulation that might stifle innovation or even kill the whole transition. But surely that balance can be struck. This committee's ongoing oversight, along with a slightly more hands on FCC to keep the affected industry players focused, may well be enough.

Mr. Chairman. I really do believe the American people will come to love the options digital television will give them. As I noted at the outset, today is the first day of the Men's NCAA basketball championship on CBS. The next few days are among the busiest in CBS's broadcast year. In just the next 80 hours, we will broadcast 48 separate games to get down to the Sweet 16, and of necessity, many games will be going on at the same time. CBS is permitting several CBS affiliates to use the remarkable capacity and flexibility of the digital signal to multicast three or four games simultaneously and still for free to all who can receive them. Later in the tournament, that same digital bitstream will make possible extraordinary HD images when the field is narrowed to the Final Four. As broadcasters go forward and experiment with various combinations of multiple standard definition programming streams versus fewer but higher resolution programs, our viewers will tell us what they prefer, and we will finally have a tool to give them more than just one option if that is what they want.

Mr. Chairman, one final point: CBS is doing everything within our power to advance the transition. We are doing so at considerable cost, and our current return on investment is small. But we welcome the chance we have been afforded to transition to digital. Over the air broadcasting is too important to the culture of this country to allow it to become a marginalized analog archipelago in a rapidly advancing digital ocean. That is why I do not understand the repeated suggestions that *loaning* broadcasters 6 megahertz of digital spectrum to effect this transition constitutes a giveaway. Without such a loan, there simply is no way to transition to digital while still serving the overwhelming number of American families who will continue to rely on analog television to deliver their favorite programs for the foreseeable future. That is no giveaway. It is responsible and farsighted public policy that ensures that the American people will have the analog, over-the-air broadcasts they have come to know and count on until they are ready and able to upgrade to the wonderful new product that is digital television.

Thank you, and I will be happy to answer your questions.

Mr. UPTON. Thank you very much.

Mr. Paxson, welcome.

#### STATEMENT OF LOWELL PAXSON

Mr. PAXSON. Thank you, Mr. Chairman and distinguished members of the subcommittee for providing me with the opportunity to appear before your panel today to discuss the digital television transition.

My name is Lowell, Bud, Paxson, and I am Chairman of Paxson Communications Corporation, the largest television station group owner in the United States, 65 television stations strong, and the creator of the PAX-TV network, which now reaches 82 percent of all American homes.

All 24/7 of our programming is shot in standard digital format. All of our network operations are now digital. All master controls of our 65 TV stations have been converted to digital. What is left is the transition to digital by our transmission systems; simply stated, our transmitters, which will prepare us for multicast programming future.

When we launched 2½ years ago, we repeatedly heard from media pundits, "No sex, no violence, no ratings, no revenue." And, yet, here we are today making a cash-flow profit and proving the public is looking for and advertisers will support good, clean, family television.

Many are upset with the broadcasters for the failure of the digital transition. However, the fault lies with many. And most of us are here at this table today. We simply have not created an atmosphere for the consumer to want to step up into the digital television world. The solution lies with you and the FCC. The marketplace is not working. We ask you to act quickly to put the DTV transition back on track.

Our future as an emerging network is tied to the success of the digital television transition in this country and to the requirement that cable and satellite must carry our station's programming. That digital future is potentially a great one.

Some networks, like CBS and others, see a great future of high-definition television showing great sporting events and great movies. We at PAX have always maintained that the highest and best use of our digital spectrum is multiple channels of high-quality lifestyle news and entertainment centered on the family, enabling families to be more effective within their homes and communities.

Statistics show that last year in the United States 33 million analog TV sets were sold, 750,000 digital monitors sold, but only 26,000 digital TV tuners. We need a digital all-channel receiver act that would require all television sets sold to the American public be capable of receiving both analog and digital. Consumers have a right when they buy a TV set to be assured that it will not become obsolete.

Undoubtedly, the most important issue for PAX in terms of digital television transition is the cable and satellite carriage of all six megahertz of our station's digital signals. Like us, hundreds of other broadcasters and hundreds of public television stations believe that the capability to multicast to several programming services is their key to the use of the digital spectrum.

We don't feel our digital spectrum is in devoting our entire digital capacity to a single stream of programming, nor in using our digital capacity for ancillary services, such as data casting. But we need the assurance that our multiple, free, over-the-air programming services will be received by the 70 percent of the homes in this country that are served by cable and satellite.

The FCC has decided to permit cable operators to carry only one of the station's multiple channels to free over-the-air programming, rather than requiring cable systems to carry all such free programming.

PAX-TV urges this committee to take the opportunity to reaffirm the congressional commitment to full digital must carry and to the preservation of free local television by requiring multicast must

carry of all free over-the-air programming services. If content drives the DTV transition, then give the consumer access to all free multiple channel content that we, the local broadcasters, have the ability to air.

Mr. Chairman, I thank you for allowing me to testify.  
[The prepared statement of Lowell Paxson follows:]

PREPARED STATEMENT OF LOWELL "BUD" PAXSON, CHAIRMAN, PAXSON  
COMMUNICATIONS CORPORATION

Thank you Mr. Chairman and distinguished members of the Subcommittee for providing me with the opportunity to appear before your panel today to discuss the Digital Television Transition. My name is Lowell "Bud" Paxson and I am Chairman of Paxson Communications Corporation, the largest television station group owner in the United States, 65 stations strong, and the creator of the PAX-TV network, which reaches 82% of all American Homes.

When we launched 2 years ago we repeatedly heard from media pundits—no sex, no violence, no ratings. And yet here we are today, making a profit and proving that the public is looking for and advertisers will support good, clean family television.

*Some have said that giving digital TV allotments to broadcasters was a \$70 billion giveaway. I take strong exception to this charge. It is actually a governmental initiative to move TV broadcasters who now occupy channels 2-69 down into channels 2-51 thereby allowing the government to auction off the 52-69 spectrum to other users.* There are well-respected sources who say that the government will net \$70 billion from the sale of the 52-69 spectrum. Of course to accomplish this, we have to have a digital transition and clearly the transition is failing. The benchmark for the transition is the 85% rule. *A strict reading of the rule says that broadcasters have to turn in their analog spectrum when 85% of all households have at least one digital television receiver or their analog set is equipped with a digital to analog converter. Clearly at the present pace of the DTV transition this is years and years away.*

Many are upset with broadcasters for the failure of the digital transition. However, the fault lies with many. The broadcasters, the FCC, the cable industry and the set manufacturers, simply have not created an atmosphere for the consumer to want to step up and into the digital television world. The solution lies with you and the FCC. The marketplace is not working. Act quickly to put the DTV transition back on track.

Our future as an emerging network is tied to the success of the digital television transition in this country and *to the requirement that cable and satellite must carry our stations' programming.* That digital future is a potentially great one. Some networks see a future of high definition TV showing great sporting events and movies. We at PAX have always maintained that the highest and best use of our digital spectrum is multiple channels of high quality lifestyle news and entertainment centered on the family; enabling families to be more effective within their homes and communities.

*Statistics show that last year in the United States 33 million analog TV sets were sold compared to only 26 thousand digital TV tuners. We need a digital all Channel Receiver Act that would require that all television sets sold to the American public be capable of receiving both analog and digital TV signals.* Consumers have a right when they buy a TV set to be assured that it will not become obsolete shortly.

There are TV set copyright issues and contrary to reports, there are still cable, satellite and TV set inter-operability issues that must be promptly resolved once and for all by the FCC. After four years, it is obvious the marketplace is not solving any problems. The FCC needs to deal with these issues now.

*Undoubtedly, the most important issue for PAX-TV in terms of the digital transition is cable and satellite carriage of all 6 Mhz of our stations' digital signals.*

*Like us, hundreds of other broadcasters and hundreds of public television stations believe that the capability to multicast several programming services is the key to their use of the digital spectrum.* We don't feel our digital future is in devoting our entire digital capacity to a single stream of programming nor in using digital capacity for ancillary uses such as datacasting. But we need the assurance that our multiple free, over-the-air programming services will be received by the 70% of the homes of this country that are served by cable and satellite.

Our concern is that a divided FCC last month adopted rules that not only will hurt the DTV transition but undermine hundreds of broadcasters' efforts to multicast free, over-the-air program services.

First, the FCC said that television stations cannot request cable carriage of their digital signal until they turn in their analog channels. That will be years away. We

think this is a bad decision that discourages broadcasters from building their digital stations and consumers from buying DTV sets and severely damages the chances for economic viability of digital television and, ultimately, the digital transition.

The FCC also decided to permit cable operators to *carry only one* of a station's multiple channels of free, over-the-air programming rather than requiring cable systems to carry all such free programming. This decision was also wrong. It is not content neutral. It is contrary to the Congressional intent evidenced in 1992 when you adopted the must carry rules. Anyone reading the recent FCC decision will recognize that the Commissioners were clearly uneasy with their decision and, in fact, were reaching out to Congress for guidance. Cable and satellite are the gatekeepers to the American home. *PAX-TV urges this Committee to take the opportunity to reaffirm the Congressional commitment to full digital must carry and to the preservation of free, local television by requiring multi-cast must carry of all free, over-the-air programming services.*

I have submitted a workable digital must carry plan as a supplemental filing with this committee.

The cable industry will tell you that the carriage of digital signals is being handled in the marketplace. After four years, let's look at the record: AT&T has done a retransmission agreement with Fox & NBC; Time Warner with CBS, and ABC has reportedly finalized a similar agreement. These agreements *only* cover their owned and operated stations. *Thus, about 90 stations have solved their digital carriage issues with cable by retransmission consent agreements; 1560 stations still await the required full digital must carry,* including broadcasters associated with the emerging networks, and independent, religious and foreign language broadcasters.

If content drives the DTV transition, then give the consumer access to all the free multichannel content that we, the local broadcasters, have the ability to air.

Thank you for allowing me to testify.

Mr. UPTON. Thank you very much. The second bell is about ready to ring for the vote. So at this point we are going to take about a 15-minute break. And when I come back, we will reconvene with Mr. Cookson. Thank you.

[Brief recess.]

Mr. UPTON. Well, thank you very much. This is the last vote of the week. So members will be coming back. And the President is just arriving on the Hill. So we probably will lose a few members to him, too.

Mr. Cookson, welcome.

Mr. COOKSON. Thank you and good morning, Chairman Upton and members of the subcommittee.

Mr. UPTON. If you could just turn, get that mike a little closer? Make sure the light is on as well.

Mr. COOKSON. Okay. Can you hear me okay? Thank you.

#### STATEMENT OF CHRIS COOKSON

Mr. COOKSON. I am Chris Cookson, Executive Vice President and Chief Technology Officer for Warner Brothers. I am here today as a representative of Warner Brothers to express my company's enthusiastic support for the transition to digital television.

Warner Brothers has been a leader in digital television innovation and believes that digital TV will be good for both consumers and the entertainment industry. We look forward to a future where consumers can access information and entertainment in the ways that best suit their lifestyles, where music and movie collections can be served to any room where they are wanted at the click of a button. This convergence is one of the driving visions of the AOL-Time Warner merger.

What digital television promises is greater consumer choice, a much greater range of delivery options and pricing variations. For

example, the consumer could have a choice of video in demand to watch what movie he wants or a subscription to a service to watch a collection of movies on demand over a period of time or an option to own and keep copies of movies.

In a digital world, we also still expect that consumers will be able to freely make copies and to share many kinds of programming, much as they do today, and will continue to be able to do in the analog world.

So, given all the promise, why has the digital transition been so slow? Certainly the questions that were raised over the digital transmission standards have made many wary about investing in technologies that could soon be obsolete.

Also, the need to roll out digital technology with provisions for rights management and the control of copying has been more complicated, I think it is fair to say, than was anticipated. And it has taken considerable effort from three industries collaborating: The entertainment industry, consumer electronics, and computer industries. We at Warner are pleased with the results we are making and look forward to this proceeding.

Why is digital rights management so important to us? Well, digital technology offers consumers great advantages in quality and cost, flexibility and choice. But those advantages carry a much greater risk of unauthorized copying and redistribution.

In the real world, a video store can offer rent the movie for \$3.99, buy the movie for \$19.99, or 30 movies in 30 days for a fixed fee. But in a digital world with unlimited copying and retransmission, those choices couldn't exist. Viewing would need to be priced and sold as if a permanent copy was being made with every transaction. And that would result in an increase in cost to many who would be wanting to just watch the movie.

So one major component that is necessary to bring these advantages to a digital home is a technology that protects content as it is transmitted from a set-top box to a recorder, to a TV, and to other devices in the home, across a whole network that we expect to see.

Five of the major consumer electronics and information technology companies, as was mentioned by the subcommittee, have joined together to create an encryption and authentication technology that can be used to protect these links in the home when the conditions under which the content was delivered to the home require it, as would be the case with conditional access delivery of satellite or cable programming.

This 5C encryption technology is designed, though, for two-way networks. And there is some confusion, I think, that some have because, unfortunately, being designed for two-way networks means that it doesn't work for transmission over the air for the actual broadcasts. But we think that this technology is a key to encouraging the availability of high-value content in critical release windows. And so we have designed, as was mentioned, a memorandum of understanding with the 5C companies and look forward to the roll-out of their technology soon. And we are very close I think to completing the final agreement, as was also mentioned.

Now, should broadcast television signals received over the air be protected? They should be. That is our goal. We are not as big as

some of the other networks, but we are a television network. We are responsible for the origination of the WB.

WB Network has since the day it signed on been originated digitally. And we just completed the beginning of this month a transition to an entire digital distribution system to every one of our affiliates.

Beyond the WB, we also are a supplier of some of the most popular programming on television today: "Friends," "West Wing," and "ER." And we would like to see those programs protected from unauthorized Internet retransmission.

Television broadcasting has a different problem than programs delivered over conditional access systems because the programming itself is delivered in the clear. Now, we wish there was a silver bullet technology to protect broadcasting, but we realize that today's technology can do little that is meaningful to actually prevent signals received off the air from being transmitted and appearing on the Internet. So we do not want to delay the roll-out of other types of protectable programming until we can come up with a solution for what we do about broadcasting.

Why don't we endorse legislation at this time? Well, first, we believe that anti-circumvention provisions in the 1998 Digital Millennium Copyright Act are striking the right balance. It was carefully negotiated as being interpreted correctly and needs time to work.

Second, there is no straightforward technology that can be mandated. For example, watermarking has been proposed, but a great deal more needs to be learned before workable and secure architecture can be deployed across the broad range of consumer devices and PCs.

We recognize that we don't live in a perfect world, but the perfect can be the enemy of the good. Cross-industry efforts must be given the opportunity to continue developing useful solutions. The market should be allowed to evolve without imposing rules that curtail flexibility and innovation. Intervention at this point we are afraid could inhibit the creation of new products and services that would benefit consumers in the converged world.

Thank you. Mr. Chairman, there was a mistake in the written testimony that was submitted. And I would request an opportunity to resubmit for the record.

Mr. UPTON. Without a problem, without any objection, we will do that.

[The prepared statement of Chris Cookson follows:]

PREPARED STATEMENT OF CHRIS COOKSON, EXECUTIVE VICE PRESIDENT/CHIEF TECHNOLOGY OFFICER, WARNER BROS.

Good morning, Chairman Upton and members of the subcommittee. I am Chris Cookson, Executive Vice President/Chief Technology Officer at Warner Bros. I am here today as a representative of Warner Bros. to express my company's enthusiastic support for the transition to digital television.

Warner Bros has been a leader in digital television innovation and believes that digital TV will be good for both consumers and the entertainment industry. With DVD, for example, Warner Bros. worked actively to bring viewers a much better digital picture than was available with analog VHS, and we are pleased with the way consumers have responded.

We are intrigued by the prospect of digital television more generally—for example, the networked home where consumers can access information and entertainment in the ways that best suit their lifestyles; where music and movie collections can be

served to any room whenever they're wanted at the click of a button. This convergence is one of the driving visions of the AOL Time Warner merger.

What digital television promises is greater consumer choice. All of this country's media and communications industries—satellite, telephony, cable, video, broadband and the Internet—already are or soon will be utilizing digital technology. With the powerful tools of digital distribution, consumers will enjoy a much greater range of delivery options and pricing variations. For example, a consumer could have a choice of:

- Video-on-demand to watch a movie once,
- A 48-hour “pass” with unlimited viewing,
- A subscription to a range of on-demand titles,
- Or the option to own and keep a copy.

So, given its promise, why has the transition to digital television been slower than anticipated?

Certainly the speed of technological change and the questions raised over digital transmission standards have made many wary about investing in a technology that could be quickly made obsolete. And the need to roll out digital technology with provision for rights management and the control of copying has involved conversations across industry lines. This has been more complicated than was anticipated. Deploying suitable technologies has taken considerable effort from three industries in collaboration—the entertainment industry, consumer electronics manufacturers and the information technology industry. We are pleased with our progress and agreements we have reached so far.

Why is digital rights management so important to digital TV deployment?

Digital technology offers consumers numerous advantages—higher quality, lower costs, greater flexibility and choice—and overall a better value. But those advantages carry a greater risk of unauthorized copying and redistribution. In the real world, Blockbuster can advertise “Buy for \$19.99, Rent for \$3.99” or 30 movies in 30 days for a set fee. In a digital world with unlimited copying and retransmission, those choices wouldn't exist. Without a “rights management” capability, every viewing would need to be priced and sold as if a permanent copy were being made, thereby increasing prices and limiting investment and creative incentives. To bring consumers the broadest range of options, it is necessary to permit the consumer to buy, and to price, each option. In a digital world, we expect consumers to be able to freely make a copy and share many kinds of programming, consistent with the rights they choose to buy.

One major component necessary to bring these advantages to the digital home is a technology that protects content as it is transmitted from a set top box to a recorder and to other devices across the home network. Five consumer electronics and information technology companies—Intel, Matsushita, Toshiba, Sony and Hitachi—have joined together to create an encryption and authentication technology that can be used to protect those links. This 5C technology can be turned on when the conditions under which content was received into the home require it—as may be the case with cable or satellite video conditional access delivery. This encryption technology is designed for a home network; it is not technologically suited for over the air broadcast television, but it can be used to protect broadcast TV transmissions delivered by cable or satellite. We think that the 5C digital rights management technology is key to promoting the rollout of digital television and to encouraging content owners to make high value content available in critical release windows. We have signed an MOU with the 5C companies and look forward to its swift deployment and use.

Can broadcast television signals received over-the-air be protected under current or foreseeable technology?

We think not, and we believe that would delay the consumer benefits of what we can do with existing technology. We produce some of the most popular programming in the industry—West Wing, Friends, and ER—that we would of course like to see protected from unauthorized retransmission over the Internet. We wish there was a silver bullet technology to protect broadcast transmissions—but we haven't been able to find one to date that doesn't create more problems than it solves. The challenge here is different because the over-the-air broadcast transmission is in the clear—today there are no conditions attached to their receipt by consumers. In our decision to go forward with 5C, we realized that today's technology could do little that was meaningful to prevent homes that receive the signals over the air from retransmitting that programming over the Internet. But we do not want to delay digital TV until as-yet-undeveloped technology comes into being.

Why don't we endorse legislation at this time?

We believe that the anti-circumvention provisions of the 1998 Digital Millennium Copyright Act are striking the right balance. The DMCA was carefully negotiated

and is being interpreted correctly in the courts. It needs time to work. The uncertainty of a protracted legislative debate will likely cause even more delay in the acceptance of DTV.

There is no straightforward technology that can be mandated. Watermarking has been proposed but will be extremely complicated to deploy meaningfully. A great deal more needs to be learned before a workable and secure architecture can be proposed. For example, since watermark detectors need to look at specific file types, a mandate would be meaningless unless the number of file types was controlled and limited. A detector that works in MPEG 2 wouldn't find a mark in an MPEG 4 stream or any other compression format. After the product with the detector is shipped, any new format would be unknown and the system would fail. New formats couldn't be permitted without risking the overall integrity of the system. Mandating a standard at this time would curtail legitimate innovation in compression—one of the most rapidly changing technologies—while giving pirates a place to hide. Any simple manipulation of the data format would effectively obscure the mark.

We recognize that we don't have a perfect world...but the perfect is often the enemy of the good. We think that the cross-industry negotiations must be given the opportunity to continue to develop useful solutions. The market should be allowed to evolve without imposing rules that curtail flexibility and innovation. Given the fast pace of developments in digital entertainment, government intervention at this point in time could inhibit the creation of new products and services that will benefit consumers in the converged world.

Mr. COOKSON. Thank you, Mr. Chairman.

Mr. UPTON. Thank you.

Mr. Weed?

#### **STATEMENT OF STEVEN B. WEED**

Mr. WEED. Thank you. And thank you for having the opportunity to speak to you today.

I am the President of Millennium Digital Media, Northwest, the northwest region. Millennium is an independent cable company. We serve about 175,000 total customers throughout 5 states, including about 50,000 in Michigan, the rural areas of Michigan. My division is based in Seattle, in the Northwest, where we serve about 70,000 customers spread out among 3 states.

I am also the Chairman of the American Cable Association. The ACA represents about 900 members of small and independent cable operators. Of those 900 members, we have about 7.5 million subscribers in every State of the union, independent and small markets.

Millennium, like our members, is focused on digital deployment and deploying high-speed data as well as digital products in rural markets.

I am here to talk about digital broadcasts, but first, I guess, in response to the proverbial chicken and egg, I guess when we look at independent cable, I would say we are the egg and we have just hatched. Independent cable is rapidly deploying digital throughout the United States. We are deploying it because of customer demand.

Customers love the quality of digital product. It is an efficient use of bandwidth so we can put more product on our systems. And right now, in our markets over 30 percent of our new customers are opting to take digital product. It is an expensive proposition, but we are funding that with our own money. And, fortunately, with digital, costs are continuing to go down. And we project that within 5 years, by far the majority of our customers will be receiving digital products.



The issue for digital broadcast is really technical, cost, and bandwidth. From a technical standpoint, to carry broadcast stations, the digital standards that broadcasters are using are not compatible with ours. That really folds into the cost. To force digital carriage before we have resolved the technical issues would put a huge cost on independent cable and, thus, passing on to the customers.

On the bandwidth side, Congress granted broadcasters additional spectrum to carry duplicate digital signals, but they didn't give me additional bandwidth on my cable system to carry additional signals. And there simply isn't any extra bandwidth in independent cable systems to carry duplicate product. That really leads to our concerns.

Broadcast digital should really not be forced into the market before the market is ready. We think in order for the market to be ready for broadcast digital, there needs to be a standard.

It needs to be compatible with our systems. Customers need to have the TVs. There needs to be some product out there. We are not seeing any of that yet. Other than that, it has gone along great for the broadcasters. That would really look to a huge cost for us at this time, as I mentioned, to carry digital broadcasts on the cable systems.

As independent operators, we get our money from Main Street banks. Any money we would spend on digital cable, converting digital broadcast cable, would really come from other products we are trying to deploy like high-speed Internet access in rural markets.

The other concern is forced carriage would have unintended consequences on our business as it relates to the bandwidth. It could delay the deployment of high-speed data, which uses a portion of our bandwidth, and could cause us to have to drop other signals that we don't want to drop.

The solutions? The solution, really, is to let the marketplace guide the transition. Customers want digital. Digital is being deployed. Broadcasters will respond to this customer demand, and digital standards will develop.

Any carriage requirements must address the bandwidth concerns of small operators. No duplication requirements should be put on cable systems' bandwidth. I guess as a comparison, cable is not given the extra bandwidth. In order for us to carry duplicate signals, we would have to be relieved of some of that bandwidth requirements. Maybe we should consider the must carry requirements as competition with satellite maybe makes that no longer relevant.

So let us ensure a reasonable transition. Digital signals do not require a full six megahertz bandwidth. They only require a portion of that to stream a duplicate signal. And let us make sure that large broadcasters can't use their enormous leverage over independent cable to force carriage of products that our customers don't want.

In conclusion, I guess we really don't think this is a fine mess. We think our future of our business is digital. We are rapidly deploying digital. Our customers are migrating toward it. It is a superior technology, has a superior efficient use of bandwidth, and the cost is going to continue to drop. We will be ready to carry those

broadcast signals when the broadcasters are ready to provide us a signal that works for us.

Thank you very much.

[The prepared statement of Steven B. Weed follows:]

PREPARED STATEMENT OF STEVEN B. WEED, CHAIRMAN, AMERICAN CABLE ASSOCIATION AND PRESIDENT, NORTHWEST REGION, MILLENNIUM DIGITAL MEDIA

#### INTRODUCTION

Thank you, Mr. Chairman.

My name is Steven B. Weed, and I am the president of the northwest region for Millennium Digital Media, an independent cable business serving 175,000 subscribers in several states, including the state of Michigan.

I also serve as the chairman of the American Cable Association, which is an association that represents more than 900 independent cable businesses serving more than 7.5 million subscribers primarily in smaller markets and rural areas across the United States. In fact, our American Cable Association members serve customers every state and every U.S. territory and also in nearly every congressional district represented by the members of this committee.

Unlike some larger companies you hear about, ACA members are not affiliated with program suppliers, big 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.

Like other ACA members, my company, Millennium Digital Media, 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.

#### THE ISSUES FACED BY SMALLER MARKET CABLE SYSTEMS IN THE TRANSITION TO DIGITAL BROADCAST TELEVISION

I am pleased to have the opportunity to speak to you for several reasons.

First, my company and the members of the American Cable Association are rapidly deploying digital television. It is a service our customers want, and it is a service we like.

The transition to digital that is taking place in the cable industry today is a success story because cable providers and programmers have, on their own, agreed on and implemented a common standard for the deployment of digital. And as a result, cable companies nationwide are moving aggressively to launch digital in every form, without the need for government action.

In fact, within five years most, if not all, cable subscribers will be watching digital television.

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.

However, unlike the success story that's taking place in the cable industry today, the transition to digital broadcast television poses many significant problems and challenges for both independent cable companies and our customers in smaller markets and rural areas.

These problems and challenges fall into three specific areas:

- (1) important technical and market issues that are not being met first before the transition to digital.
  - (2) the effect of mandatory digital carriage on systems with limited bandwidth, which will result in lost capacity and lost important services that our customer want;
  - (3) the substantial costs and adverse effects of paying for a forced transition to digital, which will stop or hinder the advancement of other new telecommunications services, like high-speed Internet.
- (1) *The Transition to Digital Should Not Be Forced Before the Markets or Technology are Ready.*

As we see the situation in the markets we serve, neither the marketplace nor technology is ready for an efficient transition to digital broadcast television.

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

There is no uniform standard between broadcasters and cable providers for the carriage of digital broadcast signals. Cable has a plan and a uniform standard for the carriage of digital, but the broadcasters do not.

In fact, the broadcasters cannot even agree on what the standards for digital broadcast carriage should be for themselves, let alone for the rest of us.

Television sets with digital receivers capable of receiving cable and broadcast digital signals are not widely available and may not be for a number of years at an affordable cost to the everyday consumer.

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

Broadcasters want us in cable, particularly those of us in smaller markets and rural areas, to use the scarce bandwidth we have now to carry not only their analog broadcast signals, but also the same duplicated programming on digital. What's more, most, if not all, of our customers do not have television sets or converters that can process digital broadcast signals. These customers would simply see a blank, blue screen.

The proscribed timetable for achieving digital broadcast carriage will not be met by the market or the technology.

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.

Cable has already shown that it can meet the challenges of converting to digital signals. As for digital broadcast television, we likewise would be happy to carry these signals as soon as the broadcast industry can deliver a uniform digital signal to us in a format that we can receive.

But until then, we are all in a definite dilemma between the proverbial rock and the hard place. The transition to digital broadcast television is being pushed before the marketplace, consumers, and companies like mine are ready.

*(2) The Unintended Consequences of Mandatory Digital Carriage on Cable Systems with Limited Bandwidth*

Assuming that the numerous issues listed above have been completely addressed, there are nonetheless several other concerns to note. Most notably, forced digital broadcast carriage on smaller market cable systems or the mandatory transition to digital television before the markets or technology is ready would have significant negative consequences on the operation of these independent systems due to limited bandwidth.

Mandating digital carriage would cause the loss of important existing analog and digital programming, and high-speed Internet services. It would also 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.

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

An important point is often missed in this debate: the government has given broadcasters both the analog and new digital spectrum to transmit both of these signals during the transition period. But the law has not granted smaller market cable systems additional bandwidth to carry any of the additional broadcast signals.

We have to pay for our additional bandwidth through costly system upgrades. We can only pay for these upgrades by carrying services our customers will pay us for. Currently, our customers are not requesting digital broadcast signals in our markets.

As I have stated, my company and our industry have aggressively launched digital television to the point where in five years virtually all of our customers will carry it. The cost is continuing to come down on digital carriage, and even the smallest cable television systems are carrying it.

And as for the carriage of digital broadcast signals, when the broadcasters are ready we will be happy to switch their old analog signals to digital signals, but we can't carry both.

From a technical, operational, economic and practical standpoint, we simply cannot carry all of the digital and analog signals of the local broadcasters. The reason? Because we are still required to devote up to fifty percent (50%) of our channel line-ups for other mandated carriage set-asides, such as must-carry, retransmission consent, non-commercial educational programming, public, educational and govern-

mental programming, and leased access programming, not to mention the current analog, digital and high-speed data services our customers now demand and expect.

Who will make the choice to tell my customers what they can and can no longer receive as a result of mandated digital carriage? And is this the right thing to do? I think not. But one thing is certain. My company and other ACA members like mine will get blamed for it, while those dissatisfied customers go to the dish. This result could truly threaten the viability of smaller market cable systems, which would certainly be an unintended consequence of this policy.

In smaller markets, the unintended consequences of mandated digital carriage would include lost important services now and the loss of future advanced telecommunications services because there will be no room to carry them.

What do we do in those systems where we have planned to launch high-speed data Internet services but no longer could if digital carriage is mandated? Is it appropriate for our subscribers to lose the ability now to receive high-speed data in return for the possibility of receiving a digital broadcast signal that they may not receive for years?

#### *The High "Cost" of Converting to Digital*

Right now my company is engaged in a competitive race to improve our systems through the use and deployment of available digital cable services and high-speed Internet. These services are a reality today. They are available now. They are helping us improve to our systems and provide advanced higher quality telecommunications services to our customers today.

My company is using these services to close the so-called "Digital Divide" in smaller markets now. These services and the required systems upgrades are costly. For example, on average it costs about \$130,000 to install a digital cable head-end that will enable our customers to receive significantly more services that they want. But not all customers take these services right off, and the return on investment for a digital head-end like this one is lengthy. In addition, you can understand how difficult it is to economically spread that cost across a system that may only serve 500 customers.

Similarly, there is a substantial per home cost to my company and others 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. They are not on the drawing board or potentially available sometime in the future. My company is doing right now what policymakers appear to want—improving our service, enhancing competition in the marketplace, and closing the "Digital Divide" by providing advanced telecommunications services.

But what if the significant funds that it takes to launch digital cable or high-speed Internet are forced to cover the costs of mandatory digital broadcast carriage? Plainly, something would have to give.

This would be more than an unintended consequence of mandating digital carriage. It would be a direct result.

What can be done, if anything?

#### POTENTIAL SOLUTIONS

##### *Let the Marketplace Help Guide the Transition to Digital.*

First, we must all work within deadlines that are reasonable in the marketplace.

The transition to digital broadcasting is actually a good thing that my company and others like mine will *want* to carry, but not if the marketplace, our customers and consumers, and technology are not ready for this transition.

Many of us remember listening to our favorite music on what we nostalgically refer to as "albums" or "LP's"—long-playing records. However, we all know that the outdated technology of making recordings in pressed, wax albums has given way to the superior digital, laser-embedded technology of the compact disc.

Could this universal transition have occurred before the music providers perfected their technology in a uniform way and made the product and players available in the marketplace at an affordable cost to the consumer? Of course not.

But when the market was ready, consumers embraced CD technology to the point that today albums and LP's are a thing of the past. And soon, CD's will probably give way to a newer technology—MPEG3—when the market is ready.

The transition to digital broadcast television is not really all that different.

The providers, producers and technical people must work together to develop a uniform standard and a product that consumers will want and will be widely available at an affordable price.

Local broadcasters and local cable providers should be encouraged to seek meaningful ways that will help solve the transition to digital broadcast carriage.

On behalf of the American Cable Association, we would welcome the opportunity to participate in this discussion. It would benefit of everyone if we seek and find a workable solution that benefits all.

*The Transition Must Address the Bandwidth Concerns of Smaller Market Cable Systems.*

The transition to digital cannot occur unless smaller market cable providers receive some relief from the many carriage and bandwidth requirements that now take up precious channel space.

Our friends in the direct broadcast satellite business are pushing hard in the federal courts right now to be relieved of broadcast must-carry burdens for many of the same channel-capacity and bandwidth reasons that we are discussing today.

As competition increases between cable and satellite, perhaps the need for these previous carriage requirements no longer exists to the same degree.

To reiterate, the forced transition to digital broadcasting must address legitimate capacity and bandwidth issues. Otherwise, smaller market cable businesses and our customers will suffer because important existing and available advanced services and programming will be lost. Period.

*Let's Encourage a Reasonable Transition to Digital*

Broadcasters should first set reasonable goals that will work in the marketplace as they transition to digital. Many have requested or demanded that cable free up an entire six-megahertz (6 MHz) channel for the carriage of all potential digital signals transmitted by the broadcaster.

But given the legitimate bandwidth constraints of cable technology such actions will cause customers to lose important current services. No one wants that. I believe that broadcasters can and should be satisfied with the carriage of one digital signal as the market bears until such time as the marketplace, cost to consumers and available bandwidth can economically accommodate more.

Moreover, broadcasters should be prevented from using the enormous leverage they have been given through the analog retransmission consent rules to force digital broadcast carriage by holding analog retransmission consent hostage.

The forced tying of digital broadcast carriage to analog retransmission consent does not help to solve the problem, but only deepens the wedge between broadcasters and smaller market cable at a time when they ought to be working together on a new technology that one day soon will benefit everyone.

CONCLUSION

In conclusion, my company's future and our ACA members' future lies in the carriage of digital television. We have already embraced it.

However, the transition to digital broadcast television has significant challenges before it in terms of a uniform standard that companies like mine can receive, the scarcity of bandwidth on cable systems to carry both analog and digital broadcast signals, and the cost of such carriage, both in terms of money and the current important services that would be forced off of our customer's televisions and computers. Moreover, the marketplace and technology have not yet embraced the transition to digital broadcast television.

But like the evolution from LP's to CD's to MPEG3, there is no doubt that the transition to digital broadcast television will occur, and my company and the members of the American Cable Association will be there to receive it as the market and technology allows.

In the meantime, we're committed to working with the Committee and with the broadcast industry on these issues.

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

Mr. UPTON. Thank you.

Ms. Courtney, welcome.

**STATEMENT OF BETH COURTNEY**

Ms. COURTNEY. Good morning, Chairman Upton and members of the subcommittee. I am Beth Courtney, President and CEO of Louisiana Public Broadcasting and the Chairman of the Association of America's Public Television Stations Board of Trustees. I appre-

ciate the opportunity to testify today on behalf of APTS and its member stations. Thank you, Mr. Chairman, for having these hearings.

As you know, public broadcasters have been leading, have been the leaders in using new technologies for education and public service for more than 30 years. We view digital technology no differently. We stand ready to harness this new technology to revolutionize how we fulfill our core mission: to use this powerful tool to provide educational opportunities to all Americans.

Public television stations are committed to the digital transition and have made substantial progress. I testified earlier here, and I want to give you an update on how we are doing in our digital transition.

We have, of course, until 2003, 1 more year, to convert. Today, 2 years before the deadline, we have 28 public television stations that are broadcasting in digital. We signed on in Baton Rouge, Louisiana this year, the only digital station in the State of Louisiana, commercial or public. And we are looking forward to the services that we can provide.

Stations have raised more than \$381 million from State and local governments. So we have had to roll out our plans before legislative bodies across the country, suggesting what we are going to be doing with this capacity. We have also generated more than \$190 million through capital campaigns and private contributions toward this digital conversion.

Public television stations know how we want to use these channels. Since receiving our digital channels, public television has been engaged in system-wide and station-wide planning. I am pleased to report today there are stations today that have developed concrete, bold, and exciting services tailored to their local communities. And I want to thank WETA certainly for the demonstration today.

You saw what they are doing in Washington. It would look a little different as we go around the country. And I would like to thank Sharon Rockefeller, who is here today as the President, for providing this demonstration.

APTS maintains an interactive clearinghouse of stations' plans for digital services. I wanted to give you a sense of what some of these services are. More than 95 percent of public stations plan to deliver at least one multicast digital channel of formal educational services, including K-12 instructional programming, college and university telecourses, workforce development, and job training or adult continuing education.

Seventy-five percent of stations plan to deliver at least two formal education channels of those multicasting. Eighty-five percent of public stations plan to multicast a children's channel that will offer around-the-clock nonviolent educational and commercial-free children's programming. Virtually every station is building new coalitions with old and new partners, schools, museums, libraries, civics groups, to develop this new content, everything from teacher training to foreign language programming.

This is finally sort of the fulfilling of all that we had potential to do with public television, this new channel capacity. In Louisiana, for example, we plan to offer four channels. We are actually

multicasting right now. We have high-definition at night, do multicasting during the day. That is the good news. But I have no cable agreement in Baton Rouge right now with Cox. So they are not picking up anything that we are doing. We are looking at it. We are working on doing this. We are pleased that in the northern part of my state, I have two Time Warner cable providers and PBS and APTS is negotiating an agreement with Time Warner that we are pleased about.

But, you see, interestingly enough, we are so focus on using this medium to deliver education services that it is a unique problem because I could have in the northern part of the State, "K-12, services on a cable system." And I could in Chairman Tauzin's district no services because they weren't delivered through the cable system.

So it is a complex problem as we send this out to deal with the education issue for an entire state. That is true in each one of our states, I would think, and your local communities.

Our stations are on the cutting edge of using this new technology. We are not just talking about it. We are all involved in experiments of enhancing data in the materials. We have DVD examples of this. We are working with our education community. We are very excited about digital, but we believe there are some key elements that we are going to ask for your help in.

First, public broadcasters is seeking a Federal contribution of \$699 million over 5 years to be matched by the State and local funding I talked about. This is to help public television and radio meet the staggering \$1.8 billion cost of digital transition. It is really overwhelming. I had to strengthen towers, like my colleagues do, put in new transmitters, new antennas, and do it in this time line.

Included in this request—I know some of you may be interested in this—is a \$33 million Federal contribution to the cost of converting public television translators throughout the country. And this conversion of translators to digital will allow public television to bring the benefits of broadband digital services even to the most rural areas of the country.

Second, we seek assurance that all the multicast and interactive services on our digital signals reach American viewers. On this point, let me use my final minute to suggest some serious concerns about the FCC's recent must carry decision. Two elements, in particular, are very disturbing and will have serious public policy implications for public television and the American public.

First, the FCC determined based on a narrow interpretation of a provision in the 1992 Cable Act that cable operators are required to carry only one multicast digital program stream from a digital-only station. If allowed to stand, this interpretation, which we believe is legally incorrect, will prevent the public from benefiting from the full range of multicast services that our stations stand ready to provide.

Am I to choose adult education or K-12 education? To which of those multi streams would I choose to be the primary video? We suggest that that is not a proper interpretation of it.

Second, the FCC tentatively decided, notwithstanding its acknowledgement that it needs further information, the dual analog-digital carriage is unconstitutional. This tentative decision, which

cannot be reviewed in the courts, unnecessarily and prematurely slants the debate on this very critical issue in favor of cable operators. This seriously undercuts broadcasters' ability to engage in discussions with cable operators to reach voluntary agreements, as both the Commission and Congress have urged.

Cable carriage of broadcasters' digital signals is the only viable means for public television stations to get their digital broadcast services to the public. And that is what we want, both during and after the transition. Currently cable serves 70 percent of the American households. And it is predicted that by 2006, it will reach 42 percent of its subscriber households with digital cable services.

We plan to give the Commission additional information, but we suggest you really need to look at this one primary video signal. It really just blows up our multicast strategy, frankly. We will keep the subcommittee informed about all of our efforts involved in this, but we may come to you with asking for additional help in this arena as it rolls out.

In conclusion, let me say that for more than 30 years, Congress has invested wisely in public broadcasting. We now have a strong system of public television stations, and we reach 99 percent of the American households, giving viewers tools to improve and enrich their lives.

This public service promise of this new digital technology is enormous. And public television stands ready to unlock its potential to serve the public. A renewed Federal investment in digital facilities and Federal policies that ensures access to all digital services will allow public television to lead this transition, rather than be its victim.

We look forward to working with you to reach this goal. I was listening to your comments. I said, "But I am not the chicken or the egg. I hope I am not an old nag." I don't think I am the mother of this dysfunctional family, but I do think we can get to heaven. And heaven is to have every American citizen be able to receive these digital services. We are concerned, really, about that last mile.

[The prepared statement of Beth Courtney follows:]

PREPARED STATEMENT OF BETH COURTNEY, PRESIDENT AND CEO, LOUISIANA PUBLIC BROADCASTING

Good morning Mr. Chairman and members of the Subcommittee. I am Beth Courtney, president and CEO of Louisiana Public Broadcasting and the chairman of the Association of America's Public Televisions (APTS) Board of Trustees. I testify today on behalf of APTS and its member stations. Thank you for holding this hearing today, Mr. Chairman, on the status of the rollout of digital broadcast services.

Public broadcasters historically have been the leaders in using new technologies for education and public service. We view digital technology no differently. We stand ready to harness this new technology to revolutionize how we fulfil our core mission—to use the media to educate all Americans.

Public television stations are committed to the digital transition and have made substantial progress toward meeting the May 2003 construction deadline. Today, two years before the deadline:

- 28 public television stations are broadcasting a digital signal that potentially reaches 37 percent of U.S. households with free digital programming.
- Stations have raised more than \$381 million from state and local government partners.
- Stations have generated more than \$190 million through capital campaigns and individuals in their communities.



Public television stations are committed to using their digital channels to deliver non-commercial educational programs and services to their local communities. Virtually every public station:

- has developed bold service plans that call for the delivery of multiple educational services to their local communities;
- plans to deliver one if not more multicast digital channels of formal educational services; and,
- is engaging in exciting new partnerships with local community institutions to develop new digital content.

But public television cannot complete the first step of this transition or deliver this new educational content without federal support in two critical areas.

First, public broadcasters are seeking a federal contribution of \$699 million over five years—to be matched by state and local funding—to help public television and radio meet the staggering \$1.8 billion cost of the digital transition.

Second, we seek assurance from the FCC or Congress that all the multicast and interactive services on our digital signals will actually reach the American viewers, irrespective of whether they receive their local television over the air, by satellite or via cable.

#### HARNESSING DIGITAL TECHNOLOGY TO SERVE THE PUBLIC

With roots going back to the earliest days of radio and television, America's public broadcasters have played a unique role in a media industry that is otherwise built on consumer advertising and mass market entertainment. Into the 1960s, as television evolved into three major networks and a handful of independent commercial stations, publicly funded noncommercial television provided the one clear alternative, focusing on education and culture, public affairs and the performing arts. In 1967 Congress passed the Public Broadcasting Act as an amendment to the Communications Act of 1934. With this legislation Congress laid the cornerstone for the future of noncommercial educational broadcasting.

Public television's core mission will not change in a digital world. We will build on our track record of providing the best programming and services to educate and enlighten audiences. We also will continue to be leaders in using new technology for the public interest. From satellite delivery of broadcast signals, to the development of stereo broadcasting; from closed captioning and descriptive video services, to video streaming and cutting edge interactive television trials, public broadcasters have been inventors, innovators and blenders of technologies to serve the public.

For well over a decade, public television has guided the development, testing and implementation of digital broadcasting. While digital broadcasting is still a developing technology, one thing is clear—it is our future—and we wholeheartedly embrace its opportunities. In a single digital channel, stations can transmit a high definition program stream or multicast four or more channels of standard definition program streams simultaneously along with a standard definition program stream. Concurrent with these video streams, stations can broadcast huge amounts of data, text, graphics, audio and visual information in seconds. The data can be used interactively to enhance the learning experience of the program, provide a continuous flow of information (e.g., weather, emergency warnings, program guides), or be downloaded for other educational purposes (e.g., course materials, teacher and student guides, and teacher training materials).

Public television is committed to use digital technologies to transform the way we learn—by providing the American public with educational services how they want them, when they want them and where they want them—in homes, schools, childcare facilities, and workplaces across America.

#### MULTICAST DIGITAL SERVICES—UNLOCKING PUBLIC TELEVISION'S PUBLIC SERVICE MISSION

Since receiving their digital channels, public television stations have been engaged in systemwide and station level planning. In 1997, public broadcasting put forward a comprehensive plan for its digital conversion to the Administration and Congress. We set four broad systemwide goals for the use of digital technology—goals that are founded on fully utilizing the multicasting capability of the digital technology to expand and enhance services.

1. To make the full complement of Ready to Learn services available to every child, parent and caregiver in America.

*The PBS Ready to Learn Service is currently meeting two national education goals: it teaches basic reading skills and it helps prepare more children for school success. Its 133 participating stations cover over 94% of the country. In*

*the past three years, RTL public television stations have trained 370,000 parents and 250,000 teachers and caregivers, affecting approximately 6 million children.*

2. To expand the reach of public television's K-12 educational programs and services by making them universally available to all schools.

*70% of public television licensees provide K-12 programming in math, science, arts and humanities. These services are enhanced by:*

*PBS TeacherSource, an online K-12 teacher resource with line lesson plans, teacher guides and activities, correlated to more than 90 national and state standards;*

*and,*

*PBS Teacherline, online modules to enhance the learning and teaching of K-12 mathematics.*

3. To increase the reach of post secondary telecourses so that they are universally available to all adult learners.

*Collectively, public television stations are the largest source of post secondary telecourses in the nation. PBS Adult Learning Service (ALS) supports station-college partnerships that offer distance learning credit-bearing telecourses, enrolling more than 500,000 students in 1999-2000. GED on TV has enabled more than two million adults in five years to earn their high school equivalency from home. The estimated positive economic impact of these more productive workers exceeds \$12 billion.*

4. To expand our commitment to serving the un-served and under-served populations in our country, those who because of economic, geographic, physical, cultural or language barriers have been left behind by the commercial marketplace.

*Public Broadcasting has pioneered the development of open and closed captioning for the deaf and descriptive video services and reading services for the blind or visually impaired. Stations like WYBE, Philadelphia and WNVN, Fairfax provide programming in multiple languages serving a variety of different ethnic cultures.*

I am pleased to report today that our stations throughout the country have turned those systemwide goals into concrete and very bold and exciting service plans tailored to their local communities. APTS maintains an interactive clearinghouse of stations' plans for digital services. Our data show that virtually every public television station in the country has developed digital service plans to meet these and other goals. The centerpiece of virtually every plan is the delivery of multicast services with a strong focus on education.

- More than 95 percent of stations plan on carrying at least one formal educational multicast service, including, for example, adult continuing education, K-12 instructional programming, workforce development & job training, or college/university telecourses.
- Three out of every four PTV stations plan to carry at least two formal education multicast services.
- Approximately 85 percent of PTV stations plan to multicast a children's channel; 78 percent intend to broadcast university-level or post-secondary telecourses; and 66 percent plan to multicast an instructional programming channel for students in grades K-12.
- Others plan to multicast channels that focus on local public affairs, teacher training, foreign language programming, and programming aimed at minority and under-served audiences.

As WETA will demonstrate today, some of our digital stations are already broadcasting multicast program streams. Others are laying the groundwork for multicast broadcast services by developing digital content for Internet, cable, satellite, and DVD distribution. Virtually all stations are aggressively building new coalitions with old and new partners—schools, colleges, libraries, museums, and cultural, government, and civic groups—to utilize digital technology to meet critical community needs.

#### PTV DIGITAL SERVICE PLANS—CREATING LOCAL SOLUTIONS FOR NATIONAL PRIORITIES

*Realizing National Educational Goals on a Local Level:* While virtually every public television station plans to deliver one or more formal educational multicast channel, the specific educational services are tailored to meet local community needs.

Florida public television stations have promised the state legislature that they will collectively devote a multicasting stream to the Florida Knowledge Network in return for digital funding. This statewide educational network will serve as a teacher training resource, linking Florida's classrooms with direct access to the highest quality programming, electronic field trips, and distance learning. Originating from the Florida State Department of Education and

school systems in 17 counties, the network will tailor programming schedules and curriculum (e.g., GED, math, science, English, art, music, and foreign language) for localized use.

New York's public television stations plan to dedicate one of their multicast streams to an educational service called the Empire State Channel. Developed with the state Department of Education, the Empire State Channel will feature teacher training, vocational instruction and public affairs programming. Among the goals of the Empire Channel are to support such state initiatives as meeting New York's scholastic standards and goals, expanding GED on TV and other lifelong learning programs, and developing job skills for the transition from welfare to work.

Kansas, Missouri and Illinois public television stations, in partnership with 350 school districts, have developed "Chalkwaves," an Internet-based educational service designed to meet three critical needs of the teachers in those states: high-quality, standards-linked instructional aids, the training needed to use these aids effectively and the professional development needed to earn required state credits. Chalkwaves, which currently serves more than 30,000 teachers and over 350,000 students through the Internet, is laying the foundation for a digital multicast service.

*Providing Unserved and Underserved with Access to Digital Technology:* Today, public television stations, through their nationwide system of transmitters and translators, serve 99 percent of American households with an analog signal. Public television stations that serve rural communities with a network of analog translators are ideally positioned to bring the benefits of broadband digital services to the most rural and remote areas of this country. A recent study by Idaho Public Television shows that one-fourth of the Idaho residents would not be able to receive high-speed data service even if their current facilities were DSL enabled. In contrast, Idaho PTV, if its existing system of transmitters and translators were converted to digital, could reach two-thirds of these households with broadband digital services. With requested federal support for the transition of public television translators to digital, public stations will bring multicast and data services to those geographically isolated.

KAET in Phoenix plans to partner with KUAT in Tucson to dedicate one or two multicasting channels to feeding math, science, geography and other educational programming to 300 schools throughout the geographically diverse state. Directed by the stations and funded by the state Department of Education and Arizona State University, programming will include short, 15-minute clips that relate directly to course materials, and teacher training. Program segments will be accompanied by curriculum guides, instructional materials, and planning booklets that can be downloaded to computers in the classrooms. These services are intended to reach students in the farthest corners of Arizona, students who are unable to be linked via telephone and fiber optic lines.

KNME in Albuquerque is considering leasing part of its digital spectrum to the New Mexico Department of Education to facilitate the delivery of educational materials to the state's K-12 schools. The station will position itself as the state's virtual classroom, providing curricular support and teacher training opportunities for viewers separated by hundreds of miles. This arrangement would allow the Department of Education to help with the costs of digital conversion.

Public television stations also plan to use the multicast capability to serve populations under-served because of cultural, language or economic barriers.

KBDI in Denver plans to launch a Latino Initiative Channel. This channel would feature programming for Denver's Spanish-speaking and bilingual community and will emphasize news, public affairs, and social and cultural events. Potential partners include local community service organizations, schools, commercial Spanish-language broadcasters, and public service agencies.

WNYE in Brooklyn and WYBE in Philadelphia plan to provide multicast foreign language and international channels to serve the international residents in their respective cities. The WNYE multicast channel will feature programming in at least 12 different languages, including Japanese, Chinese, Italian, Greek, Polish, and Eastern European languages. Digital multicast will allow WYBE, which currently serves more than ten ethnic communities in Philadelphia, to further expand the reach of its ethnic language programming. Both stations will offer public affairs, local news, international news and cultural programming from countries around the world.

To meet the needs of elderly viewers, WHYI in Philadelphia plans to create a Home Companion Service aimed at the growing population of aging Americans. Although designed to appeal to all members of the senior community, it

will be directed primarily toward the homebound for whom activities and contact with the outside world are limited.

*Partnering with Local Institutions to Solve Local Community Problems:* A key characteristic of public television's digital planning is localism. In an age of increasing media consolidation, public television stations remain the only locally owned, locally operated television service in many communities. Consequently, several PTV stations are planning "local" channels, focusing on specific community needs.

Vermont Public Television plans a Vermont Public Service Channel, which would provide regular coverage of the state legislature, important legislative committee hearings and other statehouse-related programs, as well as local government town meetings and debates. Additional programming might include call-in programs with the Vermont congressional delegation, travel and tourism information, and other local news and public affairs programming.

KEET in Eureka, California, plans to partner with local non-profits, arts organizations and social service agencies to develop and broadcast programming for a North Coast Channel. This programming would include documentaries and history specials specific to that region of the state. The North Coast Channel will also feature collaborations with hospitals, arts councils, employment agencies, and the chamber of commerce. These partnerships would yield shows focusing on health care, arts performances, employment opportunities, and highlights of tourist attractions.

#### REALIZING THE PROMISE OF DIGITAL: A TRUE PUBLIC-PRIVATE PARTNERSHIP

Public television stations can only realize their plans to harness digital technology to enhance educational opportunity for all Americans with federal support.

Public broadcasters have been aggressively seeking financial support from a range of public and private sources, foundations and corporations, loyal viewers and entrepreneurial endeavors, and state and local government partners. To date, stations have raised more than \$381 million from state and local government partners; and more than \$190 million through capital campaigns and individuals in their communities. While this show of support from local sources is vitally important, it cannot replace federal funding. In most state legislatures, the DTV funding was provided with an expectation that it would be matched by federal funds. Some state funding, in fact, is conditional upon a federal contribution.

Likewise, public broadcasters, since their initial request in 1997, have sought authorization and annual federal appropriations to support their digital transition. While there was bipartisan recognition of the need for federal support, the federal government to date has only made a modest contribution to fund public television's digital transition. We acknowledge and appreciate the leadership of Chairman Tauzin in introducing H.R. 2384, the Public Broadcasting Act of 1999, which authorized digital funding through PTFP and CPB, and the previous administration's inclusion of a five-year, \$450 million package in its budget. Yet PTFP grants for digital television equipment totaled only \$19 million in FY 1999 and 2000; and it is yet to be determined what portion of the FY 2001 PTFP appropriation of \$43.5 million will be allocated for digital transmission equipment. This lack of adequate support is particularly threatening given the government's mandate to build DTV facilities by 2003 and to switch from analog to digital by 2006.

The federal government must play its historic leadership role in underwriting a portion of public broadcasting's digital transition. The government's failure to make this investment will have direct consequences. Millions of Americans may be deprived of the enormous educational promise of digital television. Many of the smaller and rural stations may be unable to make the transition at all.

The public broadcasting industry has updated its costs for the digital transition. Balancing reductions for the stations currently on the air against additions for increased costs, public broadcasters estimate the total costs of conversion for both television and radio at \$1.8 billion.

Public broadcasters are seeking \$699 million over five years in federal assistance, 48 percent of the total estimated conversion costs. (This would cover television and radio transmitters and translators, and minimal production equipment at each station, supplemented by more fully equipped regional production centers.) We are seeking all of these digital funds through the Public Telecommunications Facilities Program (PTFP) at the Department of Commerce.

5 Year Authorization Request  
Year-by-Year Request (\$ millions, fiscal year)

	2002	2003	2004	2005	2006
TV Transmission .....	486	324			
TV Translators .....			34	34	
TV Production .....			151	151	151
Digital Radio .....	12	35	58	11	
Total cost <sup>1</sup> .....	497	359	243	197	151
<hr/>					
Total cost plus contingency .....	544	386	253	228	181
<hr/>					
REQUEST .....	256	183	107	87	66

Total figures may vary slightly due to rounding.

There is an immediate and urgent need for a significant commitment of digital funding from Congress this year. A total of \$256 million is needed for FY 2002 and \$183 million in FY 2003 to allow stations to attempt to comply with the FCC's 2003 construction deadline. Even aggressive front-loading of funds would require the FCC to grant some waivers from the deadline. The FY 2003 PTFP grants will not be issued in time to allow stations to meet the 2003 deadline. Moreover, equipment manufacturers and engineering firms simply cannot handle the broadcasters' backlogged demand for equipment and tower construction.

Included in the request is \$33 million (to be allocated in FY 2004 and 2005) to cover the estimated \$68 million cost of converting the public television translators throughout the country. These translators are critical vehicles to provide broadband digital services to rural and under-served communities.

On behalf of our public broadcast stations, we seek quick authorization of the five-year digital funding request as well as reauthorization of the stations annual operating funds through CPB.

REALIZING THE PROMISE OF DIGITAL: SUPPORTIVE FEDERAL POLICIES

The Commission's recent must carry decision—rendered in the final hours of Chairman Kennard's tenure, with little deliberation and virtually no opportunity for industry input—would, if left intact, nullify the public's opportunity to benefit from the digital services that public television stands ready to provide.

We have serious concerns about many elements of the decision, but two are particularly disturbing: the FCC's determination that cable operators are required to carry only one multicast digital channel of a digital-only station; and the FCC's "tentative decision" that dual analog/digital carriage is unconstitutional, notwithstanding its acknowledgement that it needs further information.

We ask Congress to clarify that the FCC has discretion under the 1992 Cable Act to require carriage of all multicast digital program streams, and, if necessary, clarify that Congress mandated dual analog/digital carriage in the 1992 Cable Act.

*Clarify Primary Video:* If allowed to stand, the FCC's narrow definition of "primary video"—that is entitled to carriage—as only a single multicast digital stream would have broad ranging public policy consequences:

- It would undermine public television stations' plans to provide a wide range of multicast educational services to their communities. Although the primary video decision applies only to stations that are operating in a digital-only mode (which will generally occur only after the transition), it will have an immediate crippling effect on public television's plans to optimize the educational potential of multicast services.
- It would undermine local stations' ability to raise funds for the digital transition. Stations' efforts to raise funds from state and local government entities and from their local communities are founded on their commitments to deliver multiple educational services on a universal basis to their states and local communities.
- It would threaten the viability of free local digital public television. Local stations depend on viewer support to survive, therefore carriage of a public station's full range of non-duplicative digital program services is essential.
- It would undermine rather than facilitate public stations' negotiations with cable MSOs for the voluntary carriage of digital signals. As such, it is contrary to the Commission's and Congress' stated goals of facilitating voluntary carriage agreements.

- It would frustrate the delivery of local public affairs programming, children's programming, programming related to the political process, programming designed to serve diverse segments of local communities, and programming fully accessible to persons with disabilities.
- It would prematurely build in a regulatory disincentive to the development of the fullest and best use of digital technology, and
- It would delay the speedy transition to digital broadcast, and the return of the analog spectrum, by limiting access to multiple digital services that will encourage consumer acceptance of digital technology.

We welcome the support of members of Congress on two alternative fronts. First, we ask Congress to clarify, in the context of public television's petition for FCC reconsideration on this issue, that the FCC has discretion under the statute to interpret the "primary video" carriage requirement in the 1992 Cable Act to include all free over the air multicast digital streams. Second, in the event the FCC declines to reconsider its decision, we ask Congress for legislation clarifying that "primary video," as applied to carriage of digital signals, consists of all free over-the-air multicast digital streams that can be delivered within a public broadcaster's 6 MHz digital channel.

*Clarify Dual/Analog Carriage Requirement:* We also believe that the FCC's "tentative decision"—that carriage of both a station's analog and digital signals during the transition is unconstitutional—is unwarranted and will have serious unintended public policy consequences. The Commission stated that it needed additional and updated information in the record before reaching a final decision. Yet it reached a "tentative decision" that cannot be reviewed in the courts, and that unnecessarily and prematurely slants the debate on the future of must carry protection in favor of the cable operators.

Cable carriage of broadcasters' digital signals is the only viable means for public television stations to get their digital broadcast services to the public during the transition. Cable serves 70% of American households or about 177 million viewers, and will be the first to reach any significant penetration of digital services in American homes. Cable operators predict that by 2006 they will be providing digital services to approximately 42% of their subscriber households.

In contrast, over-the-air reception of digital signals will not, as a practical matter, be available to the public for some time into the transition. As other witnesses will testify, a range of factors can be cited for the delay in the rollout of digital broadcast services, including: poor receiver performance; lack of receiver penetration in the marketplace; lack of digital reception capability in receivers; lack of compatibility between cable boxes and digital receivers; lack of industry agreement on copyright protections; and, tower, equipment and funding issues that have delayed construction of digital broadcast facilities. The reality is that cable carriage of all free over-the-air program streams on cable systems during the digital transition is essential to ensure that millions of Americans have access to the full range of multicast educational services public television stations plan provide.

We plan to provide the Commission with the additional information it requests on cable capacity and other issues. We also plan to show that a dual analog/digital carriage requirement can be tailored for public television stations in a manner that serves important government interests without unduly burdening cable operators' First Amendment interests. We will keep members of Congress informed as we proceed with our efforts to secure an appropriate transitional carriage provision before the FCC. Although we believe that Congress already clearly mandated dual carriage in the 1992 Cable Act, we may be returning to Congress to seek legislation requiring cable carriage of digital broadcast signals during the transition.

*Other Digital Policy Issues:* In addition to ensuring that cable subscribers have access to public television digital channels—both during the transition and beyond—Congress can take other important steps to speed the transition and to help resolve the outstanding issues that are impeding its rollout. Our proposed actions on these issues is outlined in the attached August, 16, 2000, letter to Chairman Tauzin, which was sent in response the Chairman's question as to what actions Congress could take to speed up the transition.

#### CONCLUSION

For more than 30 years Congress has invested wisely in public broadcasting. We now have a strong system of public television stations that reaches 99 percent of American households, giving viewers tools to improve and enrich their lives. The public service promise of new digital technology is enormous:

- for children to provide a dedicated stream of nonviolent, educational and entertaining programs, commercial-free and free-of-charge;

- for parents and schools to better educate children;
- for colleges and universities to reach out beyond their campus walls;
- for students of all ages to have access to lifelong learning;
- for under-served audiences whose income, geography, culture or disability threatens to cut them off from the digital promise;
- for citizens who feel alienated from their local, state or federal governments; and
- for public service organizations seeking to build a sense of civic connection and commitment.

But realizing this potential and remaining a viable service provider in the digital age is fully dependent on a renewed federal investment and federal policies that insure access to all digital services. Public television stands ready with service plans, matching state and local grants, and community-based content partners to fully utilize this technology for public service. Investing in public television's digital conversion and providing for cable carriage of our nation's public television stations would make digital service universally available, support models for new and innovative digital programs and services, boost the quality and quantity of digital programs, and accelerate the digital transition. Failure to invest in the public television's digital transition will not only miss this opportunity to support public television's digital leadership, but will fundamentally jeopardize public television's future viability.

Mr. UPTON. Thank you.

Ms. COURTNEY. Thank you.

Mr. UPTON. Thank you.

Mr. Arland?

#### STATEMENT OF DAVID H. ARLAND

Mr. ARLAND. Thank you, Chairman Upton and members of the subcommittee, for the opportunity to testify today.

Again, my name is Dave Arland. And I am Director of Government Relations for Thomson Multimedia. You may not know Thomson, but you certainly know what we make: RCA, GE, and PROSCAN brand home entertainment products.

We are the leading television manufacturer and marketer in America. And as RCA, we developed the analog TV technology in use today. We played a substantial role as well in the creation of America's digital television systems, including both the over-the-air standard that we have been talking about today and the very popular direct TV digital satellite receiving system. Today, in addition to representing Thomson, I represent the Consumer Electronics Association.

Now, I come from Indiana in the Midwest, where my grandfathers worked for the Chesapeake and Ohio and the Baltimore and Ohio Railroads. The railroads transformed America. They shortened communication links. They delivered commerce. They transported people and business. And in many ways, the transition to digital television is quite similar.

Like a locomotive picking up steam, digital TV in all of its forms is building momentum as manufacturers of digital TV products expand their offerings, lower consumer prices, and enhance the capabilities of home entertainment products. But the locomotive cannot operate alone. It needs engineers. It needs cars with passengers. And its enormous engine needs to be constantly stoked with fuel.

We do need more coal in that boiler; that is, more programming, to fuel interest in digital TV. And we need to make sure that we don't leave anyone at the station, especially consumers who depend on cable for their TV service.

Now, to give members of the subcommittee some idea of how quickly manufacturers are working to improve affordability of dig-

ital television products, Thomson is quite pleased today to announce that effective in April, consumers will be able to buy our wide-screen, fully integrated with over-the-air and satellite electronics 38-inch RCA HDTV—that is a mouthful; that is the set that is right here to my left—for just \$2,999. This marks a 21 percent reduction in consumer prices since this product was first introduced last fall.

We are making a very similar move on our production HDTV, which is going to drop by 22 percent, and on HDTV monitor products. This, of course, is in addition to offering the industry's most popular and most affordable digital set-top, which you saw in the demonstration.

Let me speak for the industry. Digital TV sales are quite strong for a new category. Industry sales to dealers of digital TV monitors and integrated sets reached more than 648,000 units last year, which represented a more than 400 percent increase over 1999. Now, that is still a long way from beating sales of analog TV, but the trend is very positive.

In 2001, our industry predicts sales of 1.1 million units, representing an investment by retailers, as has been mentioned this morning, of more than \$2 billion in digital TV products. And so far in terms of sales, we believe we are right on target. In fact, in the month of January 2001, retailers bought more than 80,000 digital TV products.

However, there remain three big obstacles on the tracks ahead, as has been mentioned: first, more programming; second, cable compatibility; and, third, protecting digital content. First, obviously is the need for greater amounts of unique, high-quality DTV programming and especially HDTV. No amount of affordable receiver equipment will drive consumer demand for DTV if there is only a little bit to watch, mostly on CBS, PBS, and HBO, as well as stations like WETA.

And I understand, Mr. Chairman, you visited WNDU in South Bend recently. They have made a tremendous investment with not much to show for it in terms of programming from their network supplier.

As Chairman Tauzin reminded us today, the availability of free over-the-air HDTV programming is absolutely part of the deal. It is time for broadcasters to recommit themselves to offering Americans abundant amounts of HDTV and, of course, other unique quality DTV programming services.

We concur with Ms. Courtney. We also would urge Congress to take a closer look at the primary video issue. It is critical that public broadcasters especially have multiple streams that are carried on cable.

Next obviously is cable compatibility. Most people today get their TV from cable. It is a fact. It is not going to change as part of this tradition overnight. If we have any chance of achieving a meaningful penetration of DTV into 70 percent of American households that subscribe to cable, cable consumers must first be assured that the DTV receiver they purchase will function as advertised, including reception of full HDTV when receiving signals over cable. And while we do have certain baseline agreements with the cable industry, we have no build-to specification yet.



My mom in Greenfield, Indiana is a prime example of why this is so important. Under no circumstances she has already told me is she ever going to go out and buy an ugly antenna. She said if she expects to see digital television, it has to work with her cable system.

Another major obstacle to greater availability of quality DTV content is the need for final resolution on adequate and reasonable agreements for digital content protection. There is no question that a major concern of both Hollywood and the consumer electronics companies is preventing commercial piracy through large-scale retransmission of content over the Internet. We do share this objective. However, consumers must still be able to record programs, keep them, and watch them later.

Going backwards on this point, Mr. Chairman, will only sour consumers on the digital TV transition. And there will be new recording methods, such as hard disks and DVD recorders, but that does not mean we should lock everything up and treat consumers as common criminals.

Finally, let me say that some are suggesting the only way to reach sufficient DTV penetration levels is to force integration of digital tuning capability into every TV set. Simply put, forced TV integration of electronics will only succeed in driving up the price of consumer TV sets in the short term.

Here is something to consider. About 40 percent of the TV sets sold in America today have screens that measure 20 inches or less. They sell for under \$220 each. Adding the advanced digital TV reception capability to these sets for the foreseeable future would at least double the retail price of these products. Instead of government imposing a DTV tuner mandate, the history of our industry suggests that robust competition matched with widely available content will effectively drive down consumer hardware prices, frankly, much faster than I would like.

I thank you for the opportunity to testify. And I look forward to your questions.

[The prepared statement of David H. Arland follows:]

PREPARED STATEMENT OF DAVID H. ARLAND, DIRECTOR, GOVERNMENT RELATIONS,  
THOMSON MULTIMEDIA, INC. ON BEHALF OF THE CONSUMER ELECTRONICS ASSOCIATION

#### INTRODUCTION

Thank you, Chairman Upton, Ranking Member Markey and Members of the Subcommittee for the opportunity to testify today on issues affecting the transition to digital television ("DTV"). My name is Dave Arland, and I am the Director of Government Relations for Thomson Multimedia, Inc. I am testifying today not only on behalf of Thomson, but also the Consumer Electronics Association (CEA). CEA represents more than 600 U.S. companies involved in the development, manufacturing and distribution of audio, video, mobile electronics, communications, information technology, multimedia and accessory products. Its member companies, which include Thomson, account for more than \$60 billion in annual sales.

Thomson, which is best known as a manufacturer and marketer of RCA, PROSCAN and GE brand names, is the leading television and digital satellite receiver manufacturer and marketer in the United States, each year selling more than 5 million televisions and 3 million digital satellite receivers. One out of nearly every five television sets sold in the United States is a Thomson product. Headquartered in Indianapolis, Indiana, Thomson employs more than 7,000 Americans working in facilities across the nation. Thomson helped develop the U.S. digital television system and has been a leader in the field of DTV innovation for more than a decade.

## THE STATE OF THE DTV TRANSITION TODAY: BUILDING MOMENTUM

Thomson and CEA greatly appreciate the Subcommittee's continuing oversight of the transition to advanced television services, reflected in today's hearing. This Subcommittee, under both Republican and Democratic leadership, going back to the first HDTV hearing chaired by Congressman Markey in September, 1987, has played a key role at several critical junctures in the evolution of digital television services. This Subcommittee has helped to galvanize industry to do the cooperative work necessary to bring the benefits of DTV to American consumers, has prodded the FCC to provide regulatory stimulus when necessary, and has formulated legislation to accelerate and facilitate the deployment of DTV services.

Today, we stand at yet another pivotal point in the progression toward deployment of DTV services to all Americans at a price they can afford. In Thomson's view, the DTV transition is progressing better than some critics contend but not as well as many had hoped. The testimony which this Subcommittee will receive today from almost every witness will contain some good news about what that industry segment is doing to speed the DTV transition together with an array of concerns about others not doing enough.

There are two fundamental realities about the DTV transition. The first is that the science of digital television is revolutionary, the technical challenges in making all of this work with an open yet interconnected system, as opposed to a closed system, are daunting, and technical breakthroughs cannot be decreed by government fiat to occur by a date certain. The science of digital television requires time and patience. As this Subcommittee considers how to facilitate the DTV transition, it also needs to understand the technical difficulty of the enterprise, the hundreds of millions of dollars invested by industry to reach where we are today, and the genuine progress we have made to date.

The second reality is that the business aspects of the DTV transition are almost as complex as the science and, arguably, more difficult to resolve. The science of digital video offers enormous potential market opportunities to industries which compete fiercely with each other and to companies competing vigorously for market shares within industries. Yet, the technology is so new and is still evolving that many of the corporate stakeholders can see only the vague outlines of viable business plans. The vastness of the business opportunity combined with the uncertainty about particular business applications makes the inter-industry struggle for control of key elements of the DTV infrastructure and technology all the more intense.

While there remain some technical obstacles to a successful completion of the DTV transition, the more difficult obstacles are business related. The remainder of this testimony describes the range and costs of DTV products available to consumers today, endeavors to identify remaining obstacles to a successful DTV transition, and offers some solutions to overcome them.

## MANUFACTURERS ARE PROVIDING CONSUMERS WITH A GROWING ARRAY OF DTV PRODUCTS AT RAPIDLY DECREASING PRICES

*1. Sales of DTV Products Exceed Many Previously Successful Consumer Electronics Products At A Comparable Time In Their Product Launch*

The transition to digital television, from the perspective of DTV manufacturers, is building momentum. Last year, sales of DTV products—including DTV receivers, high resolution displays and set-top converter boxes—reached more than 684,500 units and accounted for \$1.4 billion in consumer investment. This year, CEA estimates sales of DTV receivers and displays will increase as much as 80 percent—to 1.125 million units—with consumer investment climbing to \$2.1 billion.

The successful introduction of DTV products is exceeding initial industry projections. It compares quite favorably with the introduction of other popular consumer electronics products. In fact, *annual growth in both unit and dollar sales for DTV products during the first four years on the market is projected to surpass that of computers, VCRs, CD players, and color TVs.*

A broad array of products is being offered to consumers. To date, more than two dozen manufacturers have introduced over 200 different DTV products, which are carried in thousands of retail outlets nationwide. Indeed, the diversity of DTV products currently available offers consumers an extraordinary degree of flexibility when *choosing*—and I stress the word *choosing*—how they will make the transition to DTV, both in terms of functionality and cost—

- The sports fan who wants the unparalleled experience of viewing the Super Bowl or the NCAA Final Four in HD can choose from among a number of fully integrated, wide-screen HDTV receivers of various screen sizes and designs.

- The parent or educator who desires access, using an existing analog receiver, to unique educational and children's DTV programming, can choose from a variety of digital set-top converter boxes.
- And finally, the consumer who believes DTV program offerings are not sufficient in number and/or quality to merit the purchase of an integrated DTV receiver at this time, but who, as an interim step, wants to enhance their enjoyment of abundant DVD content, may choose from among many different models of high resolution displays that can be upgraded later to receive DTV.

The ability of consumers—not the government, not broadcasters, but *consumers*—to choose for themselves how, when, and at what cost, they will make the transition to DTV is an essential ingredient to consumer acceptance of DTV and ultimately the success of the transition.

## 2. DTV Prices Are Falling Rapidly

Another essential ingredient to DTV's acceptance by consumers, as everyone knows, is the need to drive DTV product prices down as quickly as possible. I am pleased to report that on this front, manufacturers are succeeding—DTV prices are coming down, and they're coming down fast. Over the last two years alone, some DTV receiver and display prices have plummeted by nearly fifty percent. Consistent with the pace of DTV product sales, the decline in retail prices of DTV receivers is in line with the affordability curve for DVD players, and much more rapid than the similar curve for products like CD players, VCRs and large screen analog TVs. Prices for DTV set-top boxes also are falling, and CEA expects a strong upsurge in sales of these devices now that broadcasters and the FCC have finally reaffirmed their support of the 8VSB DTV transmission standard, a very important development in the DTV transition spurred, in part, by this Subcommittee's July 25, 2000 oversight hearing.

I am very proud to say that in terms of both DTV product variety and cost reduction, Thomson is a leader. Thomson's Year 2001 DTV product line includes:

- *The Lowest Price DTV Receiver/Converter Box.* The DTC100 set-top converter box, priced at \$549, is the lowest price and, with digital satellite capability, the most fully featured DTV receiver/converter currently available;
- *A Variety of HDTV Monitor Displays.* Thomson's direct-view and projection high-resolution HDTV monitors range in size from 27" and 61" screen sizes, and include the RCA 42", 3½-inch deep, wall-mountable plasma monitor;
- *Fully Integrated HDTV Sets.* Thomson offers direct-view and projection fully-integrated HDTV sets in three screen sizes, 38", 61" and 65"; and
- *The Innovative "Liquid Crystal On Silicon" HDTV.* Finally, one of the most exciting new innovations in HDTV display technology, RCA's Liquid Crystal on Silicon ("LCOS") HDTV. The LCOS, which represents a \$25 million investment by Thomson, will be available later this year and features a flat, 50-inch, wide-screen display; weighs only 100 pounds, and, with a depth of only 18-inches, makes having HDTV in the family room something even *my wife* would agree to.

And to give the Members of this Subcommittee an idea of how quickly manufacturers are working to improve affordability of digital television products, Thomson is pleased to announce today that—effective on the first of next month—consumers will be able to find the widescreen, fully integrated with over-the-air and satellite electronics, 38" RCA HDTV for \$2,999.

This marks a 21% reduction in consumer prices, since this product was first introduced last fall.

We are also bringing down the prices of widescreen, fully-integrated, RCA HDTV projection sets out of the stratosphere. The pricing on our 61" model will drop from a high of nearly \$8,000 two years ago to \$3,999 by April.

Consumers interested in HDTV Monitor products will find similar savings—with a 32" RCA HDTV monitor available for \$1,599.

This aggressive, affordable pricing is being driven by three factors: first, growing consumer demand for better displays; second, the natural competitive pressures of the consumer electronics industry; and third, the explosion of crisp digital video now available on disc and via satellite. More over-the-air programming from America's traditional TV programmers will only do more to fuel the transition.

All of this shows that consumer electronics manufacturers are investing in the innovation and cost reduction efforts necessary to ensure consumers have access to a broad array of increasingly affordable DTV products, and that prices for these products move downward as swiftly as possible to true mass-market levels. The very same marketplace forces operating in our intensely competitive consumer electronics industry that lowered prices so dramatically for VCRs, CD players and analog tele-

vision sets will benefit consumers in the DTV products area. We are, in the words of Chairman Tauzin, more than keeping our end of the DTV “deal.”

*3. The Availability of Digital-Ready Displays Will Likely Hasten, Not Delay, Consumers’ Transition to DTV.*

There is a matter that continues to drive, needlessly, we believe, a wedge between broadcasters and consumer electronics manufacturers and that this Committee will likely hear of today. Broadcasters have been critical of manufacturers’ flexible approach to DTV products, specifically with regard to the availability of high resolution displays that do not have built in DTV reception capability. They point to the entirety of DTV products that are available and lament that only a small percentage, less than 20 percent, can actually receive a digital television signal.

While it can be stipulated that broadcasters have this one number right, the conclusions they draw are wrong. They reveal not only a basic misunderstanding of what is needed to drive consumers to purchase DTV receivers, but also a failure to recognize what could be an opportunity to encourage more rapid consumer conversion to DTV receiver technology.

As I have already noted, in response to strong consumer demand, manufacturers are making available a wide array of DTV products, including many digital-ready displays. But the question should not be, “why are manufacturers making DTV-ready displays?” That’s easy: we are responding to consumer and retail customer demand. Rather, the question that should be asked by broadcasters is, “why is consumer demand for digital-ready displays disproportionately greater than it is for DTV receivers or far less expensive DTV converter boxes?”

The answer is simple: readily available content.

Consumers purchasing HDTV monitors know that when they bring their monitor home they can immediately begin to enjoy the display’s higher quality picture through abundant amounts of programming available on DVD. In fact, it does not take a great leap of logic to predict that consumers who are willing to purchase a high-end digital display just to enjoy the better picture quality afforded by DVDs, will be the same consumers who will seek to add a DTV tuner device to their display device to receive the best picture quality once greater amounts of HDTV are available. In short, we believe broadcasters should take some measure of comfort in knowing that consumers who otherwise may not buy any DTV device are at least taking the first step by purchasing an HDTV monitor that is capable of what will likely be a significantly more affordable upgrade to full DTV reception capability when broadcasters begin to provide digital programming in sufficient quality and quantity to drive consumer purchases of DTV set-top receivers.

THERE ARE SIGNIFICANT REMAINING ISSUES AFFECTING THE DTV TRANSITION THAT WARRANT THE ATTENTION AND ACTION OF CONGRESS AND THE FCC

While the consumer electronics industry is optimistic about the prospects for making digital television an increasingly affordable part of American consumer life, significant obstacles to a full and more rapid transition still exist and require Congress’s and the FCC’s immediate attention. The consumer electronics industry urges Congress to address these issues in a comprehensive manner that enables the work of all DTV stakeholders to move forward as quickly and as smoothly as possible.

A GREATER AMOUNT OF UNIQUE, HIGH QUALITY DTV PROGRAMMING, PARTICULARLY HDTV, IS URGENTLY NEEDED TO DRIVE CONSUMER DEMAND FOR DTV

The importance of abundant, unique, and high quality digital content to the success of the transition cannot be overstated. It is truly this simple: consumer demand for DTV receiver products will never reach mass market levels if there is not enough desirable digital programming to watch. Today, notwithstanding the efforts of a few, we are far from having enough desirable digital content to view.

That is not to say there is no good news on programming—there is. As demonstrated earlier, CBS is carrying substantial prime time and special events HDTV programming this year, including the Super Bowl and the NCAA Basketball Championships.<sup>1</sup> Public broadcasters also are taking full advantage of what DTV has to offer, including specialized HDTV programming and multiple streams of educational and civic SDTV programming. CBS and America’s public broadcasters clearly “get

<sup>1</sup> Consumer electronics manufacturers, including Thomson, Mitsubishi, and Panasonic have provided substantial financial support for CBS’s HDTV programming, including production costs and advertising.

it”: high quality DTV programming draws in viewers. And CBS’s experience is proof that HDTV-centric business plans can also be money making—not money losing.

There is also an increasing amount of HDTV programming offered by non-broadcast sources.<sup>2</sup> Satellite providers DIRECTV and the Dish Network each are providing HDTV programming to consumers nationwide; and, in one of the transition’s more ironic twists, cable networks are becoming an increasingly large provider of HDTV programming. In fact, the HBO, Showtime and MSG cable networks are offering more HDTV programming than all of the broadcast networks *combined*.<sup>3</sup>

The bad news, unfortunately, is that, in terms of unique and high quality DTV programming provided free, over-the-air, what you have seen today from CBS and the public broadcasters, with the exception of several local broadcast pioneers (including Capitol Broadcasting’s WRAL), is almost *all* you can expect to get.

Of course, as broadcasters are quick to point out, many broadcasters are transmitting a digital signal. However, very few are transmitting any meaningful amount of unique or high quality digital programming on that signal. Instead, much of the programming transmitted on the digital channel is merely an unconverted version of their analog offering, offering consumers a viewing experience no better than the original analog programming.

The shortage of free, over-the-air HDTV programming threatens to significantly dampen consumer interest and investment in DTV, slow DTV equipment penetration and delay the reclamation of broadcasters’ analog spectrum.

As Chairman Tauzin reminded broadcasters last July, while the law permits broadcasters to use their digital spectrum for data and other ancillary and supplementary services, *the availability of free, over-the-air HDTV programming is absolutely “part of the deal.”* It is time for broadcasters to follow the lead of CBS, public broadcasters, and their pay TV rivals and recommit themselves to offering Americans abundant amounts of HDTV and other unique, quality DTV programming services.

Finally, it is important to note the importance of cable carriage of DTV broadcast signals to the development of high quality DTV programming.<sup>4</sup> While CEA’s members, including Thomson, believe that the FCC’s recent ruling requiring cable operators retransmitting signals pursuant to “must carry” to carry broadcasters’ HDTV signals *in HDTV* (and not downconvert to lesser definition),<sup>5</sup> is consistent with the Congress’ view of the HDTV compact between broadcasters and the American public and will help push the DTV transition forward, we are very concerned about the negative impact on digital programming development of the Commission’s so-called “primary video” ruling. That is a step backward.

As Members of the Subcommittee are aware, the FCC, in its recent *Digital Must Carry First Report and Order*, adopted rules requiring cable operators to carry only one of a broadcaster’s multiple DTV programming streams, rather than requiring carriage of all DTV programming streams that are provided free, over-the-air.<sup>6</sup> We believe this decision, which was adopted by a divided and reluctant Commission, stands as a serious obstacle to the development and availability of abundant, unique DTV programming. Virtually all broadcasters committed to the digital transition contemplate some mix of HDTV and multicasting. The Commission’s decision undercuts the multicasting prong of the DTV programming equation. Particularly hard hit are public broadcasters, whose DTV plans, as the preceding demo clearly shows, rely very heavily on their ability to provide, over-the-air and via cable, multiple, unique DTV program offerings and who, by law, are precluded from entering into retransmission consent agreements with cable operators. We urge Congress either to make clear to the FCC that the Commission’s construction of the statute was flawed and multicasting can fall safely within a digital must carry regime or, if necessary, amend the law to require cable carriage of the multicast programming

<sup>2</sup>Prerecorded media has also become an important part of the DTV equation. Many consumers are using their DTV sets to enjoy the wide-screen, high-resolution playback DVDs provide. Similarly, many DTV consumers are exploiting the high-resolution performance of digital recorders such as those produced by TiVO. Within a few years, HDTV quality pre-recorded media will become available and further drive the demand for DTV products.

<sup>3</sup>Testimony of Michael S. Willner, President & CEO of Insight Communications (on behalf of the National Cable Television Association), before the Senate Committee on Commerce, Science and Transportation, hearing held March 1, 2001 on the transition to digital television.

<sup>4</sup>In this regard, and as discussed below, final agreement on a copy protection scheme for cable-delivered DTV programming is essential to promote wide availability of high quality digital content.

<sup>5</sup>In the Matter of Carriage of Digital Television Broadcast Signals, CS Docket No. 98-120, *First Report and Order and Further Notice of Proposed Rulemaking* (“Must Carry Order”) (rel. Jan. 23, 2001) at ¶ 73.

<sup>6</sup>Must Carry Order at ¶ 54.

streams contained in a digital broadcaster's signal to foster a rich array of programming choices needed to drive and satisfy consumer interest in DTV.

RAPID ADOPTION OF FINAL STANDARDS ENABLING CABLE-DTV COMPATIBILITY IS ESSENTIAL TO DRIVE DTV EQUIPMENT PENETRATION IN AMERICA'S 70 MILLION CABLE HOUSEHOLDS

If there is to be any chance of achieving meaningful penetration of DTV in the 70 percent of American households that subscribe to cable, cable consumers must first be assured that: (1) the DTV receiver they purchase will function properly when receiving DTV signals over cable; and (2) they will be able to exploit and enjoy all of the DTV services, including interactive services, that broadcasters provide on the digital channel. Unless both of these requirements are met, the DTV transition will not be successful. DTV receiver penetration in cable households will remain extremely low, and certainly not sufficient to satisfy the DTV receiver penetration requirements triggering broadcasters' return of their analog spectrum.

The consumer electronics industry, under the leadership of CEA and working with the National Cable Television Association ("NCTA") and other cable entities, has devoted substantial time and resources to resolving the outstanding technical and business issues needed to enable complete DTV-cable compatibility. Most recently, CEA and NCTA have been working to implement a set of agreements reached in February 2000. These agreements consisted of technical agreements on standards: (1) to allow for direct connection of digital television receivers to cable systems, which would eliminate the need for the consumer to use a set-top box; and (2) addressing cable carriage of so-called PSIP (Program System and Information Protocol) data, which is critical to the tuning and identification of DTV programming by a DTV receiver. In addition, building on the negotiations between the consumer electronics and cable industries, the FCC has adopted rules for the labeling of "cable-ready" DTV receivers that will allow *consumers* to choose from among three different levels of "cable-ready" DTVs, depending on the level of functionality they wish to have.

Unfortunately, while these baseline agreements have been reached, the consumer electronics and cable industries have, so far, failed to agree on final "build-to" standards. This failure to adopt "build to" specifications is critical because their final specifications are indispensable for manufacturers to design and build DTV receivers that are simply "plug and play" with cable, i.e., do not need a cable set top box just as roughly fifty percent of cable subscribers today who have "cable ready" television sets and receive cable programming without a set-top box. Similarly, there has been insufficient progress on so-called "middleware," an essential component for advanced interactive services which will require a cable set-top box. Genuine agreements between the parties, not unilateral press releases, are needed to move these cable compatible DTV receivers off the drawing boards and into cable consumers' homes. Nor has final agreement been reached on cable delivery of PSIP data according to established standards.<sup>7</sup> Final agreement on each of these items, in addition to copy protection, which I will address momentarily, is essential.

CEA believes that the primary reasons for the lack of progress in reaching final agreement on these DTV/cable compatibility standards are business related rather than technical. While the FCC has applied increasing pressure for rapid completion of these industry-led efforts, more needs to be done by either the Commission or Congress to spur final inter-industry accords. If a final round of determined jawboning and more intensive oversight by the FCC and the Congress, especially this Subcommittee, does not produce the required breakthroughs, then mandatory standard setting processes may need to be implemented. One thing is certain, however, there is no DTV transition if cable subscribers are left in the dark.

DTV COPY PROTECTION CAN AND MUST BE CRAFTED TO BALANCE THE EXISTING RIGHTS OF BOTH CONTENT OWNERS AND CONSUMERS

A major obstacle to greater availability of quality DTV content is the need for final resolution on adequate and reasonable standards for DTV copy protection. CEA and its member companies are committed to working with other parties to ensure that copyrighted content, when transmitted in digital formats, is adequately protected against commercial piracy in a manner that preserves the fair use rights of American viewers. In addition, the potential for Internet retransmission of broad-

<sup>7</sup>Broadcasters transmit PSIP data according to an established standard (ATSC A/65). Cable carriage of PSIP data according to this standard is necessary to ensure proper operation of the DTV receiver, specifically for the purpose of proper tuning of DTV and NTSC signals, and proper delivery electronic program guide data.

cast programming raises legitimate concerns that the consumer electronics industry is willing to work with broadcasters and the content community to address.

The idea that the introduction of DTV technology renders mutually exclusive the rights of content owners to protect their works from unlawful copying and redistribution, and the right of consumers to make recordings of digital content for personal, non-commercial use is clearly wrong. Both of these fundamental and hard-fought rights are as defensible and desirable in the DTV domain as they are in the analog environment. It is therefore not a question of whether to protect either right, but how to protect both.

As a matter of public policy, consumers would balk if the transition to DTV turns out to be *regressive* in terms of their ability to time shift, build a home library of recorded video, and enjoy the full functionality of the consumer electronics products they purchase, compared to what they currently experience. In this regard, the cable industry's proposed PHILA license setting forth terms and conditions for the operation of consumer electronic devices that can be connected to cable systems raises serious concerns.<sup>8</sup> It should be published by the FCC immediately for public comment to enable those concerns to be aired.

CEA and its member companies believe the following principles should guide a renewed, cooperative effort among the affected industries to develop technology and licensing terms required for a robust, yet consumer friendly, copy protection regime for digital television:

- Consumers should be free to copy and store for their own use, free, over-the-air DTV broadcasts.
- Consumers should be able to enjoy the same reasonable and customary home recording practices for content received via all digital delivery systems (i.e., DTV, digital cable and digital satellite) as they do with analog technologies, to continue building home video libraries.
- Encryption of DTV or HDTV programming should not prevent viewing on DTV receivers, or storage and viewing on such devices as personal video recorders, by any consumer who has paid for the right to do so.

CEA and Thomson commend the Members of this Subcommittee, particularly Chairman Tauzin and Representative Boucher, who have recently spoken out on the need to balance the rights of content owners and the need to protect consumers' fair use rights as the digital revolution moves forward.

In essence, the affected industries must reach agreement on both copy protection technology and a fair set of recording rules. Compromise is needed, and over-reaching must be avoided. But consumers' interests cannot be sacrificed. If consumers discover that their PVRs or digital video recorders are not working or are erasing after 45 minutes because of unilateral measures taken by content owners, then consumers will revolt and the DTV transition will be set back immeasurably. Congress and the FCC should not let that happen.

#### CONSUMERS MUST HAVE ACCESS TO COMPETITIVE EPG SERVICES

Although electronic program guides ("EPGs") are rapidly assuming increased importance in the world of analog television, they will become virtually indispensable to consumers in the digital environment. They will play a role functionally equivalent to an analog receiver's channel dial or remote control and, as such, will be a critical tool to navigating through a 100+ channel universe simply, accurately and with a minimum of confusion imposed upon the consumer. It is critical that no gatekeeper be allowed to limit the extent to which consumers can choose among competitive EPG services, and have access to the tools which best facilitate their introduction to and use of DTV services.

Cable operators have an economic incentive to discriminate against competitive EPGs in favor of those EPG services which they own or in which they hold a financial interest. This threat is not merely theoretical. Even in the analog environment,

<sup>8</sup>In particular, we note several disturbing trends that threaten to erode the normal and customary home recording rights that Americans have enjoyed for over 20 years. For example, at the behest of content providers, some broadcast networks have recently proposed encrypting their DTV broadcast transmissions in a way that could prevent any home recording of free, over-the-air programming.

Similarly, at Hollywood's urging, the cable industry, has proposed licensing terms for OpenCable-compliant products (including digital set-top boxes, PVRs, VCRs and cable-ready DTV receivers) that would give content owners and cable operators unprecedented authority over consumers' electronics products that threatens consumers' recording rights and raises the prospect of third-party control of electronics devices in the digital domain—not something that will make consumers run to their local retailer to purchase a DTV.

some cable operators stripped EPG data transmitted by broadcasters in the vertical blanking interval so as to force consumers to use the cable operator's EPG service.<sup>9</sup>

Importantly, the availability of EPG data transmitted with the DTV broadcast signal does not dictate consumer use of or subscription to any particular program guide, but rather enables the consumer to choose among a competitive array of such services, including program guides offered by the cable operator.

Thomson and CEA believe the FCC has authority to require cable carriage of EPG data, but, in its *DTV Must Carry Report and Order*, chose not to exercise this authority. We urge Congress to review the FCC's narrow interpretation in this matter, with an eye toward ensuring that no gatekeeper denies consumers the ability to access a competitive array of EPGs.

CONGRESS SHOULD REJECT GOVERNMENT MANDATES THAT WOULD INCREASE  
CONSUMER COSTS AND DAMPEN DTV INNOVATION

*1. An Attempt At Economic Engineering With A Digital Tuner Requirement Will Slow The Process Down.*

The FCC has a pending rulemaking proceeding seeking comment on a proposal to require that digital tuners and reception capability be added to every television set offered for sale in America above a certain size. Our experience in the marketplace and our knowledge of the associated costs convince us that such a mandate would be counterproductive. Rather than accelerating the DTV transition, it would likely trigger an angry consumer backlash which could bring the DTV transition to a screeching halt.

Approximately forty percent of TV sets sold in the U.S. today are 20" or less. Their retail prices are in the range of \$89 to \$220. Adding DTV reception capability to these sets, commencing in 2003 as some have urged, would double or triple their retail price. Does anybody on this Subcommittee think consumers will embrace such a new price structure? I suggest not. It is no wonder that the Consumer Federation of America and seniors groups have roundly condemned this proposal as a regressive DTV tax. It would hurt the vast majority of consumers and slow the transition by removing from the marketplace today's lower cost TV sets that otherwise are perfectly good candidates for digital signal reception through set-top converter boxes.

Let's be clear that adding DTV reception capability to analog NTSC television receivers is not a trivial task. It is NOT adding just one chip, or even two or three chips. It requires adding a substantial amount of circuitry, several expensive chips, memory, filters, and interface devices—not to mention software and switching changes. All of these components add up in cost. Moreover, digital television technology is still in its infancy. Unlike analog television receiver technology with the benefit of more than 50 years of cost reduction, DTV sets only have been on the market for 2 or 3 years. Even with an aggressive cost reduction curve, the electronics package required to receive, decode and display digital television will still command a \$200 per unit cost premium over required analog circuitry for the foreseeable future. This does NOT include amortization of any design and development costs, which could be in the tens of millions of dollars for each manufacturer. Suggestions like that made by one witness at the March 1, 2001, Senate Commerce Committee hearing that adding DTV reception capability could be done for \$1 per receiver are completely and utterly baseless and deserve the much needed oversight processes initiated by the Commerce Committees of the Congress.

There is nobody more interested in selling millions of digital television receivers than Thomson and other consumer electronics manufacturers. But we cannot, and we will not cram them down consumers' throats. We believe fervently that consumers will be willing to pay a price premium for DTV receivers and other DTV products once there is exciting and abundant original and innovative digital programming, including HDTV, available for viewing and once consumers can be certain that they can receive such programming over cable. Then, nobody will have to force consumers to buy DTV receivers; they will rush to buy them just as they did when DBS entered the market. These increased volumes will drive costs down even further. That is the history of this industry.

Not only would a DTV tuner mandate likely harm the DTV transition, but it is a striking example of an inappropriate role for government to play in the marketplace. Unlike closed captioning or the V-chip which government required to promote

<sup>9</sup>The FCC currently is considering a request by Gemstar (a major provider of electronic program guides and a company in which Thomson holds a financial interest) to prohibit Time Warner from stripping its EPG data from analog broadcast signals. See *Petition for Special Relief Seeking Commission Order to Discontinue Stripping Information from Broadcast VBI*, Public Notice DA 00-670 (rel. March 24, 2000).



certain social goals and the costs of which were modest and absorbed by the consumer electronics and broadcast industries, a DTV tuner mandate would serve no extrinsic social goal and would be very expensive for consumers. If, indeed, there is a marketplace failure warranting government intervention, consumers should not be the ones to pay for it. Would broadcasters' enthusiasm for a DTV tuner mandate be somewhat diminished if Congress also required broadcasters to pay for the increased receiver costs resulting from such a requirement, as Mark Cooper of the Consumer Federation of America suggested in his recent testimony before the Senate Commerce Committee? I suspect the proposal would disappear from the broadcasters' DTV "to do" list.

*2. Government-Imposed Receiver Standards Serve No Useful Purpose in an Already-Competitive DTV Marketplace, and Would Stifle Innovation.*

Finally, CEA and its members, including Thomson, strongly oppose broadcasters' continued calls for government-imposed performance standards for digital television receivers. The FCC has repeatedly rejected this notion, most recently in January of this year in its Biennial Review of the DTV transition. The FCC noted that "DTV receiver manufacturers, driven by market forces, are continuing to make significant improvements in their products, particularly in the area of indoor reception and multipath signal handling capabilities."<sup>10</sup> The FCC correctly concluded that government mandated performance standards would impede innovation and lead to lowest common denominator solutions. It is a bad idea, and it should be rejected.

CONCLUSION

In closing, I would like to again thank the Members of this Subcommittee for their longstanding commitment to making digital television a reality for Americans. America's consumer electronics manufacturers are delivering to American consumers products that allow them to exploit and enjoy all of DTV's capabilities, and at increasingly affordable prices. We urge Congress to continue to play a constructive role in eliminating what last obstacles remain to achieving a rapid and smooth transition and welcome the opportunity to take part in any efforts that will further those goals. And, we recognize our responsibility as one of the key industry stakeholders to complete successfully the long journey to the digital television era.

We ask all industry participants to take stock realistically of where we are today, reach a consensus on the significant obstacles that are impeding the DTV transition and then work to create market-based solutions supplemented, if absolutely necessary, by government regulation where there is market failure. The industry segments need to be honest with each other and not overreach. Above all we have to rededicate ourselves to the principle that consumers must be the beneficiaries of the DTV revolution and cannot become pawns in a high stakes game for competitive advantage along the way.

Mr. UPTON. Thank you.  
Mr. Willner?

**STATEMENT OF MICHAEL WILLNER**

Mr. WILLNER. Thank you, Mr. Chairman and members of the committee.

Good afternoon. I am Michael Willner, President and Chief Executive Officer of Insight Communications. We serve approximately 1.5 million subscribers. And I am also the Vice Chairman of the National Cable Television Association.

Thank you for giving me the opportunity also to tell a very exciting story about how digital television really is working right now in the marketplace, working not because of significant amounts of digital broadcast programming but because the cable industry has voluntarily created innovative advanced digital services.

Cable, in fact, has moved with supersonic speed into the digital world, not because anybody told us so but because our customers wanted us to. In fact, today 10 million households are enjoying dig-

<sup>10</sup> *Report and Order and Further Notice of Proposed Rulemaking* in MM Docket 00-39, adopted Jan. 18, 2001 ("DTV Biennial Review Order") at ¶96.

ital cable. Indeed, as the owner of the cable system in Greenfield, Indiana, I would venture to say maybe your mother was right.

Let me also say that the key to cable's innovation has always been twofold: consumer demand for new and diverse services and the freedom from excessive regulation, a combination absolutely critical in allowing us to raise the absolute billions of dollars needed to invest in all of these new technologies. Our customers have been the ultimate winners because they now have more choices.

In fact, in the last 2 weeks, my company along with Time Warner and Comcast reached an agreement with the local CBS affiliate in Indianapolis to carry their digital signal in order to deliver multiple feeds of the NCAA basketball games at no extra charge to our subscribers. The broadcaster came to us, and we said, "Great idea. Let us do it." The cable industry's digital transition is happening with our own capital and without any grants or subsidies from the government. Since the passage of the 1996 Act, the cable industry has invested \$42 billion to upgrade its infrastructure. Contrast this, if you will, with the less than \$1 billion that the entire broadcast industry has spent to date on its digital transition, that after receiving \$70 billion worth of valuable public spectrum, whether it becomes a grant or a loan.

Insight has been an industry leader in the development of new and advanced services. By virtue of our investment, we have added scores of new video channels, developed interactive community programming, created a robust video-on-demand service with full VCR functionality, delivered lightning fast Internet access, and launched our first facilities-based telephone service, finally, finally offering to customers a choice in local phone carriers. To do all of these things, our company alone has invested almost \$500 million since the passage of your act.

Broadcasters now argue that the government should give them large blocks of cable's newly expanded channel capacity for carriage of what is essentially redundant versions of their analog channels. Double must carry would be at the expense of new and diverse broadband services that customers want today. Channel capacity is limited even in newly rebuilt cable systems.

Broadcasters could create the high-definition television programs, which is what they promised Congress when they sought the digital spectrum. But with the exception of CBS, broadcasters largely have abandoned that promise.

On the other hand, the cable industry is actually doing something about the digital transition. We have upgraded three-quarters of our plant and are rapidly completing the rest. HBO alone is offering three times as much high-definition programming as all of the broadcast networks combined.

The NCTA has negotiated a technical standards agreement with the CEA. Programmers are developing a multitude of new digital cable channels. And to facilitate the broadcasters' digital transition, our industry has agreed to carry the digital equivalent of today's analog broadcast stations whenever the broadcasters return their analog spectrum.

In other words, if Mr. Paxson wants to vacate his analog frequencies early and in the process reap billions of dollars from the

wireless industry, we still will convert his primary digital signal to analog and carry it to all of our subscribers.

There should be no doubt about this. Cable wants to and will continue to provide consumers complete access to the broadcast channels they enjoy today, but our customers don't want redundant versions of broadcast channels at the expense of new and innovative services, services such as the National Geographic Channel, Oxygen, and the Biography Channel. If broadcasters were to create significant amounts of HDTV programming, consumers would be incented to buy HDTV receivers, and we will want to carry it.

Must carry originally was about preserving over-the-air television. Broadcasters now seek double must carry for still-undefined services. This is a very different proposition. And, not surprisingly, a bipartisan majority of the FCC has preliminarily concluded that a double dose of must carry would be unconstitutional.

Mr. Chairman, there are many differing commercial interests here, but, most importantly, there is the public interest. The fact is that cable revenues come directly from our consumers. That means cable operators must satisfy our customers' desires or we risk losing them to our competitors. We respectfully submit that the public interest is best served by allowing cable the freedom to provide consumers the new digital services they want today and in the future. Thank you.

[The prepared statement of Michael Willner follows:]

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

A. INTRODUCTION

Mr. Chairman, members of the subcommittee, my name is Michael Willner. I am President and CEO of Insight Communications, a cable company with 1.4 million customers in Illinois, Indiana, Kentucky, Ohio, and Georgia. I also serve as Vice-Chairman of the National Cable Television 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.

B. THE TRANSITION TO DIGITAL TELEVISION (DTV)

The transition to digital television is moving forward, and the cable industry is at the leading edge, as I describe below. But there is a problem: by the broadcasters' own admission, they are not likely to meet the 2006 deadline for returning the analog TV spectrum. By itself, this is not of great concern to cable companies like mine, since we are providing advanced digital services and meeting the needs of our customers. However, the broadcasters have made it my problem by blaming everyone but themselves—cable companies, the FCC, TV manufacturers—for the slow pace of their move from analog to digital. After receiving two grants of valuable public spectrum for free, broadcasters are now asking the government to redefine the must carry laws of 1992 to further regulate the cable industry: they are asking Congress and the FCC to double the must carry requirements to include both analog and digital signals, and to require the carriage of multiple digital signals, not just their primary video feed. Cable operators and programmers strongly oppose duplicative must carry requirements.

C. THE FCC'S RULINGS ON DIGITAL MUST CARRY, JANUARY 2001

Broadcasters have been claiming for several years that the 1992 Cable Act mandates the simultaneous carriage of both a television station's analog signal and its digital signal (dual must carry).<sup>1</sup> On January 18, 2001, the FCC tentatively con-

<sup>1</sup> See for example page 8 of *Written Testimony of Ben Tucker, Executive Vice President, Fisher Broadcasting* [for the National Association of Broadcasters] before the United States Senate Commerce Committee on *The Transition to Digital Television*, March 1, 2001.

cluded that such a dual carriage requirement would be unconstitutional since it “appears to burden cable operators’ First Amendment interests substantially more than is necessary to further the government’s substantial interests of preserving the benefits of free over-the-air local broadcast television; promoting the widespread dissemination of information from a multiplicity of sources; and promoting fair competition in the market for television programming.”<sup>2</sup> The FCC has asked for additional comments on its interim conclusion and will make a final decision in the months ahead.

On January 18, 2001, the Commission also ruled that once a TV broadcaster returns its analog channel and transmits only in digital format, the 1992 must carry law gives that digital station carriage rights for only its “primary video.” According to the FCC, “primary video” means a single programming stream, along with any program-related material. Cable operators are “not required to carry duplicative signals or video that is not considered to be primary.”<sup>3</sup>

Some broadcasters like Paxson Communications want to use their HDTV spectrum to multicast several standard definition digital TV signals—and to require cable carriage of all those digital broadcasts. Indeed, Jeff Sagansky of Paxson Communications testified before the Senate Commerce Committee<sup>4</sup> on March 1 that HDTV was not the highest or best use of the digital spectrum—multicasting was.<sup>5</sup>

#### D. THE PROBLEMS WITH DIGITAL MUST CARRY

“Digital must carry” includes two related proposals: “dual must carry” (the notion argued by NAB that cable should carry *both* a station’s analog as well as its digital signal during the transition to DTV), and “multi-channel” or “multiple must carry” (the effort led by Paxson to require cable carriage of *all* a broadcaster’s digital signals once it has made the transition to DTV and returned its analog spectrum). Both proposals overreach: they seek a new federal entitlement program to confiscate an additional 6MHz of cable’s scarce channel capacity for programming services that do not yet exist—or may never exist. Cable’s spectrum could be put to better use depending on the quality of a broadcaster’s digital programming, the availability of alternative digital services, and the needs of consumers.

All cable systems have finite capacity—whether they are old 350-450 MHz systems or new 550-860 MHz interactive facilities. As such, federal mandates to reserve channel capacity for broadcasters necessitate trade-offs that negatively impact consumers: the more broadcast channels cable operators are required to carry, the fewer cable networks or alternative digital services they can offer. In addition to traditional analog video services, cable operators are deploying digital video services, which have already attracted 10 million customers. Cable companies are also offering high-speed access to the Internet, with 4 million customers to date. And cable companies have begun offering telephone service in competition to local exchange companies—just as Congress intended when it passed the Telecommunications Act of 1996 (cable currently has 1 million residential phone customers). These services—and new ones still in development—all take bandwidth. Any space allocated to broadcasters for duplicative digital signals means less bandwidth for other services that consumers might prefer. The mere availability of cable capacity is not an adequate rationale for government to favor one set of speakers—the broadcasters—over another “cable operators and programmers—by expropriating more channel capacity for the same broadcasters who are already carried on cable.

Most commentators agree that what will drive the purchase of HDTV sets and the transition to digital is the availability of compelling, high-quality digital programming. By demanding digital must carry, the broadcasters are in essence asking Congress to take the risk out of their business and remove their burden of developing innovative digital programming that cable operators would want to offer to their customers through voluntary carriage agreements. Broadcast stations are ask-

<sup>2</sup>First Report and Order and Further Notice of Proposed Rulemaking, CS Docket No. 98-120; CS Docket No. 00-96; and CS Docket No. 00-2; FCC 01-22, paragraph 3.

<sup>3</sup>Ibid. paragraph 6.

<sup>4</sup>*Before the Senate Commerce, Science and Transportation Committee: Testimony of Jeff Sagansky, President & CEO, Paxson Communications Corporation, Thursday, March 1, 2001, page 3.*

<sup>5</sup>Paxson’s latest business plan depends not on market forces but on government mandates, i.e., forced carriage of all its signals—regardless of their desirability to consumers—by both cable and DBS. Paxson and the other broadcasters are asking for mandatory carriage of multiplexed standard definition broadcast signals before they have figured out what to put on those channels. Indeed, Paxson and other broadcasters are asking the government to take the risk out of their business while saddling other industries with new costs and lost opportunities such as diminished channel capacity, decreased consumer choice, and lessened opportunity for other programmers to be carried on cable and satellite systems.

ing the government to ensure their success by warehousing 6MHz of digital spectrum on cable systems for their future use.

By demanding 12MHz of cable's spectrum for both their analog and digital signals, broadcasters will:

- Reduce consumer choice by:
    - Decreasing space for new channels of both analog and digital video; and
    - Limiting space for existing digital services like high speed Internet access and reducing space for new services like interactive TV, switched telephony, and IP telephony.
  - Harm cable programmers by limiting their ability to get onto cable and satellite systems.
    - There are currently 224 national programming networks, all of which would like to be carried on any given cable system in addition to local broadcasters.
- Aside from their practical problems, the policy problems with the broadcasters' demands for digital must carry include:
- Broadcasters are offering little high definition programming—just a standard digital version of their analog programming. Dual must carry of an analog channel and its standard definition digital counterpart would give the public nothing new but would consume valuable cable capacity. This would reduce the diversity of programming on cable systems and limit the number of new voices getting onto cable systems in favor of redundant broadcast voices.
  - On average, only 200 MHz of an upgraded 750 MHz cable system is digital—200 MHz for all the new digital services: new cable programming services, cable modem service, video-on-demand, cable telephony, and services yet to be created. These new services are precisely the kind of facilities-based competition Congress intended when it passed the 1996 Telecommunications Act.
  - There is no public policy reason why two signals of every broadcast station—and all broadcasters as a whole—should get preferential carriage over each and every cable network. There certainly is a Constitutional problem under the First Amendment with a requirement that favors one category of speakers over another.
  - A double dose of must carry will bring consumers more of the same, and less of anything new. Consumers will be unhappy when their cable operator is forced to drop cable networks in order to carry duplicate broadcast channels, or if their operator is unable to provide new services and access to new cable networks. Every cable channel that is used to carry these duplicate broadcast services is one that cannot be used for other purposes like offering high speed access to the Internet, interactive television, or video-on-demand.

#### E. CABLE IS LEADING THE TRANSITION TO DIGITAL TELEVISION

Insight Communications has been an industry leader in the development of new advanced services. By virtue of our investment (more than \$500 million since passage of the 1996 Telecommunications Act), my company has:

- added scores of new channels;
- developed interactive community news and information platforms;
- created video-on-demand services which electronically deliver up to 500 movie titles viewable whenever our customers want, with full VCR functionality;
- made plans to open an electronic mall with 50 retail outlets;
- delivered lightening-fast Internet access; and
- launched our first facilities-based telephone service, thus offering consumers a choice of local phone carriers.

Not surprisingly, in less than a year's time, over 20 percent of Insight's customers have signed up for digital packages. And cable subscribers nationwide are offering similar services.

The cable industry has been a leader in the transition to digital and has taken on this role without government mandates or subsidies. Cable has moved into the digital world with great speed not because anyone told us to but because our customers want us to. Cable operators and programmers are working in a number of areas to ensure cable customers have access to new and unique digital services, such as:

- Cable plant upgrades that allow operators to offer new digital services;
- Creation of unique digital and high definition cable programming;
- Negotiation of retransmission consent agreements to make digital broadcast programming available to cable customers—including PBS; and
- Agreement between the cable industry and the consumer electronics industry to ensure digital TV sets work with cable systems.

Each of these areas is discussed in more detail below.

### 1. Cable Industry Upgrades

Cable operators have invested more than \$42 billion since 1996 to upgrade their facilities in order to offer consumers new services, including digital cable. Digital video service provides increased channel capacity through compression of multiple digital video signals in the same 6 MHz slot previously occupied by a single analog channel. As a result, cable customers are able to receive dozens of new programming services.

Consumers are responding by signing up for digital tiers in record numbers. To date, cable systems have attracted about 10 million digital customers. A survey released in March 2000 by the Cable and Telecommunications Association for Marketing (CTAM) showed impressive positive customer response to their upgraded, digital cable offerings. Of nearly 2,600 consumers polled, 95 percent expressed satisfaction with their service.<sup>6</sup>

### 2. Cable's New Digital and High Definition Programming

Program networks have already launched some 60 new digital channels offering consumers additional choice and further program diversity. Examples include the *Biography Channel* and *History Channel International* (from A&E); *Science, Civilization*, and *Kids* (from Discovery); *Noggin*, *Nick Too*, and *Nickelodeon Games & Sports* (from Nickelodeon); and *style* (from E!). There are six new Hispanic channels from Liberty Cañales, new music channels from MTV and BET, and separate channels targeting Indian, Italian, Arabic, Filipino, French, South Asian and Chinese viewers from *The International Channel*. There are also many new premium offerings from HBO (*HBO Family*, *ActionMAX*, and *ThrillerMAX*), Showtime (*Showtime Extreme*, *Showtime Beyond*) and Starz! Encore (*Starz! Family*, *Cinema*, *Movies for the Soul*, *Adventure Zone*).

Cable programmers are also leading the way in the development of HDTV programming. For example, HBO is offering more HDTV programming in any given week than all of the broadcast networks combined. Showtime, Madison Square Garden, A&E, and Discovery are also producing high definition programming. This is just the kind of high quality programming that will facilitate the transition to digital by enticing people to buy DTV sets.

### 3. Negotiation of Voluntary Retransmission Consent Agreements with Broadcasters for Carriage of their Digital Signals—Including PBS

The facts belie the broadcasters' claim that further government mandates are necessary. The marketplace is working to resolve digital carriage issues. The cable industry will carry the broadcasters' primary digital signals at the end of the transition, and will continue to carry their analog signals during the transition. No broadcaster will lose its voice, nor will any consumer lose access to his or her favorite broadcast channels.

In addition, major multiple system operators (MSOs) have entered into retransmission consent agreements with some broadcast station owners to carry digital broadcast programming during the transition. For example, AOL Time Warner has entered into comprehensive agreements for carriage of the digital signals of the four major broadcast networks, several station group owners, and a large group of public broadcasters. AT&T has digital carriage agreements with Fox and NBC, and continues discussions with other broadcasters. Other negotiations are underway between broadcast and cable companies and are likely to yield additional agreements for the carriage of broadcast stations' digital signals on cable systems.

Like all aspects of the digital transition, these discussions take time.<sup>7</sup> But, the marketplace is working to resolve the digital carriage issue. A government-imposed digital must carry rule will in no way provide consumers with an incentive to buy new digital television sets. Instead of arguing for such a requirement, broadcasters can provide this incentive by developing distinct and compelling programming that consumers want to watch. The retransmission consent agreements that have been reached and the ongoing discussions between cable and broadcast companies validate the observation that—as cable companies add channel capacity, and as broadcasters develop specific digital programming that consumers want—cable companies will carry such programming.<sup>8</sup>

<sup>6</sup>CTAM's 1999 Digital Cable TV Customer Satisfaction Study.

<sup>7</sup>Retransmission consent discussions have in some cases been hampered by the fact that many broadcasters do not have in place definite business plans for their digital spectrum.

<sup>8</sup>See e.g., "Time Warner Adds HDTV in Houston," *Multichannel News*, November 27, 2000, p. 22; "High-Definition TV: So Close, and Yet So Far," *Newsday*, January 10, 2001, p. C5.

#### 4. *Cable Has Reached Agreement with the Consumer Electronics Industry on Compatibility and Interoperability Issues*

Another area where progress has been made to ensure a smooth transition to digital is the compatibility between cable systems, set-top boxes, and digital television (DTV) sets. The cable industry has addressed the issue of compatibility, and solutions are available. Cable systems deliver high definition digital signals to DTV sets by using so-called “component analog” connectors between a cable set-top box and a DTV set. In some cases, content providers may require copy protection before they will make high quality digital programming available to cable.

There are two approaches by which DTV sets can be connected to cable with adequate copy protection and security. First, an HDTV-capable set-top box can be connected to a DTV using a digital interface or connection, such as a “1394/5C”<sup>9</sup> or functionally equivalent digital link. This digital link will include copy protection technology to ensure that the digital signals cannot be pirated as they cross between the set-top box and the DTV set. Second, the functionality of the set-top box can be incorporated within the digital television itself. Using this approach, the DTV set connects directly to the cable system without the need of a set-top box. Since there is no set-top box and, therefore, no extended connection to the DTV set, there is no opportunity for the digital signal to be stolen and copied.

Both of these approaches required inter-industry technical discussions and consensus. The cable and consumer electronics industries worked diligently to resolve these outstanding technical issues. In December 1998, the cable industry and the Consumer Electronics Association (CEA) agreed to the necessary changes in the IEEE 1394 specification to promote compatibility between digital television receivers and digital set-top boxes.<sup>10</sup>

Beginning in July 1999, the cable and consumer electronics industries conducted a series of joint meetings to address additional compatibility issues between cable systems and consumer electronics equipment. As a result of these meetings, three significant agreements were reached.

On February 23, 2000, CEA and NCTA announced two voluntary agreements to allow future consumer digital television sets and digital cable systems to work together. The agreements detail the technical specifications that will enable consumers to receive DTV programming and services over cable systems.<sup>11</sup>

The first agreement details the technical specifications that will allow DTV receivers to connect to cable television systems. This agreement assures a cable customer who buys a DTV set that the set can be connected directly to his or her cable outlet. The second agreement spells out how systems will transmit Program and System Information Protocol (“PSIP”) data—the raw material provided by broadcasters and cable programmers that is used to make up electronic program guides created in a TV set.

These two technical agreements allow manufacturers to proceed with the production of digital TV receivers built to the agreed-upon technical specifications.<sup>12</sup>

On May 24, 2000, NCTA and CEA announced a third agreement to aid consumers in their purchase of new digital television equipment. This agreement established the labeling to be used to inform consumers about various digital television sets’ capabilities to receive digital and interactive digital TV services. However, on September 15, 2000, the FCC, acting on a number of issues regarding cable and the digital television transition, instead required a different set of labels—using the

<sup>9</sup>Several companies have developed the “5C” Digital Transmission Content Protection (DTCP) technology. Use of DTCP has been subject to ongoing discussion and the negotiation of terms and conditions between equipment manufacturers and content providers. The cable industry supports the proposed 5C technology as an effective way to provide copy protection.

<sup>10</sup>Through the efforts of CableLabs and its OpenCable project, the cable industry developed specifications for cable set-top boxes that could be sold at retail stores. The security features of these boxes would be included in a separate security module—a “Point-of-Deployment” or “POD” module—to be obtained from the cable operator. On December 15, 2000, CableLabs submitted a final “PHI” (POD-HOST Interface) license agreement to the FCC. The technology provided by this license is used to ensure security and to facilitate copy protection of high quality digital content as it passes across the interface between the POD module and the cable set-top box. This license will allow equipment manufacturers to begin producing digital set top boxes to be sold at retail.

<sup>11</sup>See Letter from Robert Sachs, President and CEO, NCTA, and Gary Shapiro, President and CEO, CEA, to Chairman Bill Kennard, FCC, filed February 22, 2000.

<sup>12</sup>DTV sets built to these specifications are likely to be available in retail stores within 14 to 18 months.

term “cable ready”<sup>13</sup>—for digital television sets to indicate their capability to operate with cable television systems.

F. CABLE COMPANIES—NOT BROADCASTERS—ARE PROVIDING PUBLIC SERVICE PROGRAMMING AS BROADCAST NETWORKS AND THEIR AFFILIATES ABANDON POLITICAL COVERAGE AND CHILDREN’S TELEVISION.

The evidence shows that it is cable, not broadcast television, that is playing an increasingly prominent role in providing public interest programming—particularly news and public affairs—and in serving the needs and interests of children. For example:

- Local and regional cable news channels like *News 12 Connecticut* and *News 8 Austin* are providing their communities with up-to-the-minute news and information 24 hours a day. As reported in *Electronic Media*, “[local cable news channels] are making inroads against the larger and more entrenched news operations of local television stations.”<sup>14</sup>
- Once again last year, cable news and public affairs networks were the place to turn for in-depth coverage of local and national elections. According to *The Wall Street Journal* (9/20/00), “Cable television is emerging as the new king of TV-campaign coverage... as the three major broadcast networks have scaled back news on the presidential race.” CNN, CNBC, MSNBC, FOX News, and C-SPAN are the places more and more Americans now turn for campaign news.
- The evidence is undeniable that broadcasters are retreating from serving the local and public interest. As former *New York Times* Executive Editor Max Frankel reported in *The Columbia Journalism Review*, commercial broadcast network coverage of each national political convention was only about 12 hours in 2000 compared with nearly 30 hours in 1996 and almost 50 hours in 1976. And during the 2000 election cycle, only two out of the four commercial broadcast networks televised the first Presidential Debate.

In addition to filling the political news hole left by the broadcast networks, cable also provides more than three times as much children’s programming as all other programming sources combined. Nickelodeon, Disney, Noggin, and Discovery Networks are but a few of the places that consumers today turn for quality children’s programming.

While the broadcasters continue to enjoy free use of the public spectrum, it is the cable industry—without government protection or favors—that is fulfilling the public interest obligations which broadcasters have abdicated.

G. CONCLUSION

Cable opposes the broadcasters’ call for digital must carry because it represents an unwarranted intrusion in the market that would deprive consumers of broadband services they want. After promising to deploy HDTV in return for a second 6MHz of free spectrum (which the government could have auctioned to wireless companies for billions of dollars, benefiting both competition and the federal treasury), broadcasters have abandoned, for the most part, their promise to deploy HDTV. While they wonder what to do with their second 6MHz of public spectrum, they are asking the government to guarantee the success of their still-to-be-determined businesses by expropriating a large swath of newly created bandwidth that cable operators have just spent billions of dollars to upgrade.

The broadcast industry’s demands fly in the face of the Constitution (especially the First Amendment guaranteeing free speech for cable programmers and cable operators, and the Fifth Amendment prohibiting takings) and stand in stark contrast to the broadcasters’ calls for Congress to further deregulate their own industry. How do broadcasters reconcile their demand for expanded must carry requirements and passage of a Digital All-Channel Receiver Act with their advocacy of no public interest obligations for their digital spectrum, no further children’s television requirements, no free time mandates for political candidates, no return to the Fairness Doctrine, no EEO obligations, no license renewal requirements, no ownership caps;

<sup>13</sup>*Report and Order*, PP Docket No. 00-67, September 15, 2000. The Commission ordered that digital television sets that work with cable but that do not have a 1394 connector—therefore limiting the sets to one-way capability—will be labeled “Digital Cable Ready 1.” DTV sets with a 1394 connector will be labeled “Digital Cable Ready 2.” DTV sets that have set-top functionality integrated into the sets—and therefore do not need a 1394 connector to work with two-way cable services—will be labeled “Digital Cable Ready 3.”

<sup>14</sup>*TW launching fleet of local news channels: Time Warner’s local news push*, September 25, 2000, page 50.



no cross-ownership restrictions, and no criticism of their declining coverage of national elections?

It is time for the broadcast industry to stop blaming others and start taking responsibility—as the cable industry has done—for making its own transition to digital successful. If broadcasters want to hasten this transition, they should commit their energies to developing compelling digital programming that viewers want to watch.<sup>15</sup>

Mr. UPTON. Thank you.  
Mr. Parrish?

#### STATEMENT OF RONALD L. PARRISH

Mr. PARRISH. Thank you, Mr. Chairman.

My name is Ron Parrish. I am Vice President of RadioShack Corporation, headquartered in Fort Worth. With more than 7,200 RadioShack stores throughout the United States, 94 percent of all Americans live or work within a 5-minute commute of a RadioShack store. So we think we are closer to the consumer than any other consumer electronics retailer.

Our mission is to demystify technology for the mass market. We must confess we are still somewhat mystified ourselves why the promise of a vibrant and open market for both digital televisions and set-top boxes have yet to become a reality.

New generation set-top boxes should someday serve as the primary devices to provide digital home entertainment and Internet access for the mass market. Today personal computers are present in nearly half of the homes in American, and the PC has become the digital engine that drives the information networks on the Internet. Americans have also embraced digital age home entertainment, such as DVD and digital satellite services and digital cable to the extent it is available.

But as fast as these new digital entertainment venues are growing, it is troubling that video networks have not developed at equivalent pace. RadioShack knows that new products can be successful for the mass market only when performance and price meet expectations of the consumer.

Today in the digital television and set-top box markets, those expectations are not being achieved. A number of reasons have been proffered and, as mentioned today, must carry copyright protection, signal degradation, and other things. But, in fact, there is significant consumer confusion regarding what is the definition of digital television and HDTV. And there is a huge price differential in HDTV sets available.

As the committee saw, digital sets certainly produce superior video, but high-quality analog TVs with a digital programming source, such as direct TV or DVD, deliver a pretty darned good picture. The most important reason why digital televisions are not a substantial part of the market is because there is similar not much digital programming for the consumer to watch. Simply stated, manufacturers and content providers have failed to demonstrate a compelling reason for consumers to step up to these pricey products.

<sup>15</sup> "Because of incessant technical and political squabbling, none of these uses [multiple digital channels, wireless communications and other applications] has come to pass and precious bandwidth is going to waste... The truth is the broadcasters haven't come up with something people want." "HDTV: Don't Blame the FCC for Tuning Out," *Business Week*, February 5, 2001.

Competition for set-top boxes is also developing very slowly. A competitive market for set-top boxes would bring consumers a host of new devices and capabilities that provide both a higher-quality viewing experience and access to new services. The devices could range from integrated features, such as combining the set-top box functionality with DVD or digital recording or broadband Internet access into the digital television itself.

In other words, the set-top box will ultimately be most consumers' tool for access, not just to digital television but potentially to our entire entertainment network; that is, if vigorous competition develops in the market.

And while Congress took steps in 1996 to ensure competitive availability, 5 years later the FCC is still working on this provision. And the industry, cable industry, still continues to control distribution of boxes. You may hear many technical reasons why a competitive set-top box market has not developed, but I will submit to you the most arguments are the same type of reasons that AT&T used years ago, saying that attaching foreign devices, which was any telephone device not made by Bell, would destroy Americans' telephone networks.

You know, in 75 years of retailing, RadioShack has learned a few things about what makes a successful consumer electronics market. And we would ask the industry representatives here and public policymakers to keep certain principles in mind that consumers have come to expect in the CE market.

You might say that these are CE customers' maybe bill of rights. First, the consumer has the right to own, rather than rent, equipment if he so chooses. Cable industry still uses technical capabilities for its own MSO-provided devices that are not currently provided to competitive manufacturers of OpenCable devices.

There is little incentive for a consumer to buy a set-top box which has inferior capabilities. Likewise, the cable company uses subsidy arrangements to lower the monthly rental for its newer digital boxes for high-tier, more affluent customers at the expense of customers who lease old, obsolete analog boxes. This destroys the normal financial incentive to own your own box.

Next, the consumer has the right to purchase equipment which is compatible to his own equipment and is portable. And if he moves, he has the right to expect to plug it in at the new location and to receive all of its capabilities. Consumers today remain unable to purchase a set-top box which they would have confidence would work if they moved to another area with a different cable service provider. Could you imagine that problem in today's telephone CPE market?

Next, the consumer has the right to record music and programming for his own personal use and at the highest quality his equipment is capable of producing. Consumers are accustomed to recording programs for personal use. They expect to continue to do so if they step up to a digital television.

And while RadioShack does not question the need for copyright protection for unlawful copying, the cable industry and content providers have proposed to draft copyright license that would impose severe restrictions on recording and would degrade HDTV signals

to DTV-ready receivers and, therefore, degrade the signal to analog quality. This clearly compromises consumers' expectations.

Finally, Mr. Chairman, the consumer has the right to expect an open and competitive market where he or she may shop for equipment and services which suit his interests and pocketbook from a wide array of equipment producers and service providers and through vendors he trusts. All of these issues need to be refreshed by the parties if the digital entertainment world is to truly bloom.

Mr. Chairman, we appreciate having the opportunity to give RadioShack's perspective on this important subject. We are not in the chicken business, and we are not in the egg business, but we would just like to be the skillet to help put these products on the customers' table. Thank you.

[The prepared statement of Ronald L. Parrish follows:]

PREPARED STATEMENT OF RONALD L. PARRISH, VICE PRESIDENT OF INDUSTRY AND GOVERNMENT AFFAIRS, RADIOSHACK CORPORATION

Mr. Chairman and Members of the Subcommittee, my name is Ron Parrish, Vice President of Industry and Government Affairs at RadioShack. I would like to thank you for inviting me to appear before the Subcommittee.

RadioShack is one of the largest retailers of consumer electronics products in the country. There are 7,100 RadioShack stores throughout the United States—94% of people in the United States live or work within a five minute commute of a RadioShack store. RadioShack and the RadioShack stores currently employ 36,000 people and our retail sales were \$4.8 billion in 2000.

RadioShack is pleased that the Subcommittee is holding this first in a series of oversight hearings on digital television. We are deeply concerned that the parties involved have not fulfilled their promise of a vibrant and open market for both digital televisions and set top boxes—which should someday serve as the primary devices to provide digital home entertainment and Internet access for the mass market. The first vision of a flat screen digital television I ever witnessed was in the movie *Roller Ball* with Clint Eastwood. That was 1975. In 1975, most people had never heard of the Internet, electronic mail or even personal computers. Today the Internet is present in half of American homes and is the engine that drives information access. It is curious and troubling that video networks have not developed at an equivalent pace.

As a representative of the retail industry, I would like to share with you our perspective on two matters. First, the current status of the rollout of high definition television service and second, the current status of the availability of set top boxes. As a retailer, RadioShack is very sensitive to the needs and desires of consumers of electronics equipment and services. RadioShack has day-to-day experience with the products and services that consumers wish to buy and RadioShack knows that it can be successful only when the performance and price of the products it has to sell meet the expectations of consumers. Today in the digital television and set top box markets, those expectations cannot be fully met and thus both markets are developing slowly.

RadioShack has a significant interest in the timely roll out of high definition television. Offering consumers products that provide cutting edge performance is a priority of RadioShack's, as it is for other retailers of consumer electronics products. Parties involved in the introduction of digital television have identified a variety of reasons for the current pace of the DTV roll out: the absence of must-carry provisions, concerns over copyright protection, interoperability problems between cable and the necessary consumer electronics products, and even the fact that retailers are not ordering, stocking, and selling the necessary equipment. Retailers of course are eager to stock products that sell but it is not realistic to expect retailers will be able to sell products before consumers are prepared to buy them.

There is significant consumer confusion regarding the definition of digital television and HDTV. In addition, there remains a significant price-point differential with the genuine HDTV sets available at this time. Not only does the new technology cost more, but manufacturers are only including the technology in their higher-end, feature laden television models, resulting in prices much higher than those for feature rich analog sets. Finally, perhaps the most important reason why digital televisions are not a substantial portion of market sales is that consumers are aware that there is not yet much digital programming to watch. Simply stated, the

average consumer has decided against making the significant investment in digital television at this time.

The competitive market for set top boxes is developing slowly as well. I would like to focus the remainder of my testimony on the sale of set top boxes and their role in the transition to digital.

With more than two-thirds of American homes receiving television through cable systems, the cable industry plays a central role in the transition to DTV. As this transition takes place, Congress and the Federal Communications Commission have simultaneously taken steps to foster the competitive availability of navigation devices used on cable systems. A competitive market for navigation devices would bring to the consumer a host of new devices and capabilities that provide not only a higher quality viewing experience, but access to new services as well. These devices include not only digital set top boxes but also integrated devices, which combine the set top box functionality, a DVD player and other capabilities like Internet access into the digital television itself. In other words, the set top box will ultimately be the consumer's tool for access not just to digital television, but potentially to his or her entire electronic entertainment and information world.

Like any new product or technology, competition in the marketplace is essential in order for set top boxes to reach their maximum capabilities. Congress took steps to ensure such competition in the 1996 Act when it included a provision requiring the FCC to assure the competitive availability of navigation devices. The FCC is still working to implement this provision, and the cable industry continues to control the distribution of set top boxes to the consumer.

In 75 years of retailing, RadioShack has learned a few things about what makes a successful consumer electronics market. As I mentioned at the outset of my testimony, RadioShack's success, and the success of the set top box retail market generally, must depend on making sure consumer expectations are met with regard to the quality and availability of the product. There will be no competitive market for set top boxes until these basic consumer expectations are met.

*The Consumer has the right to own rather than rent a set top box.* Set top boxes equal in quality to those leased by the cable companies are not available. The set top boxes leased by the cable industry to their subscribers support interactivity. Set top boxes supporting interactivity are not available to retailers. The cable industry uses technical capabilities and specifications for its own MSO-provided devices that are different from the specifications provided to competitive manufacturers of the OpenCable devices. The result is that there is little incentive for the consumer to consider purchasing a set top box that has inferior capabilities.

In addition, subsidy arrangements destroy the normal financial incentive for a consumer to purchase a set top box. Section 629(a) of the 1996 Act explicitly barred cable operators from subsidizing set top box rentals with cable service revenues. While the Commission has permitted cable operators to "pool" set top box revenues, it appears that the cable industry is recovering the cost of the new digital set top boxes from subscribers who do not lease these boxes. A digital set top box costs approximately \$400 to manufacture, but the cable companies are leasing them to subscribers for only \$3-4 dollars per month. It appears the industry is spreading the digital set top box cost between all of their subscribers, even those who lease an old analog box. As Congress recognized in 1996, retailers simply can not compete for consumers or meet their expectations in a subsidized environment.

*The Consumer has the right to purchase a set top box, take his box with him if he moves, and plug it in and have access to all of the capabilities available.* In its initial Navigation Devices Order, the Commission recognized that true competition for navigation devices would not result without portability, by stating, "[a]ny significant disparity among cable operations . . . undermines the commercial availability of equipment. Subscribers are more likely to purchase, and not lease from a provider, if they can use the navigation device when they move to an area served by a different operator. Geographic portability will enhance the commercial availability of navigation devices and should result in wider choice and lower prices to consumers."<sup>1</sup>

Although the Commission did not adopt specific requirements regarding portability, it did set general parameters and stated that if the industry does not take steps to achieve portability, further Commission action may be necessary.<sup>2</sup> Consumers today remain unable to purchase a set top box with an expectation that they would be able to use it if they moved to an area with a different cable operator. Competition in the market for set top boxes should follow the pattern of competition

<sup>1</sup>Navigation Devices Order, 13 FCC Rcd at ¶61. See also Response of the Consumer Electronics Retailers Coalition to the July 7, 2000 Cable Industry Status Report, at 7-8.

<sup>2</sup>Navigation Devices Order, 13 FCC Rcd at ¶132.

in the market for telephone sets. Competition was possible in the telephone set market because consumers knew that they could buy a telephone in one part of the country and use it anywhere else when they moved. The same must be true with set top boxes.

*The Consumer has the right to record music or programming for his own personal use at the quality he expects from the equipment he owns.* Manufacturers of set top boxes, are required to obtain a license to provide copyright protection against unlawful copying of content. RadioShack does not question the need for copyright protection against unlawful copying and distribution of copyrighted works. However, consumers are accustomed to recording programs for personal use today and they expect to be able to continue to do so if they upgrade to digital televisions and set top boxes. The cable industry and content providers have proposed a draft copyright license, however, that would withhold content from cable systems unless set top boxes and other consumer electronics equipment have the capability to allow them to impose severe restrictions on recording. The draft license would also require manufacturers to reduce the quality of the programming for copying purposes by cutting off or degrading the HDTV signals to DTV-ready receivers—thereby reducing the quality of the consumers' viewing to analog quality. This clearly compromises the effort to meet consumer expectations for digital products.

*Finally, the Consumer has the right to expect an open and competitive market where he may shop for equipment and services which suit his interests and pocket-book, from a wide array of equipment producers and service providers and vendors he trusts.*

All of the issues affecting the delay of digital television work in tandem. As important as the broadcasters' ability and willingness to provide significant digital content is to the roll out of digital television, maximum potential will still not be met without simultaneously meeting consumer expectations regarding competitive marketplace for digital televisions, navigation devices and set top boxes in particular. Thank you for the opportunity to address your subcommittee.

Mr. UPTON. Thank you.

#### STATEMENT OF BEN TUCKER

Mr. TUCKER. Thank you, Mr. Chairman. I appreciate the opportunity to appear before your subcommittee today to discuss the digital transition.

My name is Ben Tucker, and I am the President of Fisher Broadcasting. We own 12 television stations in the States of Washington, Oregon, and Idaho, in both large and small markets. And I am also the Television Board Chairman for the National Association of Broadcasters.

I would like to congratulate Chairman Upton on continuing the focus on the digital television transition initiated by Mr. Markey 14 years ago. When broadcasters last appeared before the subcommittee in July of this past year, Chairman Tauzin wrapped up the hearing with four observations or deal breakers.

First, he stated that any broadcasters who would lease or sell their digital spectrum would run the risk of Congress revisiting a deal and reclaiming the spectrum. While we believe in multipurpose in the use of digital spectrum, as provided in the law, we do not endorse those who seek to sell portions of our digital spectrum.

Second, he affirmed that not providing the American public with HDTV would be a mistake. He observed that consumers need a chance to see it and decide if they want it. Well, we agree.

Today we have more than 1,000 hours of high-definition programming coming from our networks with CBS providing virtually all of its prime time programming in HDTV. And we have encouraged all of the networks to do more. We are eager to provide HDTV to our viewers. And at my company station, KOMO in Seattle, we broadcast local news in high-definition.

Third, Mr. Tauzin said, and I quote, "It would be a very big mistake for broadcasters, networks, or anyone else, cable companies, anybody else who kept the digital television signals from reaching the American consumer. Next," he offered, "I would hope that part of the deal is that we get all of these services out to as many people as possible so the prices come down and more people can afford them and that free television remains part of the equation." And the final part of the deal is that the analog spectrum has to come back. Chairman Upton, those last deal breakers form the crux of the problem as we move forward.

Broadcasters have successfully resolved the transmission standard dispute that the subcommittee focused on at last year's hearing. We have reaffirmed our commitment to VSB and are investing millions of dollars in improving the reach of our free signals.

Unfortunately, free over-the-air broadcasters continue to be denied access to cable homes. For the majority of Americans to see local broadcasters' digital offerings during the transition, digital cable systems must be required to carry both the analog and digital channels. Cable cannot be allowed to continue to act as a digital gatekeeper for 70 percent of American homes.

The general counsel of AT&T told the FCC last year once they upgrade to digital cable, they will be crying for content. The average capacity for cable systems today I think is somewhere in the neighborhood of 172 channels. So I think there is some capacity.

The Consumer Electronics Association has endorsed digital must carry. And the Congressional Budget Office concluded that a successful prompt transition, and I quote, "requires a strong must carry rule from the FCC," end quote.

Regarding broadcasters in the analog spectrum, I can assure you that no one is more eager for the analog spectrum to be returned than local stations that are essentially running two stations with no new revenue source.

In Seattle, we broadcast two signals: one digital and one analog. And it costs about \$10,000 a month for additional electricity. That was last month's rate. With rates doing what they are doing up there, I am not sure where it is going to go going forward.

At last July's hearing, the committee asked NAB what Congress should do to expedite the digital conversion. I would like to report today that 185 stations that serve approximately 67 percent of the country are operating in digital. We are ahead of schedule and will continue to work hard to meet the established goals. But I would be less than candid if I didn't say that meeting the 2002 deadline will be a challenge, particularly for smaller stations.

That is the broadcaster report of the transition. The really important element is the consumer. We believe that there are three important areas that Congress must address to reach the 85 percent penetration that is the second half of the equation when we give back the spectrum.

First, for the hundreds of millions of Americans who want free over-the-air broadcasting, DTV tuners must be built into sets alongside analog tuners. We are currently engaged in productive talks with the consumer electronics manufacturers, and I am hopeful that more sets will be built now that the transition standard has been resolved. In addition, I am heartened despite today and

the fact that the cost of DTV sets appears to be coming down, but good news and promises won't solve the problem. We still need Congress to support a DTV tuner in every set.

Second, DTV sets and set-top boxes must be engineered in a fashion that enables these sets to be connected to a digital cable system. This concept is called interoperability. And while there appears to be some progress, what is needed is for the FCC to ensure that it happens.

And, finally, cable systems must carry our digital signal in order to reach the 70 percent of households they serve. Regrettably, the problem of reaching the American consumer can only be solved by cable unlocking the door to these homes.

Chairman Upton, Mr. Markey, members of the subcommittee, broadcasters are making progress in delivering digital television signals to the consumer, but change is hard, particularly when it affects Americans' pocketbooks and their television sets.

Until an American can buy an HDTV set with a built-in digital tuner, take it home, plug it in, and receive a station's over-the-air programming through cable, as the majority of them do today, the transition will not be successful.

Thank you for having me today.

[The prepared statement of Ben Tucker follows:]

PREPARED STATEMENT OF BEN TUCKER, PRESIDENT, FISHER BROADCASTING  
COMPANY

Thank you, Mr. Chairman, for the opportunity to appear before your subcommittee today to discuss the transition to digital television. My name is Ben Tucker. I am the President of the Fisher Broadcasting Company. I also am the National Association of Broadcasters (NAB) Television Board Chairman. I'm pleased to represent the broadcasting industry at this hearing.

Fisher Broadcasting, Inc. owns twelve television stations, the majority of which are licensed in the upper northwest states. We currently have two DTV stations on the air—KATU in Portland, OR and KOMO in Seattle, WA. DTV equipment is on order for the rest of our stations. I would like to highlight the fact that KOMO in Seattle currently provides local HDTV newscasts. As you can see, Fisher Broadcasting, Inc. is committed to making the DTV transition as quickly as possible. This commitment is the same for the entire broadcast industry.

BROADCASTERS COMMITMENT TO DTV

*Stations on the air*

As of February 26, 2001, 182 DTV stations are on the air in 62 markets reaching 67.18% of all TV households across the nation.<sup>1</sup> Seventy-one of these stations—almost 40 percent—currently on the air are ahead of their required build-out schedule. These 182 DTV stations have met—or surpassed—the aggressive build-out schedule set by the FCC in order to meet the Congressional target date of 2006 to complete the digital transition.

*Programming*

The obvious advantage of DTV is the crisper pictures and enhanced viewing experience. Stations will be able to offer many more choices to consumers. Consumers will be the driving force behind the programming offered by DTV stations.

DTV stations are required to provide at least one free, over-the-air channel. This could come in the form of one high definition TV (HDTV) channel, or several streams of standard definition TV (SDTV) signals. Stations also could choose to offer some HDTV programming and some SDTV programming depending on the time of day and consumer demands. DTV stations are allowed to offer ancillary or supplemental services.<sup>2</sup>

<sup>1</sup> A list of stations currently on the air is attached as Exhibit A.

<sup>2</sup> Stations must pay a 5% fee on any profits earned from subscription services.

The television networks currently offer hundreds of hours of HDTV programming. For example, CBS offers almost 1,000 hours per year, including nearly all prime time programming and major sporting events. ABC provides *NYPD Blue* and Disney films in HDTV. Locally, several stations—including Fisher Broadcasting's KOMO—provide local HDTV newscasts and a consortium of commercial stations exchange locally produced HDTV programs.

We are far ahead in the programming offerings in the DTV transition from those offered when the television industry transitioned to color. In the first year of color television back in the 1950s, only 68 hours were offered to viewers. With over 1,000 hours of HDTV programming this year, we are far outpacing the color TV rollout. That's good news because as the transition moves forward, we can only expect content providers will produce more and more programming in HDTV.

Even though there is consistent progress regarding programming and the number of DTV stations currently on the air, the transition still needs help with some major issues that threaten to throw the transition off the tracks.

#### BROADCASTERS CALL FOR ACTION

There are only 13 months left before the May 2002 deadline for all commercial stations to have a digital signal on the air. They face numerous obstacles from a regulatory standpoint, including the same build out hurdles the existing 182 DTV stations faced.

What we have learned in the last few years is that we cannot accomplish this monumental task on our own. The transition to DTV is the biggest step for the television industry since the advent of color TV and represents a multi-million dollar expense for each individual station. Additionally, during the transition, each broadcast station will be operating essentially two stations, without any guarantee of additional revenue. Broadcasters are committed to this transition to bring DTV service to the American public. However, at this point, the DTV transition appears to be faltering due to several remaining issues that have yet to be resolved by all of the parties involved in this transition.

There are several entities that serve vital roles in this transition in addition to the broadcasting industry. In order for the transition to be successful, all parties must be willing to do their part to get the job done.

The first party, the Federal Communications Commission (FCC), is charged with overseeing the implementation of DTV service to the American public. While the FCC has accomplished a great deal regarding the transition—including assigning an additional 1600 new DTV channel allotments—it has taken a hands off approach with some of the remaining critical issues such as digital must carry, DTV/cable interoperability, and DTV set standards. It is time for the FCC to take a leadership role in this transition and help focus all parties on getting the remaining pieces put in place so the goal of DTV can be realized as quickly as possible.

Cable operators, for example, have an important role in the transition. Nearly 70% of all homes receive over-the-air broadcast signals through cable providers. This means that cable operators hold an important key in the transition—access to viewers. A successful transition, after all, depends on consumers being able to see a broadcaster's digital product. Cable carriage of all over-the-air DTV channels and innovative digital services will create more demands for digital programming, resulting in consumers buying digital sets and converters at a faster pace, which helps drive the transition along.

Finally, consumers need the proper equipment to experience the benefits of DTV. This means that new DTV sets or set top converters must first be manufactured and second, made available to the public. Consumers must be assured that the new digital products will work with cable set top boxes and that the equipment can receive and decode DTV signals. Thus, manufacturers must work with cable companies to ensure that DTV sets are interoperable with digital cable boxes. Manufacturers must ensure that more DTV sets will include DTV tuners so consumers can receive the over-the-air signals.

The FCC has been relying on the marketplace to settle the remaining issues. We have learned that the marketplace is not driving the transition fast enough—placing the target date in jeopardy. We need resolution of the digital must carry, DTV/cable interoperability, and DTV set reception issues or the transition will continue to falter and stall. I welcome the opportunity to outline these issues for you.

#### DTV TRANSMISSION STANDARD

Before discussing the other issues mentioned above, I would like to take the opportunity to dismiss any questions regarding the broadcasting industry's commitment to the FCC-approved DTV transmission standard, 8-VSB.



In the summer of 1999, concerns were raised among some in the broadcasting industry regarding the 8-VSB standard and its performance in urban markets and for mobile applications. Some believed that another transmission standard—COFDM—was more appropriate. When the issue was raised, most of the other entities involved in the transition accused the broadcasters of using it as a stalling tactic and questioned our commitment to DTV. We rose to this challenge and immediately took steps to resolve the issue.

In 2000, the broadcasting industry conducted a parallel investigation of VSB improvements and COFDM performance. This joint initiative included the National Association of Broadcasters (NAB) and Maximum Service Television (MSTV), with funding from the four networks (PBS in-kind), group broadcasters, and NAB.

Investigation of VSB included independent evaluations of second generation products and test performance in the field and improvements to the 8-VSB standard for possible modification of the standard to accommodate new applications. The project investigated the COFDM standard to test the performance of COFDM for existing and new services.

Upon completion of the testing in 2000, results were reported to the NAB and MSTV Boards of Directors in January 2001. After reviewing the results, both Boards passed a joint resolution that stated there is insufficient evidence to add COFDM as a DTV standard and thus it reaffirmed the commitment to the VSB standard.<sup>3</sup> Soon thereafter, the FCC affirmed the 8-VSB modulation system as the U.S. DTV transmission standard.

While virtually all of the broadcasting industry is now united behind the 8-VSB standard, DTV set reception must be improved. Broadcasters and, we hope, our manufacturer brethren are committed to seeing this happen post haste. Additionally, we are committed in helping to resolve the rest of the hurdles on this track to the DTV finish line.

#### DTV MUST CARRY

Digital must carry is the most important issue still facing the DTV transition. At this point, not many consumers can receive the currently available DTV signals via cable because cable, generally, will not talk to broadcasters about carriage of DTV signals. Must carry of digital signals during the transition will help fuel the demand for digital programming, and will entice consumers to buy digital sets. Why should the 70% of Americans who are cable subscribers join the DTV transition by purchasing an expensive DTV set if they cannot easily get DTV broadcasts that are in their market?

The Communications Act of 1934, as amended by the Cable Act of 1992, mandates carriage of both analog and DTV signals.<sup>4</sup> The FCC is required to ensure the carriage of digital television signals;<sup>5</sup> however, it has so far failed to comply with this mandate. The FCC issued a *Notice of Proposed Rulemaking* for digital must carry in July 1998.<sup>6</sup> Nearly two and a half years later, it issued a “partial” decision.<sup>7</sup> There, the FCC (1) refused to require dual must carry of both analog and DTV signals; (2) asked for more information on channel capacity from cable operators; and (3) established that content to be carried after the transition is only one programming stream plus program related content.<sup>8</sup>

This partial decision does not solve the problems of the DTV transition—it only exacerbates them. Carriage of DTV signals during the transition is essential for a successful and timely conversion. Without must carry, completing the transition even close to 2006 is impossible. The Congressional Budget Office recognized this in 1999 when it stated:

“The availability of digital programming on cable systems is a necessary, though not sufficient, condition for a timely transition. Without it, reaching the 85 percent penetration rate needed to end analog broadcasts in a market will take much longer because whenever the transition is completed, the largest number of households will probably be receiving DTV programming from cable providers.” *Completing the Transition to Digital Television*, Congressional Budget Office Report, September 1999.

<sup>3</sup>A copy of the Joint Resolution is attached as Exhibit B.

<sup>4</sup>Communications Act of 1934, § 614(a).

<sup>5</sup>*Id.* at § 614(b)(4)(B).

<sup>6</sup>*Notice of Proposed Rule Making*, CS Docket No. 98-120, July 10, 1998.

<sup>7</sup>*First Report and Order and Further Notice of Proposed Rulemaking*, CS Docket No. 98-120, January 18, 2001 [hereinafter *First Report and Order*]

<sup>8</sup>*Id.* at ¶¶ 112 & 57.

Even the FCC acknowledges cable carriage likely “is essential” to the DTV transition.<sup>9</sup> The question then remains—why does the FCC fail to take adequate steps to assure carriage on cable systems in order to facilitate the DTV transition?

Even after the transition is over, the FCC’s decision on must carry substantially cuts off consumers from realizing all the benefits of DTV. The FCC indicates it will require carriage of only one channel of each DTV broadcaster and other material “related” to that channel.<sup>10</sup> However, this completely dismisses the desirable choices broadcasters may offer to consumers by providing several SDTV signals (*i.e.*, multicasting). If a DTV station offers several free—but different—over-the-air programming choices, it should not be forced to choose which is the “main” program channel to be carried on the cable systems. Consumers should be offered all free broadcast programming through their cable system, regardless of whether that comes in the form of one HDTV channel or several SDTV channels, or a combination of both.<sup>11</sup> The absence of digital must carry frustrates Congressional intent in providing flexibility in the use of the spectrum to give consumers all the benefits of digital technology.

Finally, we have all heard the cries from the cable companies that digital must carry will force them to take existing cable channels off their systems to make room for the DTV signals. These concerns are disingenuous. The broadcasting industry is not asking for an increase in the Cable Act’s caps on the number of cable channels that must be devoted to broadcast channel carriage. Further, we do not ask for carriage of digital signals on smaller cable companies until they make their own transition to upgraded facilities and digital cable.

It is clear that cable companies are dramatically increasing their capacities, and will continue to do so with digital cable systems. In fact, at the height of the DTV transition when both analog and digital broadcast channels would be carried by cable systems,<sup>12</sup> the average analog cable system will have the capacity for approximately 130 channels.<sup>13</sup> An average digital cable system is predicted to have a capacity of 172 channels.<sup>14</sup> As a point of reference, the average capacity for cable systems in 1998 (when the FCC began its digital must carry proceeding) was 75.<sup>15</sup>

As a final “nail in the coffin” on channel capacity concerns, at a FCC Cable Bureau hearing last year, the General Counsel of AT&T unwittingly but proudly professed that “[cable] channel capacity is not only increasing exponentially, but is about to go even beyond that as it [cable] goes digital.”<sup>16</sup> He went on to say that AT&T’s belief “is that we are going to be crying for content.”<sup>17</sup> He had no answer when asked if that included digital must carry signals.<sup>18</sup>

Digital must carry is the most important, yet unresolved issue for the digital transition. The plain text of the must carry statute is clear, cable operators “shall carry the signals” of broadcast operators.<sup>19</sup> We ask that Congress take every action necessary to ensure must carry status for all digital broadcast channels during, as well as after, the transition.

#### DTV/CABLE INTEROPERABILITY

At this point, there are not standard DTV sets on the market that have connections that will work with digital cable set top boxes.<sup>20</sup> Thus, there is no practical way for the 70% of consumers who view television via cable to get a broadcast DTV

<sup>9</sup>See *Fourth Further Notice of Proposed Rulemaking/Third Notice of Inquiry*, MM Docket No. 87-268, 10 FCC Rcd. 10540, 10542 (1995).

<sup>10</sup>*First Report and Order* at ¶112.

<sup>11</sup>Carriage of a “multicast” channel does not take up any more space on a cable system than a single HDTV channel. The same amount of space (19.4 megabits) is required. It makes no practical sense for cable companies not to allocate—at all times—enough space for a HDTV signal, which may follow or precede a multicast signal. It simply is not a space problem for cable to carry all free DTV channels sent from the broadcaster.

<sup>12</sup>In 2002, when all commercial broadcast stations must have a digital signal on the air, there would be an average of 12 broadcast channels carried. As the transition progresses, this number decreases back to the average of 6 broadcast channels at the end of the DTV transition. See NAB’s Reply Comments in CS Docket No. 98-120, at Exhibit F (Dec. 22, 1998).

<sup>13</sup>*Id.*

<sup>14</sup>*Id.*

<sup>15</sup>*Id.*

<sup>16</sup>AT&T/Media One Cable Services Bureau Hearing, February 4, 2000.

<sup>17</sup>*Id.*

<sup>18</sup>Similarly, the Senior Vice President, Engineering and Technology for Media One cable has been quoted saying that “This digital capability—effectively obliterate[s] the must-carry threat.” Jim Barthold, *Bandwidth Debate: Just How Much Will Be Enough* (last modified Aug. 10, 1998) <http://www.mediacentrall.com/Magazines/CableWorld/News98/1998081003.html>.

<sup>19</sup>Communications Act of 1934, § 614(b)(1)(B).

<sup>20</sup>See DTV Products Chart, attached as Exhibit C.

signal over cable today. Nor is there completion of the long promised built-to specs for cable ready DTV sets. Nor is there an indication that either will occur in time for the DTV transition to meet the Congressional deadlines.

There are incomplete, voluntary specifications between the consumer electronics and cable industries for DTV/Cable interoperability. Additionally, there is a remaining issue regarding copy protection for programming. All this translates into virtually no incentive for cable subscribers to purchase DTV receivers.

Agreements on these issues are both close and stalled. Quick resolution is needed to move the transition forward. This means there needs to be consumer-friendly IEEE 1394 connectors on all DTV receivers, set-top boxes and other DTV products and “cable-ready” characteristics for direct connection DTV receivers.<sup>21</sup>

For years, the broadcasting industry has been urging the FCC to mandate interoperability standards for DTV and cable products. At a minimum, it needs to secure strong manufacturer commitments for near-term provision of such products, or the transition will be further stalled. Again, Congress should take the necessary action to ensure resolution of these issues.

#### DTV RECEIVER STANDARDS

The issue of receiver standards is important to the transition—this involves (1) mandating DTV tuners in all new TV sets sold, and (2) setting specific technical requirements regarding reception. Right now, if a consumer buys a DTV set, it is likely that the consumer will need to purchase an additional set-top box with a DTV tuner in order to receive DTV signals. Additionally, there is no guarantee that the DTV set will properly receive the over-the-air signals sent by broadcasters.

In the beginning of the DTV transition, the FCC set specific DTV transmission standards based on technical assumptions about receiver performance. The consumer electronics manufacturers have resisted any mandated receiver standards to meet the FCC’s assumptions for reception. The FCC has relied on the marketplace to take care of this issue and has refused to set performance levels for DTV sets. It reaffirmed its position in January 2001. However, it turns out—as broadcasters had predicted—that early receiver performance does not match the FCC’s assumptions. It is inconsistent for the FCC to expect to achieve certain DTV coverage and service goals, yet be unwilling to set performance levels for DTV sets. Why should consumers purchase DTV sets with poor reception performance?

By January 2001, there were approximately 780,000 DTV displays (with and without integrated tuners) sold to retailers. There are no breakout figures on sets with DTV tuners (integrated DTVs). At the same time, only 60,600 set top tuner boxes were sold to retailers. Thus, there is only a small fraction of the hundreds of thousands of DTV displays that are able to receive a DTV signal over-the-air. At this rate, DTV receiver sales (integrated or set top tuners) will not reach the penetration levels needed to complete the transition by the target date of 2006 set by Congress.

Broadcasters have urged the FCC to adopt All Channel Television Receiver Rules that will require that all new television receivers thirteen inches and greater in screen size be capable of receiving all frequencies allocated by the FCC to television broadcasting, including all NTSC and all DTV channels.

While this is a significant step, it is not without precedent. The All Channel Receiver Act (47 U.S.C. § 303(s)) and the All Channel Television Receiver Rules,<sup>22</sup> provide the authority for such action by the FCC. These previous actions were taken to promote and develop the UHF frequencies. Congress, at that time, found that the lack of receivers capable of receiving UHF signals was the root of the problem for the faltering UHF service. It determined that “the only practical and effective means of insuring that such receivers get into the hands of the public is to enact legislation requiring that all sets manufactured are capable of receiving all of the channels allocated for television use.”<sup>23</sup> This reasoning from the UHF situation applies to the current DTV situation—but now, with even more force.

In 1962, Congress determined that the dramatic step of the All Channel Receiver Act was necessary, even given initially increased costs (that would diminish with mass production). Congress reasoned that the small increase in cost was greatly off-

<sup>21</sup> While copy protection issues must be soon settled, 1394 licensors should not be permitted to have a blanket ban on use of this copy protection technology for particular content, i.e. free broadcast programming.

<sup>22</sup> *First Report and Order*, All Channel Television Receiver Rules (All Channel Act), Docket No. 14760, 27 Fed. Reg. 11698 (Nov. 28, 1962).

<sup>23</sup> Senate Report No. 87-1526, 2d Sess. (1962), reprinted in 1962 U.S.C.C.A.N. Vol. 1, 1873.

set by the benefits of “unlocking” the valuable UHF channels.<sup>24</sup> The same reasoning applies to the DTV transition today.

DTV is a unique transition of the entire television system to digital technology. Even though the price to consumers for an all-channel receiver will be higher than analog-only sets, the higher costs will be a small price to pay for “unlocking” the value of DTV channels for public benefit. Not to mention the fact that it also will release valuable NTSC channels, to be returned to the public for its benefit and use as Congress deems fit.

This bold action is necessary to re-vitalize a transition that has languished far too long. In January 2001, the FCC issued a *Further Notice of Proposed Rulemaking* regarding this issue.<sup>25</sup> However, it only proposed to require tuners in sets that are 32 inches or larger, then phase-in tuner requirements for smaller sets. While this is a first step, it is not the bold action necessary to invigorate the DTV transition in order to meet Congress’ 2006 timeframe. If necessary, Congress should take appropriate action to resolve these pending receiver issues.

#### OTHER BUILD OUT PROBLEMS

As mentioned earlier, there are 13 months left before all commercial broadcasters must have a DTV signal on the air. There are approximately 1200 stations left to go on-air with DTV. Of the 182 DTV stations currently on the air, many faced build out problems. These same problems, and more, will exist for the rest of the stations yet to make the transition.

#### *Economic Issues*

It costs approximately \$8 million to \$10 million to fully convert a station to digital operation. To date, the industry has spent hundreds of millions of dollars. Just to get a digital station on the air costs roughly \$2 million. For many of the remaining stations and markets, these costs are well above the value of the existing analog station. And this, when there is no guarantee of any additional revenue from running two stations.

#### *Tower citing/Zoning Delays*

New DTV stations require new DTV transmitting antennas. Stations must either use existing towers or build new towers. These changes often require approval from local zoning boards—which historically do not act quickly on these issues.

As part of the FCC’s *Biennial Review* of the DTV transition, NAB conducted a survey of all commercial television stations asking specific questions about implementation problems. A surprising number of broadcasters (38.4% of respondents) reported that government—local and federal—was causing delays in their digital roll-out.<sup>26</sup> Stations cited numerous delays with local zoning or board approvals, the Federal Aviation Administration (FAA), local and federal environmental agencies, as well as significant delays in the FCC approval process.

Once clearance is approved for any tower changes, the next hurdle for stations will be to find a tower crew to actually perform the work. There are limited numbers of tower companies with crews to do this specialized work. Further, as nearly 1200 stations place orders for the necessary DTV equipment, delivery delays from manufacturers are likely.

As you can see, merely getting a station on the air on schedule has its own difficulties, not to mention the larger regulatory issues that are threatening to hold up the DTV transition. Again, broadcasters are working towards the end, but there needs to be some help along the way from all parties involved, as previously discussed.

#### CONCLUSION

Mr. Chairman, it has been my great privilege to address this subcommittee on the subject of the digital television transition. I believe that broadcasters are fully committed to this transition that is poised to offer huge new benefits to the American public.

I hope that Congress will take a serious look at the issues facing the DTV transition and urge the cooperation of all parties to get the transition on a quicker pace towards completion.

<sup>24</sup>*Id.* at 1876.

<sup>25</sup>Report and Order and Further Notice of Proposed Rule Making, MM Docket No. 00-39, ¶¶ 103-112 (January 18, 2001).

<sup>26</sup>See *2000 Digital Implementation Survey*, May 2000 (attached as an Exhibit to NAB’s Comments in MM Docket No. 00-39, May 17, 2000).

# Exhibit A

## DTV Stations On Air by State

27-Feb-01

State	Calls	City	License	Network	Group/Organization	DMAName	DMA Rank
AL	WALA	Mobile		FOX	Emmis Communications Corp	Mobile-Pensacola	62
1							
AZ	KNXV	Phoenix		ABC	Scripps Howard Broadcasting	Phoenix	17
	KPHO	Phoenix		CBS	Meredith Corporation Broadc	Phoenix	17
	KSAZ	Phoenix		FOX	Fox Television Stations Inc.	Phoenix	17
	KPNX	Phoenix		NBC	Gannett Broadcasting	Phoenix	17
	KUTP	Phoenix		United Paramount Net	Chris Craft/United Television	Phoenix	17
5							

State	Calls	City	License	Network	Group/Organization	DMAName	DMA Rank
CA	KCOP	Hollywood		United Paramount Net	Chris Craft/United Television	Los Angeles	2
	KTLA	Hollywood		Warner Bros.	Tribune Broadcasting Compa	Los Angeles	2
	KCAL	LA/Norwalk		Pure Independent	Young Broadcasting Inc.	Los Angeles	2
	KABC	Los Angeles		ABC	ABC Broadcast Group	Los Angeles	2
	KCBS	Los Angeles		CBS	CBS Television Stations	Los Angeles	2
	KTTV	Los Angeles		FOX	Fox Television Stations Inc.	Los Angeles	2
	KNBC	Los Angeles		NBC	NBC Television Stations Divi	Los Angeles	2
	KCET	Los Angeles		PBS		Los Angeles	2
	KWHY	Los Angeles		Pure Independent		Los Angeles	2
	KTVU	Oakland		FOX	Cox Television	San Francisco-Oakland-San Jose	5
	KXTV	Sacramento		ABC	Gannett Broadcasting	Sacramento-Stockton-Modesto	19
	KTXL	Sacramento		FOX	Tribune Broadcasting Compa	Sacramento-Stockton-Modesto	19
	KCRA	Sacramento		NBC	Hearst-Argyle Television, Inc	Sacramento-Stockton-Modesto	19
	KGTV	San Diego		ABC	McGraw-Hill Broadcasting C	San Diego	25
	KFMB	San Diego		CBS	Midwest Television Inc.	San Diego	25
	KNSD	San Diego		NBC	NBC Television Stations Divi	San Diego	25
	KSWB	San Diego		Warner Bros.	Tribune Broadcasting Compa	San Diego	25
	KGO	San Francisco		ABC	ABC Broadcast Group	San Francisco-Oakland-San Jose	5
	KPIX	San Francisco		CBS	CBS Television Stations	San Francisco-Oakland-San Jose	5
	KRON	San Francisco		NBC	Young Broadcasting Inc.	San Francisco-Oakland-San Jose	5
	KQED	San Francisco		PBS	KQED, Inc.	San Francisco-Oakland-San Jose	5
	KBHK	San Francisco		United Paramount Net	Chris Craft/United Television	San Francisco-Oakland-San Jose	5
	KBWB	San Francisco		Warner Bros.	Granite Broadcasting Corpora	San Francisco-Oakland-San Jose	5
	KICU	San Jose		Pure Independent	Cox Television	San Francisco-Oakland-San Jose	5
	KNTV	San Jose		Pure Independent	Granite Broadcasting Corpora	San Francisco-Oakland-San Jose	5
	KOVR	Stockton		CBS	Sinclair Broadcast Group Inc.	Sacramento-Stockton-Modesto	19

State	Calls	City	OfL	License	Network	Group	Organization	DMA	Name	DMARank
26										
CO	KMGH	Denver		ABC		McGraw-Hill Broadcasting C	Denver	18		
	KDVR	Denver		FOX		Fox Television Stations Inc.	Denver	18		
	KRMA	Denver		PBS			Denver	18		
								3		
CT	WFSB	Hartford		CBS		Meredith Corporation Broadc	Hartford & New Haven	27		
	WTNH	New Haven		ABC		LIN Television Corporation	Hartford & New Haven	27		75
								2		
DC	WJLA	Washington		ABC		Allbritton Communications	Washington, DC	8		
	WUSA	Washington		CBS		Gannett Broadcasting	Washington, DC	8		
	WTTG	Washington		FOX		Fox Television Stations Inc.	Washington, DC	8		
	WRC	Washington		NBC		NBC Television Stations Divi	Washington, DC	8		
	WETA	Washington		PBS		Gtr. Wash. Educ. Telecomm.	Washington, DC	8		
								5		
DE	WHYY	Wilmington		PBS		WHYY Incorporated	Philadelphia	4		
								1		







State	Calls	City	License	Network	Group/Organization	DMA Name	DMA Rank
MA	WCVB	Boston		ABC	Hearst-Argyle Television, Inc	Boston	6
	WBZ	Boston		CBS	CBS Television Stations	Boston	6
	WFXT	Boston		FOX	Fox Television Stations Inc.	Boston	6
	WHDH	Boston		NBC	Sunbeam Television Corporat	Boston	6
	WHUB	Marlborough		Pure Independent	USA Broadcasting	Boston	6
	WGBY	Springfield		PBS	WGBH Educational Foundati	Springfield-Holyoke	105
							6
MD	WMPT	Annapolis		PBS		Baltimore	24
	WMAR	Baltimore		ABC	Scripps Howard Broadcasting	Baltimore	24
	WJZ	Baltimore		CBS	CBS Television Stations	Baltimore	24
	WBFF	Baltimore		FOX	Sinclair Broadcast Group Inc.	Baltimore	24
	WBAL	Baltimore		NBC	Hearst-Argyle Television, Inc	Baltimore	24
	WBOC	Salisbury		CBS		Salisbury	162
							6
ME	WCBB	Augusta		PBS	Maine Public Broadcasting	Portland-Auburn	80
						1	

State	Calls	City	Of/License	Network	Group/Organization	DMAName	DMARank	
MI	WXYZ	Detroit		ABC	Scripps Howard Broadcasting	Detroit	9	
	WWJ	Detroit		CBS	CBS Television Stations	Detroit	9	
	WJBK	Detroit		FOX	Fox Television Stations Inc.	Detroit	9	
	WDIV	Detroit		NBC	Post-Newsweek Stations, Inc.	Detroit	9	
	WTVS	Detroit		PBS		Detroit	9	
	WOOD	Grand Rapids		NBC	LIN Television Corporation	Grand Rapids-Kalamazoo-Battle	38	
	WKBD	Southfield		United Paramount Net	CBS Television Stations	Detroit	9	
				7				
	MN	KMSP	Minneapolis		United Paramount Net	Chris Craft/United Television	Minneapolis-St. Paul	14
		KTTC	Rochester		NBC	QNI Broadcast Group	Rochester-Mason City-Austin	153
KSTP		St. Paul		ABC	Hubbard Television Group	Minneapolis-St. Paul	14	
KTCI		St. Paul		PBS		Minneapolis-St. Paul	14	
				4				
							79	
MO	KCPT	Kansas City		PBS		Kansas City	31	
	KDNL	St. Louis		ABC	Sinclair Broadcast Group Inc.	St. Louis	21	
	KMOV	St. Louis		CBS	Belo Corporation	St. Louis	21	
	KTVI	St. Louis		FOX	Fox Television Stations Inc.	St. Louis	21	
	KSDK	St. Louis		NBC	Gannett Broadcasting	St. Louis	21	
				5				
MS	WMPN	Jackson		PBS	Mississippi Authority for ET	Jackson, Ms	89	
				1				



State	Calls	CityOfLicense	Network	GroupOrganization	DMAName	DMARank	
NY	WABC	New York	ABC	ABC Broadcast Group	New York	1	
	WCBS	New York	CBS	CBS Television Stations	New York	1	
	WNYW	New York	FOX	Fox Television Stations Inc.	New York	1	
	WNBC	New York	NBC	NBC Television Stations Divi	New York	1	
	WPIX	New York	Warner Bros.	Tribune Broadcasting Compa	New York	1	
				5			
OH	WCPO	Cincinnati	ABC	Scripps Howard Broadcasting	Cincinnati	32	
	WKRC	Cincinnati	CBS	Clear Channel Communicatio	Cincinnati	32	
	WLWT	Cincinnati	NBC	Hearst-Argyle Television, Inc	Cincinnati	32	
	WEWS	Cleveland	ABC	Scripps Howard Broadcasting	Cleveland	15	
	WJW	Cleveland	FOX	Fox Television Stations Inc.	Cleveland	15	
	WKYC	Cleveland	NBC	Gannett Broadcasting	Cleveland	15	
	WBNS	Columbus	CBS	Dispatch Broadcast Group	Columbus, Oh	34	
	WMFD	Mansfield	Pure Independent	Meisse Broadcasting	Cleveland	15	
	WOIO	Shaker Heights	CBS	Raycom Media Inc.	Cleveland	15	
				9			81
OK	KFOR	Oklahoma City	NBC	New York Times Co. Bcstg.	Oklahoma City	45	
							1



State	Calls	City	License	Network	Group	Organization	DMA Name	DMA Rank
TN	WKPT	Kingsport	1	ABC	Holston Valley Broadcasting	Tri-Cities, Tn-Va		92
	KXAN	Austin		NBC	LIN Television Corporation	Austin		61
	WFAA	Dallas		ABC	Belo Corporation	Dallas-Ft. Worth		7
	KDFW	Dallas		FOX	Fox Television Stations Inc.	Dallas-Ft. Worth		7
	KERA	Dallas		PBS	North TX Public Broadcastin	Dallas-Ft. Worth		7
	KDAF	Dallas		Warner Bros.	Tribune Broadcasting Compa	Dallas-Ft. Worth		7
	KTVT	Fort Worth		CBS	CBS Television Stations	Dallas-Ft. Worth		7
	KXAS	Fort Worth		NBC	NBC Television Stations Divi	Dallas-Ft. Worth		7
	KTXA	Fort Worth-Dalla		United Paramount Net	CBS Television Stations	Dallas-Ft. Worth		7
	KTRK	Houston		ABC	ABC Broadcast Group	Houston		11
	KHOU	Houston		CBS	Belo Corporation	Houston		11
	KRIV	Houston		FOX	Fox Television Stations Inc.	Houston		11
KPRC	Houston		NBC	Post-Newsweek Stations, Inc.	Houston		11	
								12
UT	KBYU	Provo		PBS	Brigham Young University	Salt Lake City		36
	KTVX	Salt Lake City		ABC	Chris Craft/United Television	Salt Lake City		36
	KSL	Salt Lake City	3	NBC	Bonneville International Corp	Salt Lake City		36
								3
VA	WCYB	Bristol	1	NBC	Lamco Communications, Inc.	Tri-Cities, Tn-Va		92

State	Calls	City	Of License	Network	Group Organization	DMAName	DMARank
WA	KOMO	Seattle		ABC	Fisher Broadcasting Inc.	Seattle-Tacoma	12
	KIRO	Seattle		CBS	Cox Television	Seattle-Tacoma	12
	KING	Seattle		NBC	Belo Corporation	Seattle-Tacoma	12
	KCTS	Seattle		PBS		Seattle-Tacoma	12
	KXLY	Spokane		ABC	Morgan Murphy Stations	Spokane	78
	KCPQ	Tacoma		FOX	Tribune Broadcasting Compa	Seattle-Tacoma	12
	KPDX	Vancouver		FOX	Meredith Corporation Broadc	Portland, Or	23
							84
WI	WKOW	Madison		ABC	Shockley Communications C	Madison	85
	WISC	Madison		CBS	Morgan Murphy Stations	Madison	85
	WTMJ	Milwaukee		NBC	Journal Broadcast Group, Inc.	Milwaukee	33
	WMVS	Milwaukee		PBS		Milwaukee	33

7

4



## Exhibit B



### **Resolution of the MSTV Board of Directors and the NAB Television Board**

**January 15, 2001**

With the support of 30 major broadcast organizations and the oversight of technical committees consisting of some 25 engineers representing all major technical viewpoints, the broadcasting industry concluded a comprehensive, objective and expedited series of studies and tests to determine whether COFDM should be added to the current 8-VSB standard.

We conclude that there is insufficient evidence to add COFDM and we therefore reaffirm our endorsement of the VSB standard.

We also conclude that there is an urgent need for swift and dramatic improvement in the performance of the present U.S. digital television system.

We therefore will take all necessary steps to promote the rapid improvement of VSB technologies and other enhancements to digital television and direct the staffs to develop a plan and promptly submit it to the Boards.

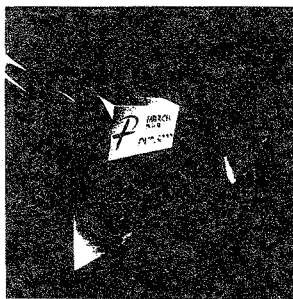
Contact: Dennis Wharton  
(202) 429-5350

# Exhibit C

DTV Products by Greg Tarr Courtesy of TWICE

Digital TV Set Top Decoders (continued from page 19)									
Model	DTV Formats (Input & Output)	Scam Conversion (Input > Output)	HD Interface for DTV (HDMI, DVI, Component, RGB, Y/Cb/Cr)	Includes NTSC Receiver	Includes NTSC LIP (Line Interlace Processing)	Built-In Dolby Digital Decoder	IEEE 1394 (i-Link) Interface	Date Available	Comments
TBA		Switchable: All Formats-480i All Formats in Native Form, 720p-480p, 1080i-480p 480i-480p	HD Component (Y/Cb/Cr)	No	No	Yes	No	TBA	
DTC100*		Switchable: All Formats-480i All Formats-540p, 720p-1080i, 1080i-1080i	HD Y/Cb/Cr	Yes	No	Yes	No	Now	
SIR-T100		Switchable: All Formats-480p All Formats-1080i	HD Component	No	No	Yes	No	Now	
SIR-T150		Switchable: All Formats-480p All Formats-720p All Formats-1080i All Formats-NTSC Line doubles NTSC	HD Component	No	No	No	No	Now	
SIR-TS200*		Switchable: All Formats-480p All Formats-720p All Formats-1080i All Formats-NTSC Line doubles NTSC	HD Component	No	No	No	No	Fall-01	
SAFH100**		Switchable: All Formats-480i All Formats-1080i	HD Component	Yes	No	No (DD compatible)	No	01-01	
DST-3000*		Switchable: All Formats-480i All Formats-1080i	HD Component, Y/Cb/Cr	Yes	No	Yes	No	Jan-01	
10DTV-1080*		All Formats-1080i, 720p, 480p, 480i, All Formats-NTSC	HD Component, RGB via Y/Cb/Cr	Yes	No	Yes	No	01-01	TBA

\* Also receives DirecTV standard and HD satellite services.  
 \*\* Also receives Dish Network standard and HD satellite services.  
 \*\*\* Receives HD signals from digital D-band satellites.



## Faroudja DVP5000

Faroudja's new flagship DVP5000 Digital Video Processor/Scaler upconverts HDTV signals to 1080p resolution.

**DTV Products** by Greg Tarr Courtesy of TWICE

Model	Inputs (Analog/Digital)	Scan Conversion (Input > Output)	Internal Processor	Included NTSC Receiver	Has Upgradeable Expansion Slot For Add-on Terrestrial NTSC/ATSC Tuner modules	Dolby or Dolby Digital Decoder	Power Available
Adaptor module for Dish 5000**		Passes Uncompressed HD Signal In Format Received	None	No	No	No	
6000**	Composite, S-Video, Component	All Formats-480p All Formats-1080i All Formats-720p	Real Time H.264/AVC, MPEG-2, MPEG-4, H.264/AVC, H.264/AVC, H.264/AVC	Has Upgradeable Expansion Slot For Add-on Terrestrial NTSC/ATSC Tuner modules	Yes (2 Channel)	No	
HD2000	Composite, S-Video, Component	Selectable: All Formats-480p All Formats-720p All Formats-1080i	Real Time H.264/AVC, MPEG-2, MPEG-4, H.264/AVC, H.264/AVC, H.264/AVC	No	No	No	
HDV-4800	Composite, S-Video, Component	All Formats-480p All Formats-1080i	Real Time H.264/AVC, MPEG-2, MPEG-4, H.264/AVC, H.264/AVC, H.264/AVC	Yes	No	No	
HD100	Composite, S-Video, Component	HD Formats-1080i SD Formats-480p	Real Time H.264/AVC, MPEG-2, MPEG-4, H.264/AVC, H.264/AVC, H.264/AVC	No	No	No	
HD2000	Composite, S-Video, Component	All Formats-480p All Formats-1080i All Formats-720p	Real Time H.264/AVC, MPEG-2, MPEG-4, H.264/AVC, H.264/AVC, H.264/AVC	No Upgradeable Expansion Slot For Add-on Terrestrial NTSC/ATSC Tuner modules	No	No	
HD4000	Composite, S-Video, Component	All Formats-1080i	Real Time H.264/AVC, MPEG-2, MPEG-4, H.264/AVC, H.264/AVC, H.264/AVC	No	Yes (2 Channel)	No	
HD7000	Composite, S-Video, Component	Selectable: All Formats-480p All Formats-480p All Formats-720p All Formats-1080i	Real Time H.264/AVC, MPEG-2, MPEG-4, H.264/AVC, H.264/AVC, H.264/AVC	Yes	Yes (2 Channel)	No	
SR-HD3000	Composite, S-Video, Component	All Formats-480p All Formats-1080i	Real Time H.264/AVC, MPEG-2, MPEG-4, H.264/AVC, H.264/AVC, H.264/AVC	Yes	Yes (2 Channel)	No	
SR-HD4000	Composite, S-Video, Component	All Formats-480p All Formats-1080i	Real Time H.264/AVC, MPEG-2, MPEG-4, H.264/AVC, H.264/AVC, H.264/AVC	Yes	Yes (2 Channel)	No	
TM-HD2000	Composite, S-Video, Component	All Formats-Any Output Selected	Real Time H.264/AVC, MPEG-2, MPEG-4, H.264/AVC, H.264/AVC, H.264/AVC	Yes	No	No	
TU-02000	Composite, S-Video, Component	N/A	Real Time H.264/AVC, MPEG-2, MPEG-4, H.264/AVC, H.264/AVC, H.264/AVC	N/A	N/A	N/A	
SH-2000	Composite, S-Video, Component	Selectable: All Formats-480p All Formats-720p All Formats-1080i	Real Time H.264/AVC, MPEG-2, MPEG-4, H.264/AVC, H.264/AVC, H.264/AVC	No	No	No	
SH-2000	Composite, S-Video, Component	Selectable: All Formats-480p All Formats-1080i All Formats-480p	Real Time H.264/AVC, MPEG-2, MPEG-4, H.264/AVC, H.264/AVC, H.264/AVC	No	No	No	
SH-2000	Composite, S-Video, Component	Selectable: All Formats-480p All Formats-540p All Formats-720p All Formats-1080i	Real Time H.264/AVC, MPEG-2, MPEG-4, H.264/AVC, H.264/AVC, H.264/AVC	Yes	Yes	No	

\* Also receives DirecTV standard and HD satellite services  
 \*\* Also receives Dish Network standard and HD satellite services  
 \*\*\* Receives HD signals from digital C-band satellites

continued on page 24

DTV Products by Greg Tarr Courtesy of TWICE

**Integrated High-Definition TV Sets**  
(Digital Decoder Included)

Brand	Model	Display Type	Screen Size	Aspect Ratio	Native Scan Format	Scan Conversion	Line Doubling For HTSC?	Built-In AC-3 Decoder?	IEEE 1394 Digital Interface	Date Available	Suggested Retail Price
Daewoo	DSP-3000W	Pana Flat Direct View	30W"	16:9	1080i	All Formats-1080i	Yes	Yes	No	Now	\$2,999.95
Hitachi	61HDX983*	7" CRT Rear Projection	61W"	16:9	540p, 1080i	NTSC-540p 480i-540p 480p-540p 720p-1080i 1080i-1080i	Yes	Yes	No	Now	\$5,999.99 (includes dish)
Hitachi	61HDX01W*	7" CRT Rear Projection	61W"	16:9	540p, 1080i	NTSC-540p 480i-540p 480p-540p 720p-1080i 1080i-1080i	Yes	Yes (includes HD component parts)	No	TBA	\$5,999.99 (includes dish)
Konka	HD3028U	Direct View	30W"	16:9	1080i	All Formats-1080i	Yes	Yes	No	TBA	\$3,499.99
Konka	HD3498U	Direct View	34W"	16:9	1080i	All Formats-1080i	Yes	Yes	No	TBA	TBA
Mitsubishi	HD6450W	9" CRT Rear Projection	64W"	16:9	525p, 1080i	NTSC-525p 480i-1080i 480p-1080i 720p-1080i 1080i-1080i	Yes	Yes	No	Now	\$1,999.99
Philips	64PH8905	9" CRT Rear Projection	64W"	16:9	525p, 1080i	NTSC-525p 480i-1080i 480p-1080i 720p-1080i 1080i-1080i	Yes	Yes	No	Now	\$9,999.99
Proscan	PS65000*	7" CRT Rear Projection	65W"	16:9	540p, 1080i	NTSC/All Component/480i-480p 480p Component 480i-480p SD 480i/480p-540p ATSC HD 1080i/720p-1080i DIRECTV HD-1080i	Yes	Yes	No	Now	\$5,299.99
Proscan	PS34000* Performax	Direct View	34W"	16:9	540p, 1080i	NTSC/All Component/480i-480p 480p Component 480i-480p SD 480i/480p-540p ATSC HD 1080i/720p-1080i DIRECTV HD-1080i	Yes	Yes	No	TBA	\$3,499.99
Proscan	PS38000* Performax	Direct View	38W"	16:9	540p, 1080i	NTSC/All Component/480i-480p 480p Component 480i-480p SD 480i/480p-540p ATSC HD 1080i/720p-1080i DIRECTV HD-1080i	Yes	Yes	No	Now	\$3,999.99
RCA	F8310* Performax	Direct View	38W"	16:9	540p, 1080i	NTSC/All Component/480i-480p 480p Component 480i-480p SD 480i/480p-540p ATSC HD 1080i/720p-1080i DIRECTV HD-1080i	Yes	Yes	No	Now	\$3,799.99
RCA	F61310*	7" CRT Rear Projection	61W"	16:9	540p, 1080i	NTSC/All Component/480i-480p 480p Component 480i-480p SD 480i/480p-540p ATSC HD 1080i/720p-1080i DIRECTV HD-1080i	Yes	Yes	No	TBA	\$4,999.99
Samsung (Rear Projection)	HJ3555W	7" CRT Rear Projection	55W"	16:9	1080i	All Formats-1080i	Yes (includes HD Component)	Yes	No	Now	\$5,999.99
Samsung (Rear Projection)	HJ3555W	9" CRT Rear Projection	65W"	16:9	1080i	All Formats-1080i	Yes (includes HD Component)	Yes	No	Now	\$9,999.95
Sony	KWP-69HD1	9" CRT Rear Projection	69W"	16:9	960i, 480p, 1080i	NTSC-960i 480i-960i 480p-960i 720p-1080i 1080i-1080i	Yes (part)	No	No	Now	\$9,999.99
Sony	KW-34HD1	Direct View	34W"	16:9	960i, 480p, 1080i	NTSC-960i 480i-960i 480p-960i 720p-1080i 1080i-1080i	Yes	No	No	Now	\$6,499.99
Zenith Info	10B64W10W	6" CRT Rear Projection	64W"	16:9	1080i	All Formats-1080i	Yes (includes HD Component)	Yes	No	Now	\$9,999.99
Zenith Info	10B56W10G	7" CRT Rear Projection	56W"	16:9	1080i	All Formats-1080i	Yes (includes HD compatible video)	Yes	No	Now	\$8,499.99

\*Also receives DirectTV stacked and HD satellite programming  
20 January 2001 DTVGuide

Mr. UPTON. Well, thank all of you for your testimony this morning and into this afternoon. I know the organizations that you represent must feel very proud about your presentations and your remarks made this morning.

There has been a lot of discussion about having a mandate passed along to the consumer to take advantage of the digital broadcasting. And I want to explore that a little bit this afternoon.

Mr. Arland, in your remarks, as you talked about particularly the TVs, we were able to see a demonstration this morning. Those same arguments were made with regard to the V-chip, something that the Congress adopted that is now in a number of sets, obviously every set being sold across the country. We have it at my house, I know.

One of the arguments against the V-chip was the cost, but, in fact, because of the mandate that was approved in both the House and the Senate, as I understand it, the cost came down to about 25 cents, something along that magnitude.

Wouldn't that same parallel happen with a mandate on TV sets if you use the proposals that the FCC is taking a look at along with I think the NAB support as well above 32 inches?

Mr. ARLAND. Mr. Chairman, I am not going to plead the Fifth, but I am going to turn to my attorney because I had a prop I wanted to show you. We suspected this issue might come up. So I thought I would bring to the attention of the committee an example of what is required to, quote, "build in a digital tuner." It is much more than just a tuner. These are the circuit boards inside the DTC 100, which is the affordable set-top that you saw earlier, as well as the same circuits that are inside our integrated HDTV set.

And it is more than just the tuner. The tuner for both digital and analog television is here in this box. You need a VSB reception chip, which we have all heard a lot about over the last year or so. Thankfully, that is put behind us, and I think it will lead to more integrated sets.

You need an MPEG decoding chip to decode this technology so that it can be displayed. You need memory for that. You need a system microprocessor. This is where the V-chip is located. The V-chip, by the way, was an extension of a chip that already existed in the television set. You need audio chips. You need memory. So, again, the expense we think by the end of next year, we could get down to about a \$200 premium over what is available today in analog.

And the price will come down. I guess it all comes down to: How long are you talking about? Our next generation of this product will integrate many of these chips together so that we can reduce costs and reduce prices. No one is more interested in selling digital television and selling affordable digital TV than me and my industry, but we can't do this overnight to bring the cost to zero.

Mr. UPTON. Would anybody else like to comment about what the cost might be? Mr. Weed?

Mr. WEED. Well, I would just like to comment. Where is the QAM chip, which is our standard? I didn't see that in there.

Mr. ARLAND. As soon as I have a build-to specification, that will be the next thing that goes on the board, sir.

Mr. WEED. Great. Really, in reference to earlier comments, the last thing, having completed my capital budget, the last thing I want to do is buy digital boxes for all of my customers. I would much rather have the customers buy it themselves as part of their TV set and would love to see the QAM chip in that module there.

Mr. UPTON. Mr. Paxson?

Mr. PAXSON. Well, you know, a lot of us have a digital television set in our home now. It is called the PC. And if we want to get our analog television stations onto our digital PC set, we do it by buying a card. And that card has a retail price now dropping in the \$60 range. And I think the manufacturing cost is somewhere around 15 to 20 dollars.

So I think there are differences of opinion on exactly what is needed in order to comply with the 85 percent rule that we are living with under this conversion mandate. In other words, we have to have in a house able to have a digital television receiver that receives an analog signal and convert it to digital or we have to have a box on top of the old analog set that will take the digital and convert it down into analog.

And I think the example that I use here is a picture of what can be accomplished in the marketplace. I suspect RadioShack will have those kinds of products available to its consumers, which will help us get into this digital conversion.

Mr. UPTON. Before I go to NAB, so let me just confirm that. So what you are suggesting is that the box itself is about 15 or 20 dollars versus built into the set, where it is going to be considerably more?

Mr. PAXSON. In the case of the digital PC that you have in your home and you want to get an analog picture from an analog television station onto that PC, you need to buy a card. The card is under \$60 now. I am not sure of the exact price of manufacturing, but I would suggest that it is probably in the 15 or 20-dollar range.

So we are converting. We can convert an analog signal onto one of these HDTV sets fairly inexpensively. If we can do it with the computer, why can't we do it with the television?

I think the opposite is true. We have sold 33 million analog TV sets in America last year. To state to the consumer that those are going to be outdated, he can't use them anymore, he has made a terrible investment, and by 2006, he is going to have a crowd of people outside here.

Mr. UPTON. I know.

Mr. PAXSON. And there can be a box that would receive the digital signal and convert it to analog so his television set doesn't become outmoded. And those are available products. The technology I have is going to come out of manufacturers who supply companies like RadioShack.

Mr. UPTON. Mr. Tucker?

Mr. TUCKER. Mr. Upton, I am not an expert and I didn't bring any technologists with me to look at that, but I am pretty impressed by Mr. Arland's display.

I would say that what we have looked at is that as those components get introduced, if we can follow any history of what is happening in consumer electronics, I would anticipate that any changes will become de minimis over time and as products roll out.

So I don't expect that chip to be so expensive where it will drive prices up at all.

Mr. ARLAND. And I would agree with that statement. They word there is "over time." Mr. Paxson raises the idea of a tuner. Again, that would be what is in this box. The tuner for a PC, don't forget, utilizes the memory chips inside the PC to operate. And that is the other green stickers that you see on this board.

Mr. UPTON. Okay. Thank you.

I guess we go to Ms. Eshoo.

Ms. ESHOO. Thank you, Mr. Chairman.

I want to direct my question to Mr. Paxson and Ms. Courtney and Mr. Tucker. And thank you, everyone, for your testimony because it is enlightening.

The deal that was struck with the Telecomm Act, was that when the penetration was achieved at 85 percent that there would be an entitlement to only mandatory coverage of your primary video fee? Is this is the case and we can assure the public that it gets its benefits of the other megahertz, what can we do to assure that consumers get this over the air? What kinds of things do you think that we should be doing to help achieve this? I mean, are there ways that we can help make sure the consumers have access over the air to your multicasted channels, for example, with stronger receiver reception standards and dual tuning requirement? Would that be effective?

I understand in many ways—and I don't say this disparagingly—kind of the food fight that is going on because there are investments that have been made in this. The cable industry has invested billions, broadcasters obviously not as much for a whole set of reasons. What is it that we can do to move this forward?

I said in my opening statement today that something is not working. Something is not working. You know, I mean, I love seeing this in the hearing room, but I still don't know who has it in their living room. I appreciate the \$3,000 price tag. I don't know what the payment plan is and what you throw in, an additional, maybe a set of knives or whatever.

What is it that we can do? What is it that we can do to help move this along in a fair way? What are the tools that you think are needed to be placed in the tool kit that the Congress can help make happen? We made a commitment along with you, but enlighten us. What do you think would be fair?

They must be good questions if everybody is pointing to everybody else. Thank you. No one wants to be first one out of the box.

Ms. COURTNEY. Well, first I think that the FCC ruling—and I am not an attorney, and there are a lot of attorneys—

Ms. ESHOO. neither am I. That is all right.

Ms. COURTNEY. This primary video service, I think this really undercuts the whole concept of the multicast service we were trying to have for education. I mean, if I can only choose one as that interpretation, our attorneys suggest it may have been an incorrect interpretation. So we ought to sort that out.

Did Congress mean that? Did the FCC misinterpret it? Do you want us to multicast? And I think you want public broadcasting. I would suggest that you want us to. And there needs to be come

direction so that we can both do adult learning and K-12 and a variety and not just choose.

So we really need some help with that FCC interpretation that just says primary means one video. We really need help in that. From our perspective—

Ms. ESHOO. I only have 5 minutes, though, total. So I appreciate what you are saying. Maybe the others can be succinct in giving some help.

Mr. TUCKER. Ms. Eshoo, I agree, in part, with what was just said. I don't say that we are dealing with trying to deliver the whole six megahertz. We are in the business of aggregating eyeballs. We need as many people watching our television stations as possible.

So we need an over-the-air as well as an integrated program service experience to cable viewers as well. We need access to them. They have received their signals or programming via cable.

In times of natural disasters,—and we just had an earthquake in Seattle—there is still a reliance on the Emergency Broadcast System there. We want to make sure that those kinds of services continue in the digital realm as well.

Ms. ESHOO. Well, let us assume that the FCC opinion stands. How can we help make sure that multicasted signals get to people in their homes over the air?

Mr. PAXSON. Well, if I may, I would like to try to answer your question fairly quickly. Cable and satellite are the gatekeepers to the American television set. The 1992 Cable Act requires the full carriage of the station's signal.

What that act also said was that in the area of advanced television, which now is coming forth, known as digital television, in advanced television, the FCC was to address the technical issues but see to it of the full must carriage of the station's signal.

We had six megahertz in analog. We have six megahertz in digital; in analog, one program service, the ability to do multiple channels of programming service in the digital world.

Right now the law says and the FCC has mandated that if the station broadcasts in HDTV using the entire digital signal that it has, that signal must be carried by cable. They can compress it. Well, multicasting should be no different. The cable operator can compress the digital signal down into three megahertz of cable spectrums. Therefore, the broadcaster will be using less cable spectrum in the digital world than he is now using in the analog world.

And the must carry law must be content-neutral. Free over-the-air content should not be censored by the cable operator, the Congress, or the FCC.

And I finally would just draw your attention to the Congressional Budget Office that said recently: A strong must carry requirement for cable systems to carry digital television will be necessary to meet the mandatory transition deadline.

Mr. WILLNER. Congresswoman, do you mind if I jump in on this? I know you didn't address the question to me, but—

Ms. ESHOO. You have to ask the Chairman because I see the red light is on. But if it is in response to a question, I hope that he will give you the time.



Mr. UPTON. You set a good diversion up here for me to talk to another member.

Ms. ESHOO. That is right.

Mr. UPTON. I am sorry. But what is the question?

Ms. ESHOO. He wants to help answer the question, and the red light is on.

Mr. UPTON. Go ahead. No, no. Go ahead.

Mr. WILLNER. Thank you, Mr. Chairman.

I just wanted to suggest that the concept of must carry, as suggested by this body and by the FCC, was never a management of bandwidth that we have invested in. It was the provision to ensure that important local broadcasting services, like the Emergency Broadcast Service, would be continued in every community.

You don't need to do those things over six different channels. Using six different channels is a commercial endeavor, one intended to go into competition with people who invest hundreds of millions of dollars in new programming networks and then come and ask for carriage to cable operators to carry.

Ms. ESHOO. Anyone else want to comment on the question?

[No response.]

Ms. ESHOO. Thank you, Mr. Chairman.

Mr. UPTON. Thank you.

Mr. Stearns?

Mr. STEARNS. Thank you, Mr. Chairman.

You might think there are not a lot of members. You have all of this heavy brass here. We might want to go for a second round. I don't know.

Mr. UPTON. Yes.

Mr. STEARNS. Oh, good. Okay. Mr. Willner, let me just ask you something concerning the six megahertz. I am a broadcaster, and I am going to give you a high-definition signal. So you will take the whole high-definition if it takes a full six megahertz. Okay?

But then what happens, instead of the six megahertz, I give you a video stream and it is a primary video. Then I can't send you any other signals, as your position would be, because you are saying that is multicasting. But you will take my whole high-definition, but you won't take my other multicast videos.

So what happens to that other part of the spectrum? How is that going to be used? And is that yours or what do you do with it?

Mr. WILLNER. Well, we have invested nearly \$50 billion to build that spectrum now on our own using our own funds, but certainly we would expect and hope that the broadcasters would come to us with a business plan that would reflect what they would like to do on those multiple channels.

And if it is in the interest of our subscribers, who are the people who pay us every month, to carry those signals, we would want to, but to give broadcasters—

Mr. STEARNS. Carte blanche.

Mr. WILLNER. [continuing] an advantage over cable networks and other people who are developing new programs to deliver money-making multiple services, that would just be inherently unfair in our view. And that is why we would want to have a negotiated deal.

I would also add, if I could just say one more thing, Congressman——

Mr. STEARNS. Sure.

Mr. WILLNER. [continuing] that if you force must carry multiple signals, it disincentivizes consumer-oriented programming because they get carriage for nothing. So they don't have to worry about whether or not we are going to look at that in terms of viewership and customers wanting that product. It is the opposite of pushing people into buying digital television sets.

Mr. STEARNS. Yes. So you are trying to encourage the broadcasters to provide a high-definition. But I think what we are all on the staff having a little trouble with is: When they come to you, how do you go back and forth between high-definition television and the standard one megahertz? I mean, how do you do that?

Mr. WILLNER. Do you mean technically?

Mr. STEARNS. Yes, technically.

Mr. WILLNER. I would have to check with how we do that technically. I am not as——

Mr. STEARNS. You know, I was involved with the must carry debate during the analog. And so when it moves to digital high-definition, I respect your position.

On the other hand, Paxson Communications would not exist today if must carry hadn't succeeded under analog. So his position is saying, "Well, we have got to have must carry under today's requirement." And so I understand you will take the six megahertz. Fine. But if he wants to do these primary videos, you won't. Your argument is let us negotiate it.

Mr. WILLNER. As I said earlier, must carry was never intended to be a management tool of ours fully invested in bandwidth. It was intended to protect the interests of local broadcasters. And that is fine. I understand the government's position on that.

Mr. STEARNS. Okay. Have you negotiated with any broadcaster to solve this must carry on a voluntary basis?

Mr. WILLNER. To solve?

Mr. STEARNS. Digital must carry.

Mr. WILLNER. Yes.

Mr. STEARNS. I mean, what you are recommending is we just let——

Mr. WILLNER. We just did a deal with Lynn Broadcasting in Indianapolis to carry the NCAA games, which is multiple channels.

Mr. STEARNS. Right.

Mr. WILLNER. It is not high-definition. That is compelling programming. We want to carry that. It is a wonderful idea.

Mr. STEARNS. So you have a paradigm with Lynn Communications that you have worked out or that you think could be worked out?

Mr. WILLNER. Absolutely.

Mr. STEARNS. Okay. Mr. Paxson, would you want to comment on this?

Mr. PAXSON. Well, I think that if we look back at the 1992 Cable Act, the day before it was enacted, between that period and now, we have added almost 550 television stations to the landscape of America. In addition to that, after the Must Carry Act was enacted, we added a bunch of new television networks: the Fox; WB; UPN;

of course, PAX; Telemundo; Azteca; and Univision all have come into existence. I think that is good management.

I think the FCC was mandated in the 1934 Act to see to the highest and best use of the spectrum. If for some of us the highest and best use of the spectrum is to create multiple program channels of family programming, then this whole Must Carry Act should be content-neutral. And the cable industry says they will negotiate multicast must carry. To cable, negotiate means collect from the broadcaster and then turn around and collect from the subscriber.

And after 4 years, let us look at the record. AT&T has done every transmission agreement with Fox and NBC. Time Warner with CBS and ABC just announced a retransmission agreement. These agreements only cover their own and operated stations.

Thus, about 90 television stations in America have solved their digital must carry issues with cable by retransmission consent agreements. One thousand, five hundred and sixty of us still await the required full digital must carry.

Mr. STEARNS. Mr. Arland, I have a few seconds left. All of my computers I can get a video off television. So it is simply taking the analog and putting it into my computer. There is a little thing you just drop in. And, bingo, it is on my screen. So it seems so easy. Yet, I find we are not getting this sold in the market.

So my question is, I guess, I mean, I am just puzzled why I can get television on my computers digitized and I can't get it at home at an economical? Am I missing something?

Mr. ARLAND. You are not missing anything. You can get affordable analog television with the PC card today.

Mr. STEARNS. Right.

Mr. ARLAND. To Mr. Paxson's point, you can do that as well with digital with a slightly more expensive card. Remember that you are using all the processing power of your computer to make that happen, however.

We have to replicate that power because of the complicated standard that we have which does terrific things, as we saw today, but is not easy when we do a set-top box or an integrated television set. As well, you could plug in your computer monitor to our set-top box. It doesn't have to be plugged into an old TV. It can be plugged into your computer as well, either way.

I think costs will come down, but it will take a little bit of time.

Mr. STEARNS. Okay. Thank you, Mr. Chairman.

Mr. UPTON. Thank you, Mr. Stearns.

Ms. Harman?

Ms. HARMAN. Thank you, Mr. Chairman.

I want to note how excellent the short broadcasts we had were, both of television, the television networks, and their content but also of public television. It excites me that public television is able to offer excellent programming in this new format.

I just want to recognize the presence, as someone else has, of my good friend Sharon Rockefeller, who has done so much to lead WETA in the Washington area.

I want to go back to a subject I raised in my opening remarks. And that is the disparity between the treatment of cable and satellite signals and the treatment of broadcast signals. It seems to

me that different treatment is wrong. It also seems to me that different treatment will drive down the content that is offered on broadcast and could also delay the acceptance by consumers by this wonderful new technology.

So I would like to ask my good friend Mr. Franks first what he thinks about what I just said and anyone else in the short time that I had to also comment.

Mr. FRANKS. Thank you, Congresswoman.

In my prepared statement, I addressed this briefly. We have as over-the-air broadcasters a great fear that if the copy protection scheme is not extended to over-the-air broadcasts, it is simply inevitable that the high-value program—if last night's "Survivor" can be immediately streamed onto the Internet, then it loses all of its residual after-market value.

I realize that there are considerable technological hurdles that have to be resolved, although I think they can be resolved much sooner, rather than later. And it is only, frankly, since the letter authored by the Chairman and other notable members of this committee that drew attention to this issue that we have been able to draw much interest or cooperation from the other side on this question. You have certainly done a lovely job of focusing their attention in the last several weeks. We have probably made more progress in the last several weeks than we have made in the previous 5 years.

Ms. HARMAN. Thank you.

Does someone on the panel have the opposite view? I think it would be important for the record to hear this. Yes?

Mr. COOKSON. I would like to comment that we share the concern that we would like to see broadcast television protected. The problem is that the problem faced by broadcast television is different from the problem faced by cable and satellite, where there are conditions attached to your ability to receive it. And those conditions can be used to provide levels of copy protection or control over copying.

Where something is delivered in the clear, it doesn't have the opportunity to have that same technical solution. So what we are concerned about is that when somebody says, "We want the same level of protection," the way you can do that is hamstringing the one that is protectable to make sure that nobody has an advantage.

We would prefer not to do that. We would prefer to continue to work diligently to find the solution for a different problem while rolling out the solution that is available.

Ms. HARMAN. I would just like to comment that I think that is a rational objection, but it doesn't go to the fairness argument. It only goes to whether the technological fix should be the same.

I am not arguing that the fix should be the same, but do you agree with me that if we have intellectual property in one case and we have it in the other case that both deserve protection?

Mr. COOKSON. I believe that both deserve protection. The problem is that if we are anxious to get the deployment quickly in to bring new materials into the marketplace and to get earlier availability of motion pictures and new programming. We don't want people to be conscious about putting these things into distribution because there is no way of protecting them.

Because broadcast doesn't know how to protect it and we haven't figured it out yet, to tell everybody else "You can't protect artificially" will cause a delay I think that we don't want to face.

Ms. HARMAN. Well, I don't think that is what I was arguing. I am arguing for protection of private property. We have to figure out ways to do this. This issue is going to come up again and again on this committee.

You can call it the Napster issue. You can call it anything you want. But we have to find ways to embrace technology and at the same time protect private property rights. And I think the answers are in technology, not building barricades.

So I would just encourage all of us and certainly those who are testifying who are far more knowledgeable than I to get on with it so that we can make sure that the content available in these new formats is as expansive as possible.

We should not shut off a very good source of content by broadcasters who fear, just as Mr. Franks said, that they will lose their ability to protect their content.

Thank you, Mr. Chairman. I see my time is up.

Mr. UPTON. Thank you.

Mr. Shimkus?

Mr. SHIMKUS. Thank you, Mr. Chairman.

What I would suggest that our panel do after the hearing is we kick out all the guests and we kick out all the members and you all without your lawyers sit down and resolve some of these conflicts because what you are going to invite, especially there are some heated differences there. And what you invite is you invite government intervention. You almost invite some reregulation.

So I would suggest you be very, very careful in that you do the work that you all need to do to move forward and not encourage us to get involved. And that means compromise. And we are experts at compromise here in Washington, not always successfully. But that is what you are going to have to get.

I mean, I could throw out a lot of red meat here a la the former chairman of the subcommittee liked to do, throw something on the table like the \$7 billion giveaway, and have you guys just fight over that for a little while or the new one is a QAM chip. Some people raised their arm on the QAM chip. I don't even know what the QAM chip is.

But, yet, you fight over that for a while or we can do the issue of the Napster-type debate on who owns what property and how with digitals. I mean, we can do that, but you all need to that. I am just throwing that out as a word of caution because there are diversions used here. But it is one family, and it is a family fight. Family fights can get reconciled. If they don't get reconciled, they are almost enemies forever, words of advice from a very young person. And I understand.

Let me ask some questions that are probably a lot easier than to let you fight those things out just for my clarification. I should know these answers, but since I don't remember them.

Mr. Franks, you are broadcasting in 1080I. I remember hearing here where we had the different little standards. That was a couple of years ago. And that is the best picture.

Mr. FRANKS. It is the best picture that we can fit into six megahertz.

Mr. SHIMKUS. Correct. Does that prohibit you from multicasting because you are doing the best picture that can fit into six megahertz?

Mr. FRANKS. In order to multicast, we would have to use some of the—

Mr. SHIMKUS. Some of them, right.

Mr. FRANKS. So yes. I mean, in Indianapolis today, as was mentioned, instead of showing one basketball game, we have given our affiliate the permission to show all four that are going on at the same time. So they are subdividing their 19.2 megabits, which fits into their 6 megahertz into fourths.

Mr. SHIMKUS. I asked that question because here is an example. There was some talk years ago about setting a Federal standard. I think you all said "We want to market the best, clearest picture."

Mr. FRANKS. No. If I may, I think it would be a mistake. We like our HD.

Mr. SHIMKUS. Right.

Mr. FRANKS. But it would be a mistake necessarily to mandate a certain level of HD that already had—

Mr. SHIMKUS. Well, I think we agree with that, but there was a debate here. And that is why we had the different standards. And the issue was because we want to move to education TV, we want to use PBS. And multicasting was supposedly a critical component, although some people said no. I think we let the market—

Mr. FRANKS. I think we are in such an early stage of this transition for consumers. We are in a situation. CBS' strategy, we are going to go ahead with HD until the viewers tell us they don't want us. It may well be that our viewers are going to say, "You know what? We don't care as much about 1080I. We would rather have you rerun 'CBS News' on a subchannel and show your prime time entertainment in a lesser definition of digital television" or we don't—

Mr. SHIMKUS. And I agree. I am not—

Mr. FRANKS. CBS only gets rewarded if our viewers tune in. We don't get paid week in and week out, month in and month out, if they don't tune in.

Mr. SHIMKUS. Right. And I agree with that, but I am just harking back to old days and the cautionary tale about where government can move. How does the 1080I and the use of the full spectrum versus the multicasting affect the cable operators? Does it have any effect on you?

Mr. WEED. Yes. We are using the QAM standard to stream our video. We would have to convert to a QAM standard to run on our digital system.

Mr. SHIMKUS. Tell us what that means in English.

Mr. WEED. We would have to spend a bunch of money at the head end, which is our main receive point, to convert from their standard to ours so it would work on our digital boxes.

Mr. WILLNER. The reason that we do that, Congressman, the reason that we do that, is it is a much more efficient use of that very expensive bandwidth.

Mr. SHIMKUS. I learned something new today. My time has expired, Mr. Chairman. I thank you and yield back. Thank you.

Mr. UPTON. Mr. Markey?

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

Again, I want to get back to this question. I know that you touched upon it earlier, Mr. Chairman, of what it will take in order to make it possible for us to telescope the timeframe that it will take in order to make this transition by ensuring that any TV set sold in the United States has the capacity to receive an analog or, for that matter, a digital signal depending on what set is being sold.

I would just like a little bit of insight from the people who are here because obviously back in 1990, when we were having hearings here on closed captioning, I was told it was going to cost \$30 a TV set and on the V-chip, I was told it was going to cost \$25 per TV set. And by the time I was finished, it all came down to a single chip and maybe \$1 for both of the services to be provided, \$1.50.

So in every other area of this industry, we have Moore's law applying, where every technology becomes more powerful and less expensive as each 18-month period goes by.

Testimony doesn't quite reflect that when we come to television, although I do always find that Markey's law does apply, which is notwithstanding what the testimony says, to some kid in Osaka or Beijing who realizes that at 30 million TV sets apiece and there is \$5 a set. That is \$150 million a year. That is a good business, you know? And so we are in my opinion going to find some way of accomplishing this goal.

So if we can just go quickly down, maybe just a show of hands. How many of you believe that we can find an inexpensive way compared to the \$200 number, an inexpensive way of building a converter into TV sets? You can just raise your hands. How many of you believe that? One, two, three, four, five, six, seven, eight. You, Mr. Franks, are the outlier?

Mr. FRANKS. You know, Gerry Levin thought he was going to come up with an inexpensive box in Orlando, spent a fortune doing it, and never got there. I mean, I hope it happens, but I can't guarantee it.

Mr. MARKEY. If you knew that 33 million television sets were going to be produced each year—

Mr. FRANKS. At the moment they are analog sets.

Mr. MARKEY. [continuing] you would think the economies of scale would hit rather quickly in terms of the decrease of the overall price of this converter capacity.

Mr. FRANKS. I have a different take, with all due respect. I am sorry Mr. Shimkus left in one sense. I don't think that the solution is for all of the rest of you to leave and leave us to resolve this problem.

One of the worst problems that I see is still the copy protection scheme. I have only been working on it for a little over a year. We have made more progress since the letter you sent 2 weeks ago than we made in the preceding 12 months. I am not sure we need more legislation, at least not yet, as much as we may need your job owning.

And, Mr. Markey, may I remind you you are one of the most effective job owners I have ever had to endure.

Mr. MARKEY. Thank you. With all due respect.

Mr. FRANKS. With all due respect.

Mr. MARKEY. Yes, yes.

Mr. FRANKS. I think I am on record as having told this committee that it would be impossible to come up with a rating system for the V-chip that would work across the industry. And you somehow managed to induce us without legislating it. It was miraculous how we came up with it at 6 months.

Mr. MARKEY. Here is the thing. Here is the thing. In 1962, when this all-channel legislation passed, I am grown up as a complete consumer of contemporary American television culture, which my mother has always pleaded is limited. I have total—

Mr. FRANKS. She is wrong about that.

Mr. MARKEY. She said that they would donate my brain to Harvard Medical School as a completely unused human organ. So that was her observation.

And you know what was really great? You had the UHF, and there was nothing there on Channel 38-56. But once 38 and 56 were there and it was mandated, guess what happened. In 1963, 38 buys the rights to the Bruins. Now I can see every Bruins game. And then they buy the rights to every Red Sox game. I have been seeing a half a dozen of them a year. And so the programming follows, in other words, the technology.

Once the technology is there, it is going to get filled up. But the programming doesn't get created beforehand. You don't say, "Well, I am going to pay for" this or that or the other thing if you don't have anybody who is going to watch it because obviously we live in a capitalist society; right? And you have got to make a buck out of what you are doing.

So I just think that at the end of the day, we have to mandate that 30 million TV sets. By the second year, you have 60 million home sets. We have 100 million homes in America. By the third year,—and this is what typically happens in my opinion—is that the new TV set becomes the important new appliance in the house. So after 3 years, you get 90 million TV sets sold in America. If you do it for just 6 years, you have got 180 million TV sets.

We only have 200 million homes in the United States. So you are going to have on average about two new TV sets within 5 or 6 years. So at least you are moving to a point where you can start to discuss it, but the programming will start to come.

Mr. FRANKS. But, again—

Mr. MARKEY. With all due respect. I hear you.

Mr. FRANKS. Yes, and you know it is true. I mean, these are lovely sets that we brought in today and they were fun toys to play with. The most important equipment in this room are those little black boxes that were on top because they make an analog set able to receive a digital signal.

Mr. MARKEY. Let me go to Mr. Parrish for a second because this week Forbes says that we basically have reached a point where Scientific Atlanta and Motorola have a duopoly when it comes to set-top boxes. I am just wondering, Mr. Parrish, what do you think should happen here to make sure that we have got set-top box com-



petition that makes it more affordable and basically transparent in terms of the ability for any programming to be carried over it.

Mr. PARRISH. Well, Mr. Markey, RadioShack has participated with a group called the Consumer Electronics Retailers Coalition that has been working on this issue since the 1996 Act. And we are encouraged that the Commission continues to try to develop some rules out of this. But, again, 5 years has passed, and not much progress has been made, although there is a lot of work going on apparently.

I would think that what our feelings would be are: first, that the Commission should advance to January 2002, the date by which the MSOs would rely on the same set of specifications used by competing providers.

We would like to see the FCC perhaps intervene. This license that has been discussed and then advanced by cable and copyright interests, I am not aware of any manufacturers that have currently come comfortable enough to be able to sign it. I am afraid the Commission may have to more or less arbitrate and see if we can't get some resolution on some of these.

And, third, I think the Commission should look at what they did in the telecommunications industry or in the telephone industry and look at the subsidization patterns and say, "Aren't the same principles the same for developing a competitive video market that were present when we deregulated telephone?"

Mr. MARKEY. Thank you. If you would just indulge me for 30 seconds, Mr. Chairman? You have been very generous to me. I appreciate that.

Mr. Arland, it is \$200 a set-top box right now. What do you see it in 2 years?

Mr. ARLAND. Well, we have already cut retail prices for the set-top 15 percent year over year. The \$200 figure, as I mentioned earlier, is a premium over analog. I think it will come down. The rub here is—

Mr. MARKEY. Just give us a price, though, just so we have in our mind some idea of where you see it 2 years and 4 years from now.

Mr. ARLAND. You know, I have my competitors in the room. And I don't want to divulge what my plans are, but—

Mr. MARKEY. We will give you amnesty from any antitrust violation you might be making.

Mr. ARLAND. We are No. 1 in those set-top receivers. I might point out with direct TV systems, we sell thousands of those every day. So it depends on the network. I think the prices are going to come down. The rub is the timing. The rub is the timing. And I would contend that—

Mr. MARKEY. Even if, even if, we mandate 4 years, can you integrate in 4 years?

Mr. ARLAND. I already integrate. This set over here is already integrated.

Mr. MARKEY. Can you integrate for \$50 in 4 years?

Mr. ARLAND. I don't think I can do it for \$50, no.

Mr. MARKEY. Okay.

Mr. FRANKS. Even if you can't, say you could do \$50.

Mr. ARLAND. Marty, let me answer that. Even if I can and there is nothing to watch and if there is no cable carriage, there is no

point in building in this electronic set of \$200 for over-the-air reception.

Mr. MARKEY. Okay. If I may, I will just summarize. There is a chicken and egg quandary here: Does the programming come first or the technology? My own humble opinion, my father passed away last year, and I found the receipt for the television set he bought in 1950 for our house, and I was 3 or 4. So obviously I had been lying in front of it the whole way. And while I did enjoy those test patterns on 12 of the 13 stations and I did lie there, my interest did improve.

And, in fact, the programming came very quickly after the market ramped up from 1 million people in 1950, which I now realize, in retrospect, we were ahead of the curve, to about 30 million people just about 3 or 4 years later. It was great when "The Mickey Mouse Club," et cetera, showed up, but I don't think it would have if there weren't 30 or 40 million kids watching, rather than 1 million.

And so I guess the way I view it, Marty, is this, that I understand your concern about copyright. And I think we can work with you on that, but I don't think that has to precede the other work. In other words, I think that it is possible for us to work to give an incentive to ensure that you have the integration, you have the dual capability, and you have a marketplace out there where 35 million TV sets are being sold with it. So you have got a comprehensive policy that is moving it forward. Otherwise we will be in the chicken and egg circle forever, never breaking out. So that is my personal observation, and I hope that we can work together, Mr. Chairman.

Mr. UPTON. And you yield back the balance of your time, I know. Thank you.

Mr. Engel?

Mr. ENGEL. Thank you, Mr. Chairman. I apologize for bouncing back and forth. We have two subcommittee hearings going on at the same time in our committee. So I do apologize.

You know, when the Federal Government embarked upon moving the country to digital television services, one of the choices we had to make was the timing, a 2006 date when digital is supposed to be fully implemented. We are getting there. We are on our way there. But from what I have heard, we are probably going to miss that deadline as well.

When we made a decision, many other decisions were left to the marketplace to decide. And some of the people now seem to actually be asking for government to get more involved, rather than less involved. So I just want to say, as an aside, I would remind my friends in the private sector that the Democrats are close to re-taking the majority and will remember such requests if we do.

I want to ask Ms. Courtney because I have been one of Congress' leading voices in support of public television, but I am one of its biggest fans in or out of Congress. I have three children who have benefited immensely from public television. And I am very pleased to know that New York's public television stations will dedicate one of their multicast streams to an educational service called the Empire State Channel. It will provide teacher training, GED courses,

and other lifelong learning programming. To me, this is what television should be about or at least an option for people to watch.

To do this, obviously it is going to take a lot of time and a lot of money. I am wondering if you can comment. And if you have already, I apologize. Could you comment on the importance of the Federal Government assisting public broadcasting and converting to digital?

Ms. COURTNEY. Thank you, Mr. Engel. Indeed, it really is a terrific challenge for public broadcasters because the equipment costs the same, whether you are a noncommercial broadcaster or a commercial broadcaster.

We are hard at work. We have 28 stations on the air right now, public television stations. And we have a commitment from State and local governments I said of about 351 million. Many of us have promised we are going to have some sort of Federal match, even though it hasn't arrived yet in many instances. And we are also raising private funds out there.

But it is a daunting prospect because certainly in New York I know just the towers, the transmitters, the transmission lines, my colleague from the NAB, it is just an expensive proposition. We are committed, though, because we think it is a right thing to be doing. We are committed to the services that you were speaking about. But we are concerned about, one, that tremendous cost. We are concerned about reaching the deadline. We are concerned about some of the FCC rules that say one channel, rather than multicasting. We are concerned about showing up.

And I have testified before legislators in saying, "Here. We are ready to deliver these educational services," but nobody can receive them because they don't have a television that can pick them up. In a school, what are they going to do? Put a new master antenna? How many boxes will they need to convert? Will it be QAM-compatible if I negotiate a deal with Time Warner or my cable operator? Maybe yes, maybe no.

All of this is terribly expensive. And we want to realize the promise of this digital. And that is where the parents really want these services. I know our educators want it. We are talking about technology and education all over the place in every venue we are in, but I am concerned about ultimately delivering those services with those caveats that I mentioned. It is a concern.

Mr. ENGEL. Right. Well, I believe that the Federal Government really needs to continue to help public broadcasting. Five, 6 years ago, when the move was afoot in this Congress to eliminate government help for public broadcasting, one of the things I said then,—and I think it is even more true now—public broadcasting is public broadcasting.

We don't want it to be commercial broadcasting when people suggested, "Well, the funds can be raised in the private sector. Why does government have to put the funds forth?" I said then, as did others, that if we wanted it to be commercial, it would be commercial and not public. But I think that public broadcasting has a unique niche cut out. And I think the points you raise are very, very valid.

Ms. COURTNEY. Thank you. Mr. Engel, I was talking to my colleague over here. I was saying, you know, for cable operators who

have access to all of the byways in their communities, they can dig up the rights-of-way and have access to things to do things. They also have obligations in those communities for public service and education in many instances. I think public broadcasters are natural partners to help them with some of those obligations in a digital environment. We ought to have dialog about that as well.

Mr. ENGEL. Thank you. I have a question for Mr. Willner. I know that the cable operators have a limited amount of spectrum as well. Could you explain how much on average spectrum a cable company has and how it splits it up for TV, Internet, and telephone services?

Mr. WILLNER. Sure, I would be happy to. And, again, I am not a technologist but to the extent that I am familiar with the asset of the bandwidth. Most cable systems are being rebuilt today to a 750-megahertz bandwidth capacity, which sounds like an awful lot of television channels when each one of them is only 6 megahertz. What is actually happening, though, so that we don't force customers into paying more money for digital services, we are maintaining the analog broadcasts and cable signals on the first 550 megahertz of that plant.

So all that is left after we have rebuilt our plant is really 200 megahertz, from 550 to 750, in which we can deliver all of our video-on-demand services, all of our digital services, all of our interactive high-speed Internet access services, and all of our competitive voice telephony services, the last piece of the Telecommunications Act of 1996 that is still left without widespread competition. And we are going into that business right now.

Mr. WEED. If I may?

Mr. ENGEL. Yes, please.

Mr. WEED. It is a good opportunity to point out the difference between smaller market cable systems. I would say the average smaller market system is 450 megahertz. We just rebuilt our system in Port Townsend, which is 2,000 customers, to 450 megahertz. We used up to 330 for analog, which includes all the must carry. The remaining 80 megahertz is used with digital.

And, with all due respect to Mr. Markey, to his point, I would suggest that we are at the early edge of solving this chicken and egg problem. In that system, we are selling new customers—30 percent of them are taking digital. We just launched 20 new digital basic channels. The product is there. The customers are taking it. I am sure Mr. Arland is going to want to build some equipment for those millions of customers that are watching digital product.

Mr. ENGEL. Well, thank you. I am wondering if I could just get one more question in and go back to Ms. Courtney. If everyone had a TV set that picked up the digital signals and it was equipped with a strong enough tuner to get your signals over the air, would you still need must carry for every video stream?

Ms. COURTNEY. You are talking about simply over the air?

Mr. ENGEL. Yes.

Ms. COURTNEY. I am not his mother, but I, too, don't believe people are going to put up 30-foot antennas on their houses. I mean, that is what my chief engineer thinks. He told me that. That was our plan. I said, "Nobody is going to do that."

So, consequently, I think we have to have acknowledgement that people are receiving it on direct TV or EchoStar or cable. I think we have to have both strategies going.

Mr. ENGEL. What if you had a strong enough tuner, though, where you didn't need that?

Ms. COURTNEY. A tuner in your computer?

Mr. ENGEL. In your TV set.

Ms. COURTNEY. Well, right now we have every technology on demand. I can't operate all of the various remotes. I would say you still require putting up a new antenna. That is kind of part of the problem. And I don't think people are going to do it.

And also schools. We were developing strategy over here. I am trying to network with everyone to how we would do that with schools as well. Many of them have cable going into them, but we are going to have to figure out how, then, they pick up that digital signal and their compatibility.

I am very confused about the QAM versus the over-the-air, too. We don't have an interoperable system here right now. We really do have confusion in the marketplace right now.

Mr. MARKEY. Elliott, will you yield for just 30 seconds?

Mr. ENGEL. Yes, absolutely.

Mr. MARKEY. See, we have another public policy question up here, which is: How do we get back the 6 megahertz so we can auction it off for 3G or for whatever? Well, you are right. This might stop moving along. We still will be in a situation where you have all of the non-cable subscribers.

In other words, we have to get everybody pretty much moved over. And so it just can't be this system here and that set of subscribers over there or, else, we will never see this spectrum to auction it off so we can have another piece of this industrial plan where we auction it off so we can give the other entrepreneurs a chance to use it.

Mr. PARRISH. Excuse me. With all respect, Ms. Courtney and Mr. Arland, RadioShack thinks off-air antennas are beautiful.

Mr. UPTON. Mr. Stearns?

Mr. STEARNS. Thank you, Mr. Chairman.

Mr. Franks, earlier you said one of the stumbling blocks for this transition is the protection of intellectual property rights. So I just want to touch on this area again. Is there a way to assure the consumers are protected of their content and at the same time that the broadcasters are protected, too, so that there is not this illegal copying with all of this digital age?

Is there some way to develop or ensure that the digital content and equipment, such as set-top boxes, recorders, and television are speaking the same language? Maybe that is a question for—

Mr. FRANKS. Well, technology is not exactly my strong point either.

Mr. STEARNS. Yes.

Mr. FRANKS. My friend and former colleague Mr. Cookson would probably disagree, but, again, since the letter of the last several weeks, we have heard from a number of the manufacturing companies that they think that there may well be a way to fully protect the home recording rights of viewers. You go on the message boards, and they think that we are all trying to turn broadcast tel-

evision into a pay-per-view enterprise. That is not what CBS is about. We want to protect our intellectual property while we allow time shifting, home recording. So let us try and put that one to bed.

We think perhaps the answer is watermarking. There are technological solutions. But I would say to Chris, as I have said to the other studios, they won't guarantee to me that 10 years from now if we don't have a secure environment they will still license to CBS for over-the-air broadcasts their premium product. And that is the dilemma we face, that if, in fact, it drives further migration of "Titanic" or "Survivor" or the "Super Bowl" to a protected environment; whereas, we are unprotected, we are cooked, no pun intended.

And, frankly, part of the issue here is yes, we certainly want to move forward expeditiously, but if we go so expeditiously that we get another 5 million legacy units out in the marketplace and we come up with a solution that won't work with those 5 million boxes, then we are also going to have a little bit of consumer-viewer unhappiness that we would very much like to avoid.

I guess the point I would like to come back to, though, Congressman, and to Mr. Engel's point, I am not asking for government intervention. I am asking for the government to make up its mind to do something about this dichotomy that we have, on the one hand, if leaving it to the marketplace and then being unhappy that there is a prospect of not getting the revenue in 2006.

That is one point. But the other thing, to the point of you all leaving the room and leaving it to us, that isn't going to work either. I am not sure that actual legislation or regulation is necessary as much as staying on our backs and not saying, "Well, gee, we will be back in 6 months to see how things are going."

I wish that there were perhaps through the Commission some better job owning. Government is very effective at making the people at this table do a lot of things that we don't necessarily want to do in a timely fashion, but it is amazing how you are able to get our attention when you choose to. I guess my biggest surprise over the last several years of working on this is how passive the Congress and the FCC have been over something that is supposedly such a key national issue.

Mr. STEARNS. Mr. Chairman, I think Mr. Franks probably touches on the question, that we probably should just go down the panel and ask each of them: What, if any, do you see as the role of the United States or the Federal Government in ensuring that the transition to digital television occurs? And if you don't mind, Mr. Chairman, Mr. Franks has given his sort of answer, but I would just like, if I could, to just go down and ask each of them in a short amount of time just to give us what they think the role of the Federal Government is. What would you do if you were us?

Mr. PAXSON. Well, I think you would have to come to the conclusion that if we have a difficult digital transition, the fact that 33 million sets were sold in America last year that can't get a digital picture is a serious problem. And I think you have got to go back and resurrect the 1962 Act and have an all-channel set, one that is capable of receiving analog and one that is capable of receiving the digital signal.

Without it, I don't think you have a transition. If you don't include the broadcaster, you don't include the broadcaster in the world of copyright protection, you will not have a digital television set and you will not have a digital transition.

If we can't uphold the Congressional Act of 1992 as regarding must carry, I don't think you are going to have a digital transition. And that has been made very clear by a number of governmental agencies saying that must carry, full digital must carry, is required to have the spectrum turned in.

Mr. STEARNS. Okay. Mr. Cookson, maybe we will just go right down here. Hopefully we can just get sort of a nutshell answer.

Mr. COOKSON. Yes, sir. Continued oversight, I think not too differently from what Marty has suggested keeping people focused on the problem. We share the concern that CBS voices about the content that is on broadcast. Our disagreement, I guess, is only in the practicality of some of the steps in trying to get the technologies deployed in a reasonably prompt way. I think keeping people focused and continued oversight.

Mr. STEARNS. Mr. Weed?

Mr. WEED. I think it is very likely that by 2006, the huge majority of our customers, if not all of them, will have switched to digital, either by a box we have provided or by one they have purchased from RCA or RadioShack. And at that time, the broadcasters will want to switch from analog to digital on our systems and, therefore, the problem is going to solve itself.

Mr. STEARNS. Ms. Courtney?

Ms. COURTNEY. I think must carry of multiple signals, not just one primary video, is essential for public broadcasting. I also urge you for your Federal appropriation to allow us to match the money we are already raising or we won't make it.

Mr. ARLAND. I think in a nutshell two things. Cable compatibility is very important. Probably more important than over-the-air reception is cable compatibility. And I would agree with Chris and with Marty that simply keeping this issue at the top of everyone's mind is most important.

Obviously, as you have heard, I obviously feel that there should be no requirement to build all of these electronics into every set. After all, there was no mandate that created direct TV. There was no mandate that created the success of DVD. It was great technology and terrifically compelling programming. Putting those two things together is what leads to a successful marketplace.

Mr. WILLNER. Well, Congressman, I share the view that I think that the marketplace is actually going to solve this problem. And as more and more cable customers convert to digital on their own without having to buy a digital tuner, without having to buy a digital television set, the broadcasters are going to out of self-preservation convert to digital themselves as well.

I would remind Mr. Paxson, my colleague here, whom I have known for many, many years that 20 years ago, he walked into my office in New York with nothing more than an idea in his head and he wanted to get on the cable system that we were building in Clearwater, Florida at the time. And in 15 minutes, he walked out with a carriage agreement that started the Home Shopping Network because it was a good idea that we carried.

So I think that the market really is working. It will work. And I think the conversion will actually occur.

Mr. STEARNS. Mr. Parrish?

Mr. PARRISH. Congressman, I don't believe that the majority of television sets will be replaced in a short-term period of time. I think that these products have to be backwards-compatible to the millions and millions of high-quality analog sets.

I think the set-top box is more of a key, and I am ready for it. I am ready for an array of boxes from a basic box to a high-value box that may include Internet access through broadband. The FCC needs to complete the set-top box provision.

Mr. STEARNS. Mr. Tucker?

Mr. TUCKER. Yes, Mr. Stearns. I think many of my colleagues have already said some of the same things. One of the things we need access to is the 70 million cable homes right now because broadcasters are up and broadcasting in digital at this point in time and we are missing access to 70 percent of the homes that might want to have an experience with our high-definition television. We need sets that receive both digital and analog and we need interruptability standards.

Mr. STEARNS. Mr. Chairman, I have just got one 30-second.

Mr. TUCKER, Washington, DC is I guess in the top ten markets. How is high-definition television? Is it carried on the cable in Washington, DC? I don't live in Washington.

Mr. TUCKER. In Seattle, Washington. In Washington, DC?

Mr. STEARNS. In Washington, DC.

Mr. TUCKER. Not that I am aware of, sir.

Mr. FRANKS. It is not.

Ms. COURTNEY. It is not.

Mr. FRANKS. It is not.

Mr. STEARNS. On any of the systems in the metropolitan area?

Mr. FRANKS. The CBS affiliate, WUSA, owned by Gannett passes through all of our HD programming. And I am not aware that any of that HD programming is carried on cable.

Ms. COURTNEY. WETA is not carried.

Mr. STEARNS. Thank you, Mr. Chairman.

Mr. UPTON. Mr. Engel, do you have additional questions?

Mr. ENGEL. No, Mr. Chairman.

Mr. UPTON. Okay. I do. I have a couple of more, and then we will get to a close. A couple of things. Mr. Franks, CBS has done a pretty good job, darned good job, at broadcasting digital, particularly in prime time. Where do you think your competitors, ABC, NBC, Fox, are?

Mr. FRANKS. Well, I wish they were here to answer that question.

Mr. UPTON. They probably are.

Mr. FRANKS. I would be happy to yield. I would be happy to yield to them, Mr. Chairman.

Mr. UPTON. Are you next to them?

Mr. FRANKS. Yes, and I feel their support for me.

In all honesty, I mean, I have enough trouble overseeing CBS's digital transition. I am not sure I want to take on overseeing theirs. And, on the other hand, I am kind of enjoying this competitive advantage that they are ceding to me at the moment. And so



I am not terribly interested from one standpoint in them rushing along to compete.

I do think they are coming. ABC has put on "NYPD Blues" this year and a lot of movies. Fox has experimented with a fair amount of wide-screen standard-definition programming. It is not what I wish. It is not what I think would be best for the transition, although I am not sure that it has to be HD as much as if it is compelling multiplexing.

Part of I guess what I am recommending to you is I am very surprised that I am the only network witness this morning, with all due respect to the WB. I mean, if you want this transition to work and you want to do it through job owning and keeping our attention focused, I guess it might be wise for you to ask that question directly of my competitors.

Mr. UPTON. Do you think that they are within 2 years, 2 or 3 years of being where you are today? I mean, I think about the 1906 deadline that is out there.

Mr. FRANKS. The problem, of course, let me try and defend them, which is hard for me to do. There is no incremental revenue in that. To do the Super Bowl costs an extra half a million dollars. Luckily, thankfully, we had a lot of support from RCA, but we made not one more dime from our primary advertising business because we did the game in HD.

And until there is some return on that investment, we are probably going to spend this year an incremental \$7 or \$8 million converting programming to high-definition. The return on that investment is de minimis.

Mr. UPTON. See, that goes back to the question with the broadcasters to a degree. You have got the same advertisers that are out there to run your programming. Whether you are a sizable station and broadcasting from the Sears Tower or you are a smaller station and broadcasting in South Bend, Indiana or Grand Rapids, Kalamazoo, Battle Creek, your costs still are in the millions of dollars.

You have only the same pool of advertising to get your programming out there. And when you are a public broadcaster, again, you are relying on the viewers calling in and ringing the phones wondering when that little segment is going to be over so that the Big Ten basketball or whatever the program is, your costs are there.

And now from the broadcasters' point of view, again, I have seen remarkable efforts to move the ball down the field, certainly the big stations. As I look at my district, the smaller stations, too, the plans are in the works.

As you mentioned in your testimony, I think the WNDU or I guess it was Mr. Arland, they are there. They spent the money. They have got the cameras. I have kicked the tires. They are there.

Mr. ARLAND. They call me about every other week saying, "Won't you please sponsor something on our station?" because their network supplies one program a night, and that is it.

Mr. UPTON. Right. But when I visited them and when I heard from some of my local broadcasters again from Michigan, even this week, there are not a lot of sets out there for them to receive. But do you feel pretty good that, in fact, the timetable that was laid out

is going to be hit by the broadcasters in terms of being able and spent the money to get on the digital?

Mr. TUCKER. Mr. Chairman, I think the broadcasters will spend the money to get on. There might be some delays in the smaller markets and requests for delays because of economic hardships. But I can give you a clear example.

In Seattle, where all four of the major affiliates are broadcasting, all of the local stations are broadcasting in HD, we are doing a full HD newscast, there are only 10,000 HD sets in the marketplace. About 1,500 of those receive over-the-air broadcasting.

There is no revenue stream there. We are using that as a learning experience so that we can take some of that information that we learned and some of what we learned technologically to pass down to our smaller market stations. There is an awful lot of that going on. There is no revenue.

And the \$70 billion myth, none of us have put any extra money in our bank accounts or have improved our balance sheets at all. There is no \$70 billion benefit to broadcasting. It is an expense. We are trying to transition the American public to our service. We need them to view us to be able to gain any money from that.

Mr. UPTON. Mr. Weed, I am one of those 26,000 Americans last year that bought a digital TV. And I like it a lot. I recommended it to my dad, who lives across the street from me.

We have a small cable company. My guess is they may be a member of your organization. I don't know. I will find out later, I am sure.

Mr. WEED. They probably are.

Mr. UPTON. Probably not? All right. Well, it is a really small one.

Mr. WEED. I said, "They probably are."

Mr. UPTON. Probably are. Okay. But I know that having bought that digital set, my local Michigan cable company doesn't have the capability to send me a digital signal. They have about 40 stations that they offer, one HBO if I decide. So it is a pretty small company.

Where are your members? What percent of your members are able to upgrade up to a digital signal if somebody has got one at the end of the line?

Mr. WEED. Most of our members are deploying digital now. The cost for small operators, when you are spreading \$100,000 head in—

Mr. UPTON. Do they have to rewire all of the neighborhoods as well? Do they have to put different cable in, different fiber?

Mr. WEED. The primary cost to adding digital is fixed costs for the head-in. And we are spreading that over a much smaller customer base. So our average system is—

Mr. UPTON. So it is just a—

Mr. WEED. [continuing] 1,000 customers. You have got to spread the head-in cost of \$100,000.

Mr. UPTON. But they can leave the existing cable in place?

Mr. WEED. Yes. Then you have got to buy a box to convert the signal because we don't have a common standard. But that is digital. I know my uncle just bought a real fancy TV. I was there in Seattle last week. He was showing me his—I don't know—\$10,000

plasma screen HDTV. He had the same issue with that big cable system. We are providing a digital stream.

Mr. UPTON. Did he go with a satellite, then, instead of a cable?

Mr. WEED. What is that?

Mr. UPTON. He bought a \$10,000 TV.

Mr. WEED. No. He put one of those ugly antennas up so he can get Channel 4 in Seattle and watch HDTV.

Mr. TUCKER. We do a very good job, sir.

Mr. WEED. But the cable companies, our members, are providing digital. The cost is coming down, and it is being deployed rapidly. But it is a digital signal. It may not be compatible with the HDC set you buy.

Mr. UPTON. Right. And what is your guesstimate in terms of when is that time table going to be finished when all of your members are able, in fact, send out a digital signal? Two years? One year? Three years?

Mr. WEED. The marketplace right now is such that if a small operator doesn't switch and launch digital, they are going to be in a competitive hardship. DBS is forcing our members to launch digital. I can't give you an exact prediction, but I would say within a couple of years, small operators that don't carry a digital signal of some kind will be at a high competitive disadvantage.

Mr. WILLNER. Mr. Chairman, if I could just ask, I just want to point out that at this table with all of these industries represented, there is one industry that has spent nearly \$50 billion in the interest of converting to digital television. It is the cable industry. So it kind of gets my juices going.

When we hear about the taking of additional capacity out of these networks that is really being reserved for competitive high-speed access and competitive telephony and digital television, it just doesn't sit right with me that the one industry that has gone and done what you folks have asked us to do should be penalized for doing that.

Mr. PAXSON. Mr. Chairman?

Mr. UPTON. Yes?

Mr. PAXSON. If I might? Thank you. I think it is well to remember that with all of this cable digital roll-out and all of these digital boxes, the HDTV, the standard high-definition television is going to be converted down into those 33 million analog sets who aren't going to see a difference.

We have to sell digital television sets in America to have it transition to digital. And without that all-channel set, we are not going to see it because yes, we are going to have a digital box, but all of the digital boxes they brought out today, which were about 14 million, most of which are sitting on top of an analog TV set converting whatever comes in digitally down into analog. And, therefore, you have no transition.

Mr. WILLNER. I am sorry, but when you are multicasting over digital and delivering six different signals, it will look no different to the consumer than a standard television signal does today. Every one of the 30 percent of our customers in Columbus, Ohio who have purchased digital cable service from us are doing it because they want the product, not because they have to.

Mr. UPTON. Okay.

Mr. MARKEY. Mr. Chairman?

Mr. UPTON. Mr. Markey?

Mr. MARKEY. Thank you, Mr. Chairman.

I think there is nothing more satisfying to any human being than quoting himself. I am going to read you from my July 2000 testimony, "A little over 2 years ago"—that would have been April 1998 I am reading. Now we are back in July of 2000.

"A little over 2 years ago, this subcommittee also held an oversight hearing on the digital TV issue. We still have the leftover issues from that last oversight hearing in the previous Congress. Those issues implementing cable must carry rules, the lack of sufficient digital programming from content producers, the lack of progress on competitive set-top box marketplace, the public interest obligations of digital broadcasters, and where the broadcasters can have any obligation to offer HDTV at all can simply blast data services to the public remain as issues for today as well."

Now I can read you my 1998 statement in this hearing on this same subject, but since I haven't changed anything from the 1998, 2000, or 2001 because it really saves us a lot of time in the morning because all we do is just pull up our statements, I can go back right to my 1997 amendment. It is all the same. You don't change anything. We have the oversight hearings every year: the competitive set-top box, and then it was the Bliley amendment of 1996. It has been the law for 5 years now, 5 years.

So we need to come together on this. Okay? We need a way in which we resolve these issues. HDTV, deadline 2006, "HD" might as well stand for highly doubtful. That is not going to happen; right? It is like HDTV deadline is an oxymoron as far as I am concerned. You know, it is like Red Sox World Series champion. And we want a—

Mr. UPTON. BC.

Mr. MARKEY. Yes, NCAA champion. Yes. Thank you. I have got us playing Michigan State in the final.

Marty?

Mr. FRANKS. In high-definition.

Mr. MARKEY. In high-definition, I hope.

And I just really genuinely believe that we are going to have to do something about this all-channel capacity, this ability to be able to jump-start the marketplace. This is an industrial policy. You know, I was approached in 1987 to have hearings so that we would take the spectrum and give it to broadcasters, give it to them, not make them pay.

So that is a government program now. That is not free market because we had an objective. I agree with the objective. I still do. But I do know it is also wrong to allow for any additional time to transpire before we reclaim the six megahertz.

And I am just afraid that if we just allow it for the free market, that although I had the first hearing 15 years ago, I was a relatively young man at the time. Right now I face the prospects of being a relatively old man before I ever actually see in this hearing room the prospects of that technology being available on a ubiquitous basis to consumers.

And so in my own family, I gate the television era by the day my father bought the first black and white TV set, which is 1950;

the day my father walked in with the first color TV set on 2 days before the first Super Bowl in January, 1967, which was a big moment in our neighborhood, my father did that; and then the first day the equivalent that my father could buy that HDTV set and know that it was affordable for him. And I don't think we are close to that day at this point. I think that is a shame for the American consumer because we have been holding out this promise with them for a long, long time.

And I think we are going to have to take the action, Mr. Chairman, to get this thing started because while I do agree with you, Marty, that job owning does help, I am afraid that my own experience has, unfortunately, demonstrated that it is just not working in a timeframe that is compatible with the assets that the American people have handed over and with the promise that they would derive some benefit from it during their lifetime. We could literally have gone 30 years, and I don't think that is really fair to them.

So I thank you, Mr. Chairman, and I hope that when we have this hearing next year, it will be overseeing policies working in conjunction with voluntary action by the industries to get this day advanced so that the public are the beneficiaries.

Thank you.

Mr. UPTON. Mr. Engel, do you have anything else to add?

Mr. ENGEL. No, Mr. Chairman.

Mr. UPTON. Well, again, I want to thank all members for their time today. There may be some questions coming your way. A couple of members since we are done voting went back to their districts. They have asked some questions that I am sure are going to be coming.

I want to thank you again for the time that you spent. This is an issue that is before us. It is an issue that we need to deal with that we need to get our mitts on as we begin to see this ball go down the field. I look forward to working with all of you as we try to craft the proper solution so that, in fact, we don't end up going over the waterfall in 1906 and ask what happened. Thank you very much.

[Whereupon, at 1:43 p.m., the subcommittee was adjourned.]